

2023

The Role of Digital Transformation in Developing the Performance of Umm Al-Qura University Employees

A. H. Alshuaibi

Department of Education and Psychology, Al-Qunfudhah University College, Umm Al-Qura University, Kingdom of Saudi Arabia, ahshuaibi@uqu.edu.sa

Follow this and additional works at: <https://digitalcommons.aaru.edu.jo/isl>

Recommended Citation

H. Alshuaibi, A. (2023) "The Role of Digital Transformation in Developing the Performance of Umm Al-Qura University Employees," *Information Sciences Letters*: Vol. 12 : Iss. 5 , PP -. Available at: <https://digitalcommons.aaru.edu.jo/isl/vol12/iss5/55>

This Article is brought to you for free and open access by Arab Journals Platform. It has been accepted for inclusion in Information Sciences Letters by an authorized editor. The journal is hosted on Digital Commons, an Elsevier platform. For more information, please contact rakan@aarj.edu.jo, marah@aarj.edu.jo, u.murad@aarj.edu.jo.

The Role of Digital Transformation in Developing the Performance of Umm Al-Qura University Employees

A. H. Alshuaibi

Department of Education and Psychology, Al-Qunfudhah University College, Umm Al-Qura University, Kingdom of Saudi Arabia

Received: 21 Feb. 2023, Revised: 22 Mar. 2023, Accepted: 24 Mar. 2023.

Published online: 1 May 2023.

Abstract: This study aimed at identifying the role of digital transformation in improving the efficiency of the performance of Umm Al-Qura University employees. The analytical descriptive approach was used to achieve the objective of the study, for which a questionnaire was developed as an instrument for data collection. The study was applied to 331 Umm Al-Qura University employees, who were selected by a simple random method. The results of the study showed that the responses of the participants showed high agreement with the degree of implementing digital transformation at Umm Al-Qura University, with a mean score of (3.5078). The findings also showed that the level of efficiency of the performance of Umm Al-Qura University employees came with a high degree, with a mean score of (3.8316). There was a statistically significant direct relationship between digital transformation and the efficiency of the performance of Umm Al-Qura University employees.

Keywords: digital transformation, performance, improving.

1 Introduction

The past two decades have witnessed rapid developments in all areas of political, social, cultural, economic, and informational life. These developments have created many new concepts, including the knowledge revolution, the knowledge society, the technological revolution, digital transformation, and other concepts with dimensions and connotations that express technological and scientific progress [1]. Communication and information technology became important factors in the development of societies in the present era, as they are vital in transferring information and knowledge. They directly contributed to building institutions on new technologies and methods for digital transformation [2].

Digital transformation is one of the most important results of contemporary technological and scientific development. It became important that institutions adopt modern technologies to become more flexible and aware of work and the ability to innovate [3]. Digital transformation can support university education to shift from a state of questioning the future to predicting and shaping it. The process of digital transformation makes proactive and informed decisions based on a set of information, as it helps university education institutions to identify what is happening (descriptive analytics) and what may happen in the future (predictive analytics) and study possible causes, trends, and predictions. Using this information to make decisions, improve the performance of universities in the process of registering and accepting students, managing scholarships, and enhancing academic advice and others, which lead to the increasing need for digital transformation in universities due to its importance [4].

Digital transformation is important because it enables the development of the performance of employees in the organization, through the use of a set of applications and programs that help to complete work without being restricted to a specific place or time. All institutions perform according to the nature of their work to shift from traditional work methods to digital work methods, including Universities. Digital transformation helps improve the functional capabilities of workers to make their performance compatible with the goals of the institution [5].

The problem of the study

Digital transformation has become one of the most important phenomena for managing societies, as it provided facilities in several aspects, such as data collection, classification, storage, retrieval, and presentation to a group of individuals at the lowest cost and the fastest time. Digital transformation has also become a priority for universities and a necessary need to be able to keep pace with the changing requirements of the era and enjoy competitiveness and a good reputation.

*Corresponding author e-mail: ahshuaibi@uqu.edu.sa

Digital transformation is one of the methods that contribute to the development of the performance of employees. Since Umm Al-Qura University is one of the universities that include a large number of students and employees in various fields and departments, and with the spread of communication and information technology, relying on traditional methods of working in universities affects the performance of the university negatively because it distances the university from its students and employees and isolates them.

Digital transformation enables institutions in general, and universities in particular, to achieve their goals by increasing the efficiency of the performance of employees at the university. Therefore, it is necessary to study the role of digital transformation in developing the efficiency of the performance of employees at Umm Al-Qura University.

Objectives of the study

This study aimed at achieving the following objectives:

1. To identify the degree of applying digital transformation at Umm Al-Qura University.
- 2- To identify the level of performance efficiency of Umm Al-Qura University employees.
- 3- To explore the possibility of predicting employees' performance through digital transformation at Umm Al-Qura University.

Questions of the study

The study attempts to answer the following questions:

- 1- What is the level of implementation of digital transformation at Umm Al-Qura University?
- 2- What is the level of performance efficiency of employees at Umm Al-Qura University?
- 3- Can employees' performance be predicted through the level of digital transformation at Umm Al-Qura University?

Significance of the study

A digital transformation is an important tool for performing business within the university, by relying on modern technology means that contributes to improving the level of work and services, advancing the university, and improving the quality of its performance. This study, according to the researcher's knowledge, is the first to link digital transformation and employee performance efficiency at Umm AlQura University. This is important in bridging a research gap in this field and answering important questions. Digital transformation is one of the recent trends that have emerged to help solve educational problems and raise the efficiency of university employees in their different roles. The study contributes to improving digital transformation to increase the efficiency of employee performance and develops a set of recommendations through which the application of digital transformation can be improved at Umm Al-Qura University. The results of the study will enrich the research library with a specialized study on digital transformation and its role in the efficient performance of employees in universities, especially at Umm Al-Qura University.

Limitations of the study

Thematic limits: the role of digital transformation on the performance of Umm Al-Qura University employees.

Human limits: The study was limited to the administrative staff at Umm Al-Qura University.

Spatial limits: This study was applied at the Umm Al-Qura University in Makkah Al-Mukarramah, Saudi Arabia.

Time limits: This study was prepared during the year 2022.

2 Literature Review

Digital Transformation

Al-Dahshan and Al-Sayed [6] defined digital transformation as “an investment in thinking and changing behaviour to bring about a fundamental shift in the way of working by taking advantage of the tremendous technological progress that has taken place in serving the beneficiaries better and faster. Digital transformation holds a great promise to create more societies with efficiency, competitiveness, and sustainability, by bringing about a radical change in the services of many parties, including customers, employees, and beneficiaries, while enhancing their experience and productivity through a series of proportional operations accompanied by reformulating the required activation and implementation procedures.

The process of digital transformation requires defining the vision accurately, which means clarifying what the organization seeks to reach in the future. It also needs a continuous follow-up and review of digital transformation

plans. For its success, administrative and leadership support for transformation efforts is needed, which can be done by focusing all officials and leaders on administrative practices related to technology, providing material, human and financial resources, and developing the necessary legislation. The most important requirement is developing strategies for digital transformation in the light of analyzing needs and the market, identifying strengths and weaknesses, and overcoming the threats of the external environment [7].

Digital transformation has attracted the attention of many researchers, as a result of the global health conditions created by the Corona pandemic (COVID-19). They have made several points that explain the importance of digital transformation, such as improving transactions and services, improving decision-making, helping in eradicating corruption, creating easy access to information, keeping pace with the technological revolution, moving from traditional services to digital services, and eliminating bureaucracy [8].

Digital transformation, as one of the most important human phenomena in the current era, is characterized by many features that distinguish it from other human phenomena. Digital transformation is accumulative, as discoveries and technological innovations increase with time, and this leads to the accumulation of technological construction as a result of the multiplication of discoveries within a short period. Digital transformation is also humanitarian, as it is one of the activities that are related to human daily needs. Man has by nature motives for innovation and discovery of everything related to life, and among these innovations and discoveries in technology. Digital transformation is also a social activity, where it helps to meet the needs of all societies and increase the well-being of society to live a decent life and increase social interaction [9].

Previous studies

Al Namlan et al [10] identified the reality of digital transformation in education offices in Riyadh from the educational supervisors' perspectives. The study used a descriptive-analytical approach and a questionnaire as an instrument. The study sample consisted of (218) educational supervisors who were randomly selected from education offices in the city of Riyadh. Findings revealed that the field of the level of digital transformation culture came in first place, and the level of manpower availability ranked in second place, while the level of management and financing of digital transformation came in last place. The results showed presence of differences among the study individuals regarding the level of digital transformation culture, the availability of human resources, and the use of the technical study of digital transformation in the education offices in Riyadh.

Al-sawat and Al-harbi [11] explored the impact of digital transformation on the academic performance of faculty members at King Abdulaziz University. The analytical descriptive approach was used, and a questionnaire was designed as a tool for data collection, which was applied to (599) faculty members at King Abdulaziz University. Abdulaziz were chosen randomly. The results showed that there was a statistically significant effect of digital transformation on the academic performance of faculty members at King Abdulaziz University and that there is a statistically significant effect of digital transformation on the requirements of digital transformation to achieve the efficiency of the academic performance of faculty members. The results also revealed a statistically significant effect of the obstacles that limit the effectiveness of the digital transformation on the academic performance of faculty members.

Brdese [12] examined the impact of digital transformation on organizational efficiency and university spending, with a particular focus on a specific e-service at King Abdulaziz University in Saudi Arabia. A descriptive approach was used. According to data collected from admissions and admissions offices of selected universities, humanities departments recorded the highest percentage of dropouts (16,376), followed by natural sciences departments (10,876). There is a weak relationship between college campus attendance and a student's decision to withdraw from a course or subject, with the result that student withdrawal from academic courses affects college spending and organizational efficiency. was shown.

Al Harirat and Abu Bakr [13] explored the impact of the application of electronic management of human resources in its dimensions (electronic recruitment, electronic performance evaluation, and electronic compensation) on the performance of workers in its dimensions (accuracy in work, speed of achievement, creativity, and teamwork) in the airline company Royal Jordanian Air Force. The descriptive analytical method was used, and a questionnaire was designed as a data collection tool. The study sample consisted of 387 employees in public administration and all the company's offices in the capital, Amman. The study revealed the existence of a statistically significant effect of the electronic management of human resources (e-recruitment, electronic performance evaluation, and electronic compensation) on the performance of employees, and there is a statistically significant effect of the electronic management of human resources (e-recruitment, electronic performance evaluation, and electronic compensation) on accuracy in work, creativity, and teamwork.

Asbari et al [14] revealed the effect of transformational leadership on employee performance in the chemical industry in Indonesia, and the mediating variable is readiness for change. The analytical descriptive approach was used, and a

questionnaire was designed as a tool for data collection, which was applied to a sample of (220) employees who were randomly selected. The findings revealed that transformational leadership is effective for change.

Mugizi & Amwine [15] examined the impact of the use of information and communication technology (ICT) on the job performance of teachers in a private international school in Kampala, Uganda. The study showed that the performance of the teachers was good and that the use of information and communication technology enabled by the school administration was high. The results showed that the possibility of accessing electronic information resources was high, and that cooperative teaching and learning were also high, and the results showed that there is a positive effect of access to electronic information resources on the job performance of teachers.

Hammad [16] investigated the role of digital transformation in developing the performance of workers. A questionnaire was designed as a data collection tool, which was applied to a sample of (318) workers in the Egyptian Company for Pharmaceutical Trade. The areas of digital transformation consisted of (strategic planning for digital transformation, preparation for Leaders in the field of digital transformation, and the institutional environment for digital transformation). The results showed that the axis of strategic planning received poor ratings and that the axis of preparing leaders in the field of digital transformation came with a poor rating, and the axis of institutional structure for digital transformation received poor ratings. The results also showed that there was a statistically significant relationship between digital transformation and employee performance development.

Manita et al [17] identify the impact of digital transformation on audit work and how it can improve the role of audit as a governance mechanism. The quantitative approach was used by conducting interviews with five big audit companies in France. The results showed that digital transformation affects five main levels of audit firms, especially the role of audit as a mechanism of governance. The results also showed that digital transformation improves the suitability of audit, as it allows audit firms to expand their offerings by proposing new services, and also leads to improving audit quality mainly by analyzing all customer data.

3 Methods

Sampling

The population of this study included all administrative workers at Umm Al-Qura University, and the study sample consisted of (331) administrative employees at Umm Al-Qura University.

Instrument of the study

The questionnaire was used as an instrument for data collection, which was built by referring to the literature and previous studies related to the subject of the study. The questionnaire consisted of two parts. The first consisted of 32 items on digital transformation; the field of structural changes, the field of value generation, the field of digital leadership, and the field of digital operation. The second part dealt with the efficiency of employee performance, which consisted of (17) items, distributed into three areas: the field of productivity, the field of work quality, and the field of knowledge of work requirements.

Validity of the instrument

To verify the validity of the questionnaire, it was presented to a committee of (10) judges with experience and specialization from faculty members in Saudi universities. The proposals and directions of the members of the judges were taken into account, and then the deletion and amendment of the linguistic wording of some paragraphs.

The validity of the internal consistency of the questionnaire was done by calculating the Pearson correlation coefficient between each item of the questionnaire with the total degree of the field to which it belongs, using the statistical program (SPSS), as shown in Table 1.

Table 1: The correlation coefficient between each item of the areas of digital transformation with the total score of the field

NO.	correlation coefficient	NO.	correlation coefficient	NO.	correlation coefficient	NO.	correlation coefficient
1	.518**	10	.851**	18	.773**	25	.333**
2	.751**	11	.726**	19	.736**	26	.365**
3	.414**	12	.832**	20	.493**	27	.423*
4	.644**	13	.665**	21	.745**	28	.398**
5	.735**	14	.858**	22	.850**	29	.376**
6	.696**	15	.829**	23	.857**	30	.399**
7	.837**	16	.495**	24	.723**	31	.416**
8	.708**	17	.608**			32	.577**

9	.613**						
---	--------	--	--	--	--	--	--

The table shows the correlation coefficients between each of the items of the domains with the total degree of the field. The correlation coefficients were significant at the level of significance (0.01), and thus the domains are considered valid to what they were set for.

Table 2: The Correlation coefficient between each item of the employee performance efficiency with the total score of the field

NO.	correlation coefficient	NO.	correlation coefficient	NO.	correlation coefficient
1	.783**	7	.542**	13	.713**
2	.784**	8	.789**	14	.655**
3	.780**	9	.795**	15	.652**
4	.665**	10	.581**	16	.775**
5	.765**	11	.877**	17	.787**
6	.804**	12	.772**		

Table 2 reveals that the correlation coefficients were significant at the level of significance (0.01), and thus the domains are considered true to what they were set for.

Reliability of the instrument

The stability of the study instrument means it gives the same results if it is reapplied consecutive times, that is, the degree to which the scale gives close readings when used each time. The stability of the questionnaire has been verified by using Cronbach's alpha coefficient, and the following table shows the results.

Table 3: Cronbach's alpha coefficient to measure the stability of the questionnaire

Dimension	Number of items	Cronbach's alpha coefficient
First: digital transformation	32	.951
The first field: structural changes	9	.838
The second field: value generation	8	.820
The third field: digital leadership	7	.862
The fourth field: digital operation	8	.905
Second: the efficiency of staff performance	17	.926
The first field: Productivity	6	.844
The second field: the quality of work	6	.806
The third field: Knowledge of work requirements	5	.755

The table shows that the values of Cronbach's alpha coefficient were high for each dimension, as it ranged between (.905-.755). The stability coefficient for the digital transformation dimension was (.951), and in the employee performance efficiency dimension (.926), which indicates that the study instrument has high stability.

4 Results and Discussion

First: results of the first question

To answer the first question, the mean scores and standard deviations were calculated for the responses of the study sample on the dimension of digital transformation at Umm Al-Qura University, and the following tables illustrate the results.

Analysis of items of the first field, "structural changes"

Table 3: The mean scores and standard deviations of the study sample responses to the field of structural changes

Item	NO.	Mean score	St. Dev	Rank	Level
The university initially conducted a digital transformation experiment on one of its units	331	3.5000	.76249	High	5
The university enters into partnerships with other universities to develop its business	331	3.4545	.92647	High	6
The university has allocated an independent administrative unit to monitor its electronic services	331	3.9046	.70014	High	1
The university allocates an administrative unit concerned with e-learning	331	3.7500	.83874	High	3
The university has placed units specialized in electronic services on the organizational map	331	3.6818	.73998	High	4

The university is conducting structural changes (merger/separation) in its departments as a result of digital transformation	331	3.1136	.99337	Medium	9
The university attracts professional digital experts	331	3.3864	.86846	Medium	7
The university promotes innovation-based activities in all its units	331	3.3182	1.05153	Medium	8
The university is moving towards a comprehensive transformation to be an intelligent electronic organization	331	3.8636	.73424	High	2
Total	331	3.5480	.56575	High	

The table shows that the item stating “The university has allocated an independent administrative unit to follow up on its electronic services” ranked first with a mean score of (3.9046 out of 5), and this indicates a high degree of approval for this item. The item that states “The university is conducting structural changes (merger/separation) of its departments as a result of digital transformation” ranked last with a mean score of (3.1136 out of 5), and this indicates a moderate degree of approval for this item. That was a high degree of agreement among the study sample on the field of "structural changes" in general, as the total mean score was (3.5480 out of 5).

Analysis of items of the second field, "value generation"

Table 4: The mean scores and standard deviations of the study sample responses to the field of value generation

Item	NO.	Mean score	St. Dev	Rank	Level
Employees' skill in integrating digital technologies with administrative work is improving	331	3.5455	1.08809	3	High
The university seeks to improve the digital infrastructure used to communicate with and for staff	331	4.4773	.66433	4	High
Each university employee has a special electronic account	331	3.3864	1.08297	6	Medium
The university is based on increasing the rate of digital culture for employees	331	3.6591	.71343	2	High
University employees accept digital changes easily	331	3.4545	.84783	5	High
The university renews its capabilities to comply with digital transformations	331	3.7273	1.08614	1	High
The university provides the possibility of holding courses through the Internet	331	2.1136	1.35055	8	Low
The university's digital transformation contributed to reducing the weekly working days for employees	331	3.2500	.78132	7	Medium
Total	331	3.4517	.65048		High

The table shows that the item stating “The university renews its capabilities to comply with digital transformations” ranked first with a mean score of (3.7273 out of 5), and this indicates a high degree of approval for this item. The item stating “The university provides the possibility of holding courses through the Internet” ranked last with a mean score of (2.1136 out of 5), and this indicates a low degree of approval for this item. There was a high degree of agreement among the study sample on the field of "value generation" in general, as the mean score was (3.5480 out of 5).

Analysis of the items of the third field, "Digital Leadership"

Table 5: The mean scores and standard deviations of the study sample responses to the field of digital leadership

Item	NO.	Mean score	St. Dev	Rank	Level
The university employs its technologies to form work teams that are managed digitally (through the Internet)	331	3.5682	.84627	2	High
All university work is subject to electronic disclosure	331	3.3409	.71343	5	Medium
The staff handles the approved technology professionally	331	3.8182	.72409	1	High
Electronic communication contributes to promoting the exchange of knowledge in an effective manner	331	3.4318	.87332	4	High
The university is based on integrating employees into a digital environment	331	3.0227	1.30275	7	Medium
The university requires employees to submit electronic periodic reports on their achievements through the system	331	3.3182	1.13655	6	Medium
The university efficiently follows up on the required achievements electronically	331	3.5455	.97538	3	Medium
Total	331	3.4351	.71059		High

The table shows that the item stating “Employees deal with approved technology professionally” ranked first with a mean score of (3.8182 out of 5), and this indicates a high degree of approval for this item. The item that states "The university is based on integrating employees into a digital environment" ranked last with a mean score of (3.0227 out of 5), and this indicates a moderate degree of approval for this item. There was a high degree of agreement among the study sample on the field of "digital leadership" in general, and the mean score was (3.4351 out of 5).

Analysis of the items of the fourth field "Digital Operation"

Table 6: The mean score and standard deviations of the study sample responses to the field of digital operation

Item	NO.	Mean score	St. Dev	Rank	Level
The university connects its activities through cloud applications instead of paperwork	331	3.1818	1.41869	8	Medium
The university links its activities to mobile applications	331	3.2045	1.00185	7	Medium
The university is seeking to shift towards open-source software	331	3.7273	1.01989	3	High
The university obliges employees to communicate electronically instead of on paper	331	3.2955	1.02480	6	Medium
The university adequately trains its employees to support digital transformation	331	3.6591	.98697	4	High
University clients can obtain all services through the Internet	331	3.5227	.95208	5	High
The university develops its administrative processes such as "finance, registration, purchases..." digitally	331	3.9318	.84627	2	High
The university develops its academic process such as "lectures, practical training..." digitally		4.1364	.73424	1	High
Total	331	3.5824	.78593		High

The table shows that the item that states “the university develops its academic process such as “lectures, practical training...” digitally” ranked first with a mean score of (4.1364 out of 5), and this indicates a high degree of approval for this item. The item that states "The university links its activities with mobile applications" ranked last with a mean score of (3.1818 out of 5), and this indicates a moderate degree of approval for this item. There was a high degree of agreement among the study sample on the field of "digital employment" in general, and the mean score was (3.5824 out of 5).

To answer the first question of the study, the mean scores and standard deviations were calculated for the responses of the study sample on all the fields of digital transformation at Umm Al-Qura University, and the following table shows the result.

Table 7: The mean scores and standard deviations of the study sample's responses to the fields of digital transformation

Field	NO.	Mean score	St. Dev	Rank	Level
structural changes	331	3.5480	.56575	2	High
value generation	331	3.4517	.65048	3	High
digital leadership	331	3.4351	.71059	4	High
digital operation	331	3.5824	.78593	1	High
Digital transformation	331	3.5078	.59850		High

It can be noticed from the table that the field of digital operation came in first place with a mean score of (3.5824 out of 5), followed by the field of structural changes, with a mean score of (3.5480 out of 5), then the field of value creation in the third place with a mean score of (3.4517 out of 5), and finally the field of digital leadership ranked fourth with a mean score of (3.4351 out of 5). The digital transformation dimension as a whole came with a mean score of (3.5078 out of 5), which is a high degree of agreement.

This result can be explained by the fact that the university has a precisely defined vision of what it seeks to achieve in the future. The University seeks to provide a work environment free of complexity, which contributes to improving employee productivity and creativity with minimal effort and cost. The university also wants to increase interaction between employees through the use of digital technologies that help facilitate the process of communication, which leads to the completion of business easily and smoothly [18].

Second: Results of the second question

To answer this question, the mean scores and standard deviations of the responses of the study sample were calculated on the fields of performance efficiency of Umm Al-Qura University employees, and the following tables show the results.

Table 8: The mean scores and standard deviations of the study sample responses to the field of productivity

Item	NO.	Mean score	St. Dev	Rank	Level
Employees' acceptance of the nature of their work increases their productivity	331	3.8636	.73424	3	High
Good training contributes to an increase in the amount of work performed	331	3.7273	.75832	4	High
Employee productivity commensurate with their potential	331	3.6364	.71823	5	High
The development of work methods resulted in the reduction and execution of works	331	3.5682	1.06526	6	High
The manpower used is commensurate with the size of the required work	331	4.0682	.72810	1	High
Assigning employees to work commensurate with their qualifications to increase productivity	331	4.0000	.86266	2	High
Total	331	3.8106	.61484		High

The table shows that the item stating "the manpower used is commensurate with the size of the required work" ranked first with a mean score of (4.0682 out of 5), and this indicates a high degree of approval for this item. The item that states "The development of work methods has led to the reduction and implementation of works" ranked last, with a mean score of (3.5682 out of 5), and this indicates a high degree of approval for this item. There was a high degree of agreement among the study sample on the field of "productivity" in general, and the mean score was (3.8106 out of 5).

Analysis of the items of the first field, "quality of work"

Table 9: The mean scores and standard deviations of the study sample responses on the field of work quality

Item	NO.	Mean score	St. Dev	Rank	Level
Employees have the desire to master the work entrusted to them	331	3.4318	.94985	6	High
Employees perform the work assigned to them according to specific standards	331	4.1136	.81315	1	High
The introduction of employee suggestions contributed to improving the quality of performance	331	4.0909	.74141	2	High
Training programs contribute to enabling employees to complete their work	331	3.5227	.97620	5	High
Employees are keen to complete their work without errors	331	3.8864	.81315	4	High
The university relies on rules that ensure the empowerment of employees	331	3.8864	.84126	3	High
Total	331	3.8220	.61253		High

The table shows that the item that states "employees perform the work entrusted to them according to specific criteria" ranked first with a mean score of (4.1136 out of 5), and this indicates a high degree of approval for this item. The item that states "employees have the desire to perfect the work entrusted to them" ranked last with a mean score of (3.4318 out of 5), and this indicates a high degree of approval for this item. There was a high degree of agreement among the study sample on the field of "quality of work" in general, and the mean score was (3.8106 out of 5).

Analyzing the items of the field, "knowledge of work requirements"

Table 10: The mean scores and standard deviations of the study sample responses on the field of knowledge of work requirements

Item	NO.	Mean score	St. Dev	Rank	Level
University employees have sufficient knowledge about the nature of the work entrusted to them	331	3.9318	.78940	2	High
Employees are aware of all laws related to work	331	4.1591	.77589	1	High
Employees can choose procedures that are appropriate to the nature of their duties	331	3.6591	1.07710	5	High
Employees' knowledge of work requirements contributes to reducing work pressure	331	3.7500	.89248	4	High
The university realizes that employing expertise contributes to the performance of jobs in an effective manner	331	3.8409	.91355	3	High
Total	331	3.8682	.63677		High

The table shows that the item stating "employees are aware of all laws related to work" ranked first with a mean score

of (4.1591 out of 5), and this indicates a high degree of approval for this item. The item that states "employees can choose the procedures that are commensurate with the nature of their tasks" ranked last with a mean score of (3.6591 out of 5), and this indicates a high degree of approval for this item. There was a high degree of agreement among the study sample on the field of "knowledge of work requirements" in general, and the mean score was (3.8682 out of 5).

Table 10: The mean scores and standard deviations of the study sample’s responses to the fields of performance efficiency of Umm Al-Qura University employees

Field	NO.	Mean score	St. Dev	Rank	Level
Productivity	331	3.8106	.61484	3	High
work quality	331	3.8220	.61253	2	High
knowledge of work requirements	331	3.8682	.63677	1	High
performance efficiency	331	3.8316	.58019		High

It is clear from the table that the field of knowledge of work requirements came in first place with a mean score of (3.8682 out of 5), followed by the field of work quality in second place with a mean score of (3.8220 out of 5), and finally, the field of productivity in the third place with a mean score of (3.8106 out of 5). The dimension of employee performance efficiency as a whole had a mean score of (3.8316 out of 5), which is a high degree of agreement.

This result can be explained by the fact that university employees possess professional and technical knowledge and skills about the jobs they occupy. They are aware of the work that they will perform in proportion to their skills, desires, and abilities, and that they have perseverance and seriousness in carrying out the tasks entrusted to them and shouldering responsibility [19].

Third: the results of the third question

To answer this question, simple and multiple linear regression models were used, and the following tables show the results.

Table 11: Results of simple regression analysis

Variables	T value	Beta value	B value	Sig.
Independent	4.134		.618	.000
Digital transformation	5.100	.618	.600	.000
Correlation coefficient			.618 ^a	
The determination coefficient (R2)			.382	
Modified coefficient of determination			.368	
F value			26.014	
Sig.			.000 ^b	

The table showed that the coefficient of determination was (R2 = .382), and the modified coefficient of determination was (.368). This indicates that (36.8%) of the change in employee performance (the dependent variable) was explained through the linear relationship, and the remaining percentages may be due to factors other. There was a direct correlation between the independent variable (digital transformation) and the dependent variable (efficiency of employee performance), as the value of the Pearson correlation coefficient was (.618.)

The value of (F) was (26.014) at a significant level of (0.000), and this indicates that the regression was significant and there is an impact of digital transformation on the efficiency of the performance of Umm Al-Qura University employees. The value of (t) was (4.134) in the fixed amount and is statistically significant at the level of significance (0.05). The value of (t) was (5.100) in the independent variable (digital transformation) and is statistically significant at the level of significance (0.05). This indicates the possibility of predicting a degree of efficiency in the performance of Umm Al-Qura University employees through the degree of digital transformation.

Table 12: The results of the multiple regression analysis to predict the degree of productivity through the areas of digital transformation

Variables	T value	Beta value	B value	Sig.
Independent	4.449		2.046	.000
structural changes	1.015	.167	.182	.317
Value generation	2.475	.653	.618	.018
Digital leadership	.753	.154	.142	.456
Digital operation	4.242	.985	.771	.000
Correlation coefficient			.708 ^a	
The determination coefficient (R2)			.502	

Modified coefficient of determination	.451
F value	9.818
Sig.	.000 ^b

The table shows that the coefficient of determination was ($R^2 = .502$), and the modified coefficient of determination was (.451). This indicates that (45.1%) of the change in productivity (the dependent variable) was explained through the linear relationship, and the remaining percentages may be due to other factors. There was a direct correlation between the independent variables (structural changes, value generation, digital leadership, digital operation) and the dependent variable (productivity), where the value of the Pearson correlation coefficient was (.708).

The value of (F) was (9.818), with a significant level of (0.000), and this indicates that the regression is significant. There is an impact of the independent variables (structural changes, value generation, digital leadership, digital operation) on the productivity of Umm Al-Qura University employees.

Recommendations

The study recommends qualifying employees at Umm Al-Qura University through training programs that helped in digital transformation. It is also important to seek help from specialists and experts in the field of digital transformation to facilitate and complete the digital transformation process at Umm Al-Qura University. The University could enhance information security policies and legislation that support digital transformation, and the presence of continuous follow-up and oversight by the competent authorities. The University also could motivate and encourage employees to digital transformation by providing incentives and rewards and implementing activities. The study also recommends holding workshops, seminars, and periodic meetings for the participation of employees in the digital transformation process, while constantly encouraging digital innovation owners and providing them with full support.

Conflicts of Interest Statement

The authors certify that they have NO affiliations with or involvement in any organization or entity with any financial interest (such as honoraria; educational grants; participation in speakers' bureaus; membership, employment, consultancies, stock ownership, or other equity interest; and expert testimony or patent-licensing arrangements), or non-financial interest (such as personal or professional relationships, affiliations, knowledge or beliefs) in the subject matter or materials discussed in this manuscript.

References

- [1] Al-Kamhaway, N. (2020). Requirements for implementing digital transformation in achieving the goals of the Directorate of Youth and Sports in Alexandria Governorate. *Assiut Journal of Physical Education Sciences and Arts - Assiut University*, 55 (3), pp. 944-973.
- [2] Abdel Gawad, H. (2018). Obstacles to the implementation of digital transformation in the Egyptian Football Association in light of the limitations of the International Federation. *Assiut Journal of Physical Education Sciences and Arts - Assiut University*, 47 (5), pp. 738-765.
- [3] Hareed, A., and Hamdawi, A. (2021). *Digital Transformation and its Role in Improving the Quality of Educational Service: A Field Study at Ahmed Derayah University*, Unpublished Master Thesis, Ahmed Derayah University Adrar, Adrar.
- [4] Ragab, E. (2022). Digital transformation in university education: its concept, objectives and mechanisms. *Journal of Educational Sciences - South Valley University*, 50, pp. 54-77.
- [5] Hassan, R. (2020). *The role of using management information systems in raising the efficiency of employee performance: a case study of El Neelain Bank Group*, an unpublished master's thesis, El Neelain University, Khartoum.
- [6] Al-Dahshan, J, and Alsaid, S. (2020). A proposed vision to transform Egyptian public universities into smart universities in light of the digital transformation initiative for universities. *The Educational Journal of the Faculty of Education at Sohag University*, 78 (78), pp. 1249-1344.
- [7] Muhammad, A., and Al-Ghubairi, M. (2020). The reality of the digital transformation of the Kingdom of Saudi Arabia: an analytical study. *Journal of Administrