Driving Education Operational Excellence through Digital Transformation and E-Governance

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A R T I C L E   I N F O

A B S T R A C T

The United Arab Emirates is a pioneer in automating public services, positioning digital government as a key component of the fourth industrial revolution, which centers on digitalization and digital transformation. Digitization in education involves the use of desktop computers, mobile devices, the Internet, software applications, and other digital technologies to teach students of all ages. Examples include computer-assisted exams, online universities, e-books, and educational entertainment. Some technology educators and evangelicals believe that education will eventually become a purely digital activity, supported by artificial intelligence and virtual reality. To explore the impact of e-governance on education, an interview was conducted among stakeholders of electronic government institutions, including in-service government officials and leaders of government management programs. The objective is to assess the interview results and shed light on the real digital transformation processes and their success in e-governance to achieve school excellence. The study finds a significant relationship between the use of digital transformation tools and e-governance in schools, indicating that the more digital transformation is implemented, the higher the chances of improving institutional excellence in schools.

1. INTRODUCTION

Digital transformation within the UAE began long before the Covid-19 pandemic accelerated its adoption [1-5]. In 2012, H.E. Sheikh Mohammed bin Rashid Al Maktoum launched the Mohammed bin Rashid Smart Learning Initiative, encompassing all state schools in an effort to create a modern educational environment. This initiative included the implementation of Smart classes in all schools, the distribution of tablets to all students, and the provision of high-speed 4G networks to every state school [6-11].

The outbreak of Covid-19 made the shift to e-education essential to ensure continuous learning and to support the progress of young people in shaping their future. This study explores the current state of schools under this new system. It specifically aims to identify the benefits and challenges of this digital transformation and to propose solutions to address rising issues encountered by schools [12-18].

2. LITERATURE REVIEW

The United Nations has highlighted the advantages nations can achieve by transitioning to electronic governments, or e-governments. Utilizing the internet for official transactions can significantly reduce costs and enhance process efficiency [19-23]. This transformation decreases the need for

numerous prints, mailings, and procedural steps, and greatly reduces waiting times. By allowing citizens to process applications from home, they become more aware of government rules and regulations. Furthermore, when information is accessible to all employees, cooperation and coordination improve automatically without the need for personal interaction [24-29].

Streamlining business transactions via the internet can enhance economic activities, helping them grow and expand beyond the local scale. This shift fosters a knowledge society where people access information online and find answers to their inquiries without formalities and waiting in lines. These are fundamental changes from the traditional government model to an e-governance model [30-34].

Factors	Traditional Government	E-Governance
Mode of service	Service for citizen	Self-service in many operations
Goal	Citizen in line	Citizen on-line
Expectation	Digital exclusion	Digital participation
Change	Paper intensive	Government on-line
Management style	Transaction intensive	Knowledge management
Orientation	Production cost, efficiency	User satisfaction and control flexibility
Leadership style	By rule and mandate/command and control	Flexible management interdepartmental teamwork, facilitation and coordination
Organizational structure	Top-down hierarchical	Innovative entrepreneurship, multi-directional network with central coordination, direct communication.
Communication	Centralized formal limited channels	Formal and informal direct and fast feedback, multiple channels.
Interaction	Documentary mode and interpersonal interaction	Electronic exchange, no face-to-face interaction
Process organization	Functional rationality, vertical hierarchy of control	Horizontal hierarchy, network organization, information sharing.

1 Source: Ashehry. et al (2006)

It is clear that this transformation is not merely superficial; it has initiated changes across all facets of the public service sector, from overarching vision to daily management practices [35-39]. This aligns with contemporary trends in policy management, which advocate for interactive,

innovative, and integrated services [40-44].

2.1 Supply Chain Triangle
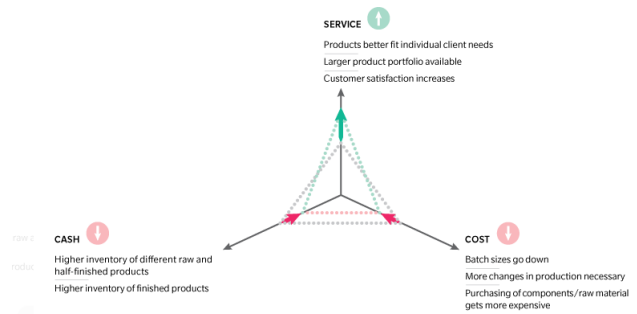
2 Source: OliverWyman (n.d)

The UAE Cabinet approved a Dh 61.35 billion federal budget for 2020 and established an Education Support Fund to foster partnerships with the private sector. Given this substantial investment, the public expects significant results. Consequently, digital transformation efforts must deliver outcomes that match the scale of this investment. Anything less would indicate subpar performance [45-51].

2.2 Hypotheses of the Study

This study assumes that both human and technological factors influence digital transformation capacity, which will be examined using survey data [52-57]. Digital transformation is an enterprise-wide approach, and aligning a school's business strategy with its IT strategy is crucial, especially as IT tends to drive e-governance initiatives. According to scholars, the directivity and strategic linkage between e-governance and IT strategy significantly affect information system efficacy and school performance. Empirical studies and case observations indicate that schools with a strong strategic relationship between IT and school performance use IT more intensively and strategically to enhance performance [58-64]. The authors also found that the strategic linkage between IT and business is highly correlated with both e-governance and innovation. Therefore, the strategic alignment between IT and school operations can impact digital transformation capacity. Given that the ultimate goal of digital transformation is innovation and improved organizational performance, it is assumed that the CEO's digital leadership positively affects digital transformation. Based on the above literature, the following hypotheses were formulated [65-67].

H1: The human factor has a positive impact on the digital transformation capacity.

H2: The technological factor has a positive effect on the digital transformation capacity.

H3: Strategic linkage between IT and school business has a positive impact on digital transformation capacity.

H4: Positive effects of human factors on digital transformation capabilities will be reinforced by CEO's digital leadership.

H5: Positive effects of technology elements on digital transformation capability will be reinforced by CEO's digital leadership.

H6: Positive effects of IT-schools business strategic link to digital transformation capability will be reinforced by CEO's digital leadership.

2.3 Description of the Business

2.3.1 Profile and Industry

The UAE Ministry of Education (MOE) was established in 1971. Since then, the Ministry has undergone continuous development to prepare its youths for future challenges and help them fit into the market economy [68-73].

MOE Vision: The vision of the ministry is geared towards innovative education for some knowledge, pioneering and global society [74-77].

Mission: MOE mission is to develop and innovative Education System for a knowledge and global competitive society, which includes all the age groups to meet the future labor market needs and requirements and to ensure the quality of the ministry of education outputs, and thus provide the best services for internal and external customers [78-82].

MOE adheres to the following values and principles:

i. Citizenship and Responsibility: With these values, the ministry intends to enhance the national citizenship and social responsibility of every Emirati.

ii. Islam Values and Principles: The MOE reenforces human values in tolerance, discussion, peace, moderation and volunteering.

iii. Commitment and Transparency: The MOE commits to professionalism and transparent performance.

iv. Equality and Justice: The MOE commits itself to improving its community partnership and accountability in the education process.

v. Participation and Accountability: The MOE ensures equal educational opportunities for all.

vi. Science, technology and innovation: In these values, the MOE encourages a society that is driven by innovation, science and technology.

2.3.2 The Digital Transformation Journey in Education

As an economic and financial hub, Dubai has been enhancing public policies across all sectors [83-87]. The e-government system has been operational since 2001, following the launch of the Dubai e-government official portal by HH Sheikh Muhammad Bin Rashed Al-Maktoum. Initially, the portal offered 14 online services, making it the first Arab e-government. In 2005, the introduction of an online fee payment system necessitated changes in the IT systems of all government authorities to accommodate this service [88-93]. By 2009, all government services were available online. The Dubai e-government strategy, described on its website, emphasizes accountability, efficiency, innovation, and a forward-looking approach.

In 2013, HH Sheikh Muhammad Bin Rashed Al-Maktoum announced the development of transforming e-government into smart government. A team was established to revise the existing system to incorporate end-to-end customer service [94-101]. The first draft of this initiative was completed by the end of July 2013, outlining a framework for official authorities to organize their work through a high-level planning tool that specifies priorities and implementation mechanisms. The Dubai e-government portal provides users with information about official procedures and the necessary documents for issuing and renewing any official document, fostering a society based on knowledge and awareness of rules and regulations [102-107].

2.3.3 Critical Variables of Digital Transformation

In order to adapt and keep pace with the digital transformation environment, four variables were developed based on the Socio-Technical System (STS) framework (People, Organization, Technology and Tasks, and an extended STS framework from an integrated viewpoint by adding external variables was proposed [108-111].

- Strategic Alignment of Business with IT

The strategic alignment between IT and business plans ensures that business strategies, objectives,

and requirements are coordinated to implement digital transformation effectively [112-118]. This alignment is a key concern for management, as it demonstrates how information technology can support business goals and how business strategies can be adjusted to leverage IT for digital transformation.

- CEO's Digital Leadership

According to research, an effective method for digital leadership is a management-led, top-down transformation approach. They argue that employees must engage in various ways to drive change under the strong leadership of line managers. Therefore, senior decision-makers in the organization must quickly and accurately understand the conditions for change in terms of perception and design. The study also suggests that achieving digital transformation incrementally is challenging [119-123]. Leaders can use digital tools for governance and transformation, which fosters an appropriate organizational culture, talent development, and technical investment. Scholars also found that the strategic alignment between IT and business significantly relates to e-governance and innovation. Thus, the strategic linkage between IT and educational institutions can impact digital transformation capacity [124-127]. Given that the ultimate goal of digital transformation is innovation and organizational performance, it is assumed that the CEO's digital leadership positively influences digital transformation.

- Human Resources

The level of trust and commitment that empowers us to confidently challenge each other and take on the risks of collaboration among our organization's members and departments [128-129].

- Technological Variable

Firms will thrive when new technologies are developed to meet user expectations and keep pace with rapid technological changes. Digital transformations include digitization, but there are significant differences between the two. Digitization refers to converting information from the analog to the digital world or automating processes through information and communication technology (ICT) [130-134]. In contrast, digital transformation is a complex issue that impacts many aspects of a company. Digital technology can lead to fundamental changes in business models, products, processes, and organizational structures. Several factors must be considered, such as the organization's agility, which is essential for successful change, and a balanced approach to securing company resources, capacity building, and development. However, these conditions often have characteristics that are not clearly understood, potentially leading to management difficulties in the long run if a company overlooks them or takes a different direction.

2.3.4 Critical Variables of E-Governance

- Technical Infrastructure

Education infrastructure facilities are considered a key component of educational outcomes. The primary factors influencing educational goals include curriculum, teacher quality, public relations, and school organization. School infrastructure facilities significantly impact student teaching and learning activities [135-137]. When students feel comfortable and supported in their learning environment, they are more engaged and motivated. Therefore, effective management of educational facilities and infrastructure is crucial to optimize the use of existing resources.

- Qualified Manpower

According to research, human beings are the fundamental basis of a nation's wealth. This principle also applies to educational institutions, making it essential for educational management to address the training needs of its staff, particularly lecturers, who bear the significant responsibility of advancing the institution's educational goals [138-139]. The study suggests that the quality of education largely depends on the quality of the lecturers, which in turn relies on the standard of their professional development. Without well-trained, qualified, and committed lecturers, it is impossible to achieve an effectively functioning educational system.

2.3.5 Relevant Case Studies

Being a recent development, e-governance has been a popular topic for researchers who subjected it to evaluation and diagnosis of challenges. Below are a number of these studies:

i. To evaluate the performance of the e-government of Dubai, the government conducted an evaluation survey to reveal the level of performance for the year 2012-2013 for all its 24

websites. The evaluation form was posted on its website for respondents, and the results were tallied [140-143]. The results revealed that the general satisfaction among users mounted to 78% with Dubai Water and Electricity Services scoring the highest in customer satisfaction with a score of 93%. The criteria of evaluation included accessibility, usability, content, and policies [144-146].

ii. It has been investigated the situation of e-education in Bida, Nigeria. The study covered 86 primary schools and found out that 70% of the sample were aware of their computer literacy level and confident about it. The researchers explained that computer literacy should be broken down to specific skills that teachers must be able to master for educational purposes, giving priority to the applications that teachers and students need including Microsoft Office and e-mails [147-149].

iii. The impact of e-governance on education in the state of Orissa, India, highlight several benefits such as improved funds management, more efficient service delivery, and enhanced data transparency [150-153]. He argued that since e-governance enhances overall performance by making processes more effective and efficient, these benefits extend to the education sector as well. Mohanty believed that promoting better transparency and interconnectedness is key to achieving these improvements.

iv. Researchers analyzed the role of the e-governance system in supporting higher education in India. They suggested that e-governance is the solution to India's untidy educational system. This is because the system allows authorities to monitor these institutions, ensuring that their interactions with society and other stakeholders are effectively managed and maintained [154-155].

3. RESEARCH METHOD

According to observation, "A qualitative study is defined as an inquiry process of understanding a social or human problem, based on building a complex, holistic picture, formed with words, reporting detailed views of informants, and conducted in a natural setting."

Scholars' adoption of the qualitative approach is justified due to the complex and multi-variable nature of the phenomenon being studied, which is relevant to this research topic. However, because of the large population size, interviews alone may not provide sufficient data to cover a broad sample. To present a more comprehensive and credible picture that encompasses all the interfering factors and represents the different parties involved, the research employed a mixed-method approach.

A survey was distributed to random educators in schools using an instrument developed by the authors, resulting in 103 responses. These responses were analyzed using the SPSS program. Additionally, the study collected data through interviews and desk research. The interview method provided primary data from key sources, including Eng. Amal Abdulrahman, Director of Digital Transformation at MOE; Mr. Khalid Almulla, Director of the Inspection Sector who implemented e-governance in the Department of Inspection; and Mr. Nabeel Albulooshi, Director of Schools. These individuals were selected for their direct involvement in planning and implementing the e-governance system at their respective institutions. Three interviews were conducted via the Zoom online meeting platform.

For desk research, information was gathered from relevant literature focusing on the application of e-governance systems in different countries. This literature provided a foundation for determining how the UAE government could apply the system to its schools and digitalize its services. These case studies also helped predict the likely outcomes of such implementations.
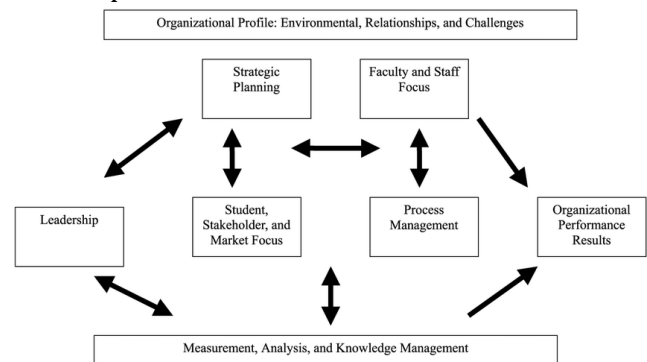
Source: Baldrige National Quality Program: Education Criteria for Performance Excellence (2004)

3 Figure 1: Theoretical Framework, Source made by authors

H1: E-Governance can achieve a high operational excellence in the schools.
H0: E-Governance can not achieve a high operational excellence in the schools.

4. ANALYSIS

Taking the following hypotheses into consideration:

H0: Digital transformation has affected E-Governance in education positively.

H1: Digital transformation has affected E-Governance in education positively, but there are some challenges.

After conducting the interview sessions with the three target interviewees described in the previous section, several findings emerged.

First, the e-governance system is a well-known concept in the UAE, particularly as it has been adopted by the government in its operations. The system aims to enable school management to provide educational services to students and parents 24/7 through online service platforms. This leads to the second finding: the implementation of the e-governance system is designed to enhance communication. From the school management's perspective, the system facilitates easier dissemination of information regarding school policies and activities to students and parents. From the parents' perspective, the system allows them to monitor their children's development and progress at school by providing regular evaluations and assessments from teachers through various communication channels.

Third, the interviewees agreed that the UAE government should play an active role in ensuring the proper application of e-governance in school operations. It is the government's responsibility to ensure schools' compliance with these systems (Amal, Figure 1 from MOE website).

The interviewees contended that implementing the e-governance system would enable school management to offer superior services to their students. Additionally, they noted that the system would aid in fostering a student-centered organizational culture.

4.1 Correlation Analysis

The correlation analysis is conducted with the effectiveness of digital transformation kept constant, while other variables are tested to determine the strength of their correlation.

4.1.1 Gender Correlation (Appenix 1-Table 1)
r = -0.072, p = 0.468

The negative correlation is significant but weak.

- Operational Excellence and Digital Transformation (Appenix 1-Table 2)

The correlation is significant at the 0.01 level (2-tailed).

The positive correlation suggests that increasing operational excellence can enhance digital transformation effectiveness.

- E-Governance Standards and Digital Transformation (Appenix 1-Table 3)

The correlation is significant at the 0.01 level (2-tailed).

A positive correlation indicates that higher e-governance standards improve digital transformation effectiveness.

- Digital Transformation and Using Improvement Plans (Appenix 1-Table 6)

The correlation is significant at the 0.01 level (2-tailed).

A negative correlation suggests that not using digital transformation for improvement plans decreases school excellence effectiveness.

- Degree of Participation and Digital Transformation (Appenix 1-Table 7)

The correlation is significant at the 0.01 level (2-tailed).

Increasing participation improves digital transformation effectiveness.

- Digital Transformation Tools and E-

Governance Standards (Appenix 1-Table 8)

The correlation is significant at the 0.01 level (2-tailed).

Using digital transformation tools enhances e-governance standards effectiveness.

- Educational Oversight and Operational Excellence (Appenix 1-Table 9)

The correlation is not significant at the 0.05 level (2-tailed).

Increased oversight for e-governance policies improves operational excellence effectiveness.

- Digital Transformation and E-Governance (Appenix 1-Table 10)

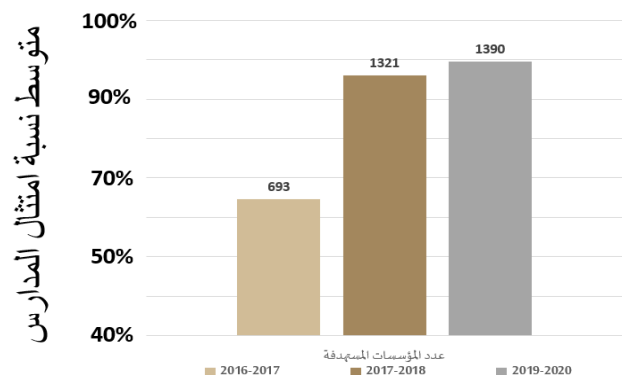The correlation is significant at the 0.01 level (2-tailed).

Increased digital transformation usage improves e-governance effectiveness.

- Digital Transformation Tools and Operational Excellence (Appenix 1-Table 11)

The correlation is significant at the 0.01 level (2-tailed).

More digital transformation tool usage enhances operational excellence effectiveness.

- Standard of School Excellence and Digital Transformation (Appenix 1-Table 12)

The correlation is significant at the 0.01 level (2-tailed).

Higher school excellence standards improve digital transformation effectiveness.

- Digital Transformation Services and Administration Monitoring (Appenix 1-Table 13)

The correlation is significant at the 0.01 level (2-tailed).

Increased use of digital transformation services improves administration and staff monitoring.

- Age and Effectiveness of Corrective Plans (Appenix 1-Table 14)

r = -0.50, p = 0.613

There is a significant negative correlation between age and the effectiveness of corrective plans.

4.2 Regression

- Predictors

(Constant), Gender, Age, Digital Transformation's Effect on E-Governance for Operational Excellence, Operational Excellence's Contribution to Digital Transformation Implementation, Perception on Increasing Regulatory E-Governance Standards for School Excellence Enhancing Digital Transformation, Knowledge of E-Governance Concepts, Impact of E-Governance on Educational Procedures and Processes, Use of E-Governance Implemented by Digital Transformation for Improvement Plans and Procedures, Degree of Participation in Improvement Measures, Increase in Using Digital Transformation Tools for Ministry-Specified E-Governance Standards, Knowledge Level of E-Governance Regulations and Policies.

4.3 Appendix 1- Table 15: Model Summary
4.3.1 R Value: 0.440

- Indicates the quality of prediction for the dependent variable (effectiveness of digital transformation and e-governance). A value of 0.440 suggests a moderate prediction quality.

4.3.2 R Square Value: 0.194

- Represents the proportion of variance in the dependent variable explained by the independent variables. A value of 0.194 indicates that 19.4% of the variability in the dependent variable is explained by the independent variables.

4.3.3 Adjusted R Square Value: 0.134

- Provides a more accurate interpretation, showing that the model explains 13.4% of the variability in the dependent variable.

4.4. Dependent Variable
Did Digital Transformation Impact E-Governance for Operational Excellence in Your School?

4.5 Explanation of Significance Test
4.5.1 Overall Model Fit (Appendix1-ANOVA Table 16)
The F-ratio in the ANOVA table (Table 16) assesses whether the overall regression model is a good fit for the data. The table indicates that the independent variables significantly predict the value of the dependent variable: $F(7, 95) = 3.260$.

- Predictors

(Constant), Gender, Age, Perception on Increasing Regulatory E-Governance Standards for School Excellence Enhancing Digital Transformation, Knowledge of E-Governance Concepts, Impact of E-Governance on Educational Procedures and Processes, Use of E-Governance Implemented by

Digital Transformation for Improvement Plans and Procedures, Degree of Participation in Improvement Measures, Increase in Using Digital Transformation Tools for Ministry-Specified E-Governance Standards, Knowledge Level of E-Governance Regulations and Policies.

- Dependent Variable

Did Digital Transformation Affect E-Governance to Achieve Operational Excellence in Your School?

5. DISCUSSION
Table 17 presents the statistical significance test results for each independent variable. The t-values are 2.210, -0.083, 1.086, -0.172, -1.366, 1.696, and -0.385, corresponding to p-values of 0.143, 0.029, 0.934, 0.281, 0.864, 0.175, and 0.093 respectively. These p-values indicate that the independent variables are statistically significant.

Ensuring compliance of E-governance with the standards of the Ministry of Education (MOE) significantly enhances the effectiveness of digital transformation. Additionally, an increase in knowledge of E-governance and its policies leads to increased effectiveness of digital transformation. Participants' perception suggests that improving school operational excellence will also enhance the effectiveness of digital transformation. There is a significant positive relationship between digital transformation and the impact of E-governance, indicating that enhancing E-governance can improve school operational excellence. Furthermore, increasing participants' knowledge of E-governance concepts improves the effectiveness of digital transformation.

The majority of respondents were aged between 40 and 49, and the research participants were predominantly female.

5.1 Benefits and challenges of Digital Transformation
Based on the aforementioned findings, it can be suggested that the e-governance system offers several advantages to school operations. These include fostering transparent and efficient communication among stakeholders, facilitating a shared workspace and resources, and enabling collaborative learning and teaching between teachers and students. These benefits stem from the system's characteristic of being open and adaptive.

However, it is important to note that since the system operates online, occasional cyber-attacks pose a significant threat. Additionally, the system's openness may increase the risk of data theft, which could be particularly detrimental if the stolen data is sensitive and confidential. Furthermore, implementing the system would require substantial funding, necessitating careful consideration by school management to secure the necessary resources.

6. RECOMMENDATIONS
Given the challenges highlighted in the preceding section, the following recommendations are suggested for school management to consider before implementing the e-governance system:

- Develop comprehensive plans for system implementation: Define the vision and objectives of the application clearly. Setting appropriate objectives will assist school management in determining how the system should be utilized and which activities it should encompass. Furthermore, it will provide a clear guideline to all school staff on proper system operation.

- Implement robust data protection measures: Anticipate cyber-attacks and employ advanced protection and security systems to safeguard operations. These systems should filter out activities and deny access to unauthorized users, providing extra protection for shared and exchanged data and information. Additionally, limit access to the system's servers and storage to a few individuals entrusted by stakeholders to minimize the risk of unauthorized access.

- Facilitate active government involvement: Encourage the UAE government, particularly the Ministry of Education, to play an active role in supporting schools in adopting the e-governance system. The Ministry is responsible for establishing the national education plan in the UAE and developing an innovative education system to produce quality graduates. The government can support schools by creating policies on e-governance that assist school management in implementing the system smoothly. Furthermore, the government should enact laws to protect

the exclusivity and security of the system, thereby aiding school management in the proper application of the e-governance system and maximizing its benefits.

5. CONCLUSION

In conclusion, this analysis highlights several key findings and implications for digital transformation within enterprises. Human factors emerge as pivotal, with communication, trust, commitment to cooperation, and a spirit of challenge significantly influencing digital transformation capacity. To optimize these factors, fostering an open organizational culture is paramount.

Additionally, while technological factors positively impact digital transformation, they are often prioritized lower than human factors. Efforts to acquire new technology and strategically apply it to business are essential. The strategic role of IT, particularly in driving business innovation, underscores the importance of technological advancements.

Moreover, strengthening the alignment between IT and business strategy enhances digital transformation capability. Information sharing between the business unit and IT department is crucial for this alignment, ensuring that IT understands and supports the company's strategic goals.

Lastly, the positive impact of CEO digital leadership on all independent variables is significant. CEOs play a key role in aligning human and technological factors with business strategy, highlighting the importance of top-down leadership in driving successful digital transformation. Overall, these findings emphasize the need for a holistic approach, integrating human, technological, and strategic elements to maximize the benefits of digital transformation in organizations.

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Appendix 1: SPSS Resul

Table 1

Correlations

		Gender	Did the Digital transformation effect on the e-governance to achieve operational excellence in your school?
Gender	Pearson Correlation	1	-.072
	Sig. (2-tailed)		.468
	N	103	103
Did the Digital transformation effect on the e-governance to achieve operational excellence in your school?	Pearson Correlation	-.072	1
	Sig. (2-tailed)	.468	
	N	103	103

Table 2

Correlations

		Did the Digital transformation effect on the e-governance to achieve operational excellence in your school?	Did operational excellence of schools contribute to raise implementing of the digital transformation?
Did the Digital transformation effect on the e-governance to achieve operational excellence in your school?	Pearson Correlation	1	.366**
	Sig. (2-tailed)		.000
	N	103	103
Did operational excellence of schools contribute to raise implementing of the digital transformation?	Pearson Correlation	.366**	1
	Sig. (2-tailed)	.000	
	N	103	103

Table 3

Correlations			
		Did the Digital transformation effect on the e-governance to achieve operational excellence in your school?	Do you think Increasing the regulatory e-governance standards for school excellence will increase the effectiveness of the digital transformation?
Did the Digital transformation effect on the e-governance to achieve operational excellence in your school?	Pearson Correlation	1	.462**
	Sig. (2-tailed)		.000
	N	103	103
Do you think Increasing the regulatory e-governance standards for school excellence will increase the effectiveness of the digital transformation?	Pearson Correlation	.462**	1
	Sig. (2-tailed)	.000	
	N	103	103

Table 4

Correlations			
		Did the Digital transformation effect on the e-governance to achieve operational excellence in your school?	How knowledgeable are you with the concept of E-Governance?
Did the Digital transformation effect on the e-governance to achieve operational excellence in your school?	Pearson Correlation	1	.253*
	Sig. (2-tailed)		.010
	N	103	103
How knowledgeable are you with the concept of E-Governance?	Pearson Correlation	.253*	1
	Sig. (2-tailed)	.010	
	N	103	103

Table 5

Correlations			
		Did the Digital transformation effect on the e-governance to achieve operational excellence in your school?	How impactful are the e-governance on the development of procedures and processes in the educational institution?
Did the Digital transformation effect on the e-governance to achieve operational excellence in your school?	Pearson Correlation	1	-.224*
	Sig. (2-tailed)		.023
	N	103	103
How impactful are the e-governance on the development of procedures and processes in the educational institution?	Pearson Correlation	-.224*	1
	Sig. (2-tailed)	.023	
	N	103	103

Table 6

Correlations			
		Did the Digital transformation effect on the e-governance to achieve operational excellence in your school?	Are the e-governance which implemented by using digital transformation used to develop improvement plans and procedures?
Did the Digital transformation effect on the e-governance to achieve operational excellence in your school?	Pearson Correlation	1	-.366**
	Sig. (2-tailed)		.000
	N	103	103
Are the e-governance which implemented by using digital transformation used to develop improvement plans and procedures?	Pearson Correlation	-.366**	1
	Sig. (2-tailed)	.000	
	N	103	103

Table 7

Correlations			
		Did the Digital transformation effect on the e-governance to achieve operational excellence in your school?	What is the degree of your participation in developing and implementing improvement measures?
Did the Digital transformation effect on the e-governance to achieve operational excellence in your school?	Pearson Correlation	1	.445**
	Sig. (2-tailed)		.000
	N	103	103
What is the degree of your participation in developing and implementing improvement measures?	Pearson Correlation	.445**	1
	Sig. (2-tailed)	.000	
	N	103	103

Table 8

Correlations			
		Did the Digital transformation effect on the e-governance to achieve operational excellence in your school?	Do increase using of digital transformation tools will ensure the e-governance standards which specified by the Ministry of Education?
Did the Digital transformation effect on the e-governance to achieve operational excellence in your school?	Pearson Correlation	1	.334**
	Sig. (2-tailed)		.001
	N	103	103
Do increase using of digital transformation will ensure the e-governance standards which specified by the Ministry of Education?	Pearson Correlation	.334**	1
	Sig. (2-tailed)	.001	
	N	103	103

Table 9

Correlations			
		Did the Digital transformation effect on the e-governance to achieve operational excellence in your school?	If yes, determine how much knowledge you have of E-governance regulations and policies
Did the Digital transformation effect on the e-governance to achieve operational excellence in your school?	Pearson Correlation	1	.187
	Sig. (2-tailed)		.059
	N	103	103
If yes, determine how much knowledge you have of E-governance regulations and policies?	Pearson Correlation	.187	1
	Sig. (2-tailed)	.059	
	N	103	103

Table 10

Correlations			
		Did the Digital transformation effect on the e-governance to achieve operational excellence in your school?	In your opinion, does using digital transformation contribute to raising the quality of e-governance standards in schools?
Are the corrective action plans sent from the Inspection Office of the Ministry of Education reviewed?	Pearson Correlation	1	.441**
	Sig. (2-tailed)		.000
	N	103	103
In your opinion, does using digital transformation contribute to raising the quality of e-governance standards in schools?	Pearson Correlation	.441**	1
	Sig. (2-tailed)	.000	
	N	103	103

Table 11

Correlations			
		Did the Digital transformation effect on the e-governance to achieve operational excellence in your school?	Has using of digital transformation tools effect to raise the percentage of activating School excellence?
Did the Digital transformation effect on the e-governance to achieve operational excellence in your school?	Pearson Correlation	1	.260**
	Sig. (2-tailed)		.008
	N	103	103
Has using of digital transformation tools effect to raise the percentage of activating School excellence?	Pearson Correlation	.260**	1
	Sig. (2-tailed)	.008	
	N	103	103

Table 12

Correlations			
		Did the Digital transformation effect on the e-governance to achieve operational excellence in your school?	During the using of digital transformation services, are the standards for the facility and school operational excellence being monitored?
Did the Digital transformation effect on the e-governance to achieve operational excellence in your school?	Pearson Correlation	1	.368**
	Sig. (2-tailed)		.000
	N	103	103
During the using of digital transformation services, are the standards for the facility and school operational excellence being monitored?	Pearson Correlation	.368**	1
	Sig. (2-tailed)	.000	
	N	103	103

Table 13

		Did the Digital transformation effect on the e-governance to achieve operational excellence in your school?	During the using of digital transformation services, are the standards for the school administration and staff standards being monitored to achieve school operational excellence?
Correlations			
Did the Digital transformation effect on the e-governance to achieve operational excellence in your school?	Pearson Correlation	1	.463**
	Sig. (2-tailed)		.000
	N	103	103
During the using of digital transformation services, are the standards for the school administration and staff standards being monitored to achieve school operational excellence?	Pearson Correlation	.463**	1
	Sig. (2-tailed)	.000	
	N	103	103

Table 14

		Did the Digital transformation effect on the e-governance to achieve operational excellence in your school?	Age
Did the Digital transformation effect on the e-governance to achieve operational excellence in your school?	Pearson Correlation	1	-.050
	Sig. (2-tailed)		.613
	N	103	103
Age	Pearson Correlation	-.050	1
	Sig. (2-tailed)	.613	
	N	103	103

Correlations

Table 15

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.440[a]	.194	.134	.748

Table 16

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.752	7	1.822	3.260	.004[b]
	Residual	53.093	95	.559		
	Total	65.845	102			

Table 17

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.086	.737		1.474	.143
Do increase using of digital transformation tools will ensure the e-governance standards which specified by the Ministry of Education?	.248	.111	.234	2.210	.029
In your opinion, does using digital transformation contribute to raising the quality of e-governance standards in schools?	-.030	.357	-.010	-.083	.934
Has using of digital transformation tools effect to raise the percentage of activating School excellence?	.092	.085	.115	1.085	.281
Age	-.014	.083	-.016	-.172	.864
During the using of digital transformation services, are the standards for the school administration and staff standards being monitored to achieve school operational excellence?	-.209	.153	-.136	-1.366	.175
How knowledgeable are you with the concept of E-Governance?	.553	.326	.214	1.696	.093
Gender	-.063	.164	-.037	-.385	.701

(Model column: 1)

Appendix 2: Survey

Instrument: Survey

Survey

Correlation between Digital Transformation and E-Governance to Achieve Operational Excellence in Education

العلاقة بين التحول الرقمي والحوكمة الإلكترونية لتحقيق التميز المؤسسي في التعليم

(We are a student of master's from Hamdan Bin Mohammed Smart University, specialized in institutional excellence and innovation, change management. We will be collecting data which will be used in scientific research. Please be sure that all of the information provided will be kept confidential and used for the research proposes only)

(نحن مجموعة من طلبة الماجستير بجامعة حمدان بن محمد الذكية من تخصص التميز المؤسسي و الابتكار وإدارة التغيير، ونجمع هذه المعلومات لاستخدامها في بحث علمي، كن متأكد بانه سيتم الاحتفاظ بجميع المعلومات المقدمة بسرية تامة واستخدامها لأغراض البحث فقط)

Part one: information about the digital transformation and E-governance

الجزء الاول : معلومات عن التحول الرقمي والحوكمة الإلكترونية

Sr.	questions	Options	اختيارات	الأسئلة	#
1	Did the Digital transformation effect on the e-governance to achieve operational excellence in your school?	Strongly Agree	موافق بشدة	هل أثر التحول الرقمي على الحوكمة الإلكترونية لتحقيق التميز التشغيلي في مدرستك؟	1
		Agree	موافق		
		Natural	محايد		
		Disagree	غير موافق		
		Strongly Disagree	غير موافق بشدة		
2	How knowledgeable are you with the concept of educational inspection?	Limited knowledge	معرفة محدودة	ما مدى إلمامك بمفهوم التحول الرقمي؟	2
		Medium knowledge	معرفة متوسطة		
		Extensive knowledge	معرفة واسعة		
		Expert	خبير في المجال		
3	Did operational excellence of schools contribute to raise implementing of the digital transformation?	Strongly Agree	موافق بشدة	هل ساهم تميز أداء المدارس في رفع مستوى تنفيذ التحول الرقمي؟	3
		Agree	موافق		
		Natural	محايد		
		Disagree	غير موافق		
		Strongly Disagree	غير موافق بشدة		
4	Do you think Increasing the regulatory e-governance standards for school excellence will increase the effectiveness of the digital transformation?	Low affect	تأثير منخفض	هل تعتقد أن زيادة معايير الحوكمة الإلكترونية التنظيمية للتميز المدرسي ستزيد من فعالية التحول الرقمي؟	4
		Medium affect	تأثير متوسط		
		High affect	تأثير عالي		
		No affect	لا يوجد تأثير		
5	Are the tools of digital	Yes	نعم	هل يتم الاستفادة من أدوات	5

	transformation used to develop improvement plans and procedures?	No	لا	التحول الرقمي لتطوير الخطط و الإجراءات التحسينية؟	
		No info.	لا أعلم		
6	What is the degree of your participation in developing and implementing improvement measures?	High	عالية	ماهي درجة مشاركتك في تطوير و تطبيق الاجراءات التحسينية؟	6
		Medium	متوسطة		
		Low	منخفضة		
7	Do increase using of digital transformation tools will ensure the e-governance standards which specified by the Ministry of Education?	Strongly Agree	موافق بشدة	هل الزيادة في استخدام أدوات التحول الرقمي ستضمن معايير الحوكمة الإلكترونية التي حددتها وزارة التربية والتعليم؟	7
		Agree	موافق		
		Natural	محايد		
		Disagree	غير موافق		
		Strongly Disagree	غير موافق بشدة		
8	If yes, determine how much knowledge you have of digital transformation tools and e-governance criteria?	Limited knowledge	معرفة محدودة	إذا كانت إجابتك بنعم حدد نسبة المعرفة لديك بأدوات التحول الرقمي و معايير الحوكمة الإلكترونية؟	8
		Medium knowledge	معرفة متوسطة		
		Extensive knowledge	معرفة واسعة		
		Expert	خبير في المجال		
9	In your opinion, does using digital transformation contribute to raising the quality of e-governance standards in schools?	Strongly Agree	موافق بشدة	برأيك هل استخدام التحول الرقمي يساهم في رفع جودة معايير الحوكمة الإلكترونية في المدارس؟	9
		Agree	موافق		
		Natural	محايد		
		Disagree	غير موافق		
		Strongly Disagree	غير موافق بشدة		
10	Has using of digital transformation tools effect to raise the percentage of activating School excellence?	Strongly Agree	موافق بشدة	هل أثر استخدام أدوات التحول الرقمي في رفع نسبة تفعيل التميز المدرسي؟	10
		Agree	موافق		
		Natural	محايد		
		Disagree	غير موافق		
		Strongly Disagree	غير موافق بشدة		
11	In your opinion, linkage of digital transformation need a full knowledge of technology?	Strongly Agree	موافق بشدة	برأيك هل تعتقد أن ربط التحول الرقمي يحتاج إلى إلمام تام في التكنولوجيا ؟	11
		Agree	موافق		
		Natural	محايد		
		Disagree	غير موافق		
		Strongly Disagree	غير موافق بشدة		
12	During the using of digital transformation services, are the standards for the	Strongly Agree	موافق بشدة	أثناء استخدام خدمات التحول الرقمي ، هل يتم مراقبة معايير التميز	12
		Agree	موافق		

		Natural	محايد	التشغيلي للمنشأة	
	facility and school operational excellence being monitored?	Disagree	غير موافق	والمدرسة؟	
		Strongly Disagree	غير موافق بشدة		
13	During the using of digital transformation services, are the standards for the school administration and staff standards being monitored to achieve school operational excellence?	Strongly Agree	موافق بشدة	أثناء استخدام خدمات التحول الرقمي ، هل تتم مراقبة معايير إدارة المدرسة والموظفين لتحقيق التميز التشغيلي للمدرسة؟	13
		Agree	موافق		
		Natural	محايد		
		Disagree	غير موافق		
		Strongly Disagree	غير موافق بشدة		

Part two: demographic information
الجزء الثاني: المعلومات الديموغرافية

Sr.	questions	Options	الأسئلة	#
1	Age (years)	From 20 to 29	العمر (سنوات)	1
		From 30 to 39		
		From 40 to 49		
		Older than 50		
2	Gender	Male	الجنس	2
		Female		
3	Emirate	Abu Dhabi	الإمارة	3
		Dubai		
		Sharjah		
		Ajman		
		Umm All Quwain		
		Ras Al-Khaimah		
		Fujairah		
4	Educational level	Bachelor's degree	المستوى التعليمي	4
		Master's degree		
		PHDs		
5	Occupation	Director	الوظيفة	5
		Acting director		
		Assistant director		
		Senior manager		
		Domain manager		
		Sector manager		
6	School grade level	Kindergarten	المرحلة الدراسية للمؤسسة التعليمية	6
		Grade		
		Together		
	Grade need to be mentioned: …………………………………… يرجى تحديد مرحلة الحلقة الدراسية………………			
7	School capacity	200 or less	حجم المدرسة (أعداد الطلبة)	7
		From 201 to 600		
		From 601 to 1200		
		More than 1200		

Appendix 3: Interviews
Interview Questions

Disclaimer: all interviewees were given the same set of questions.

1. Are you familiar with the concept of e-governance system?
2. Have you heard of or encountered any application of the system in UAE?
3. What do you think the reason for the application? Can you mention some benefits of the system in public administration?
4. How may school benefit from the system?
5. Does the government need to be involved in the e-governance system application at schools? What role should they have?
6. Is there anything else you might want to add?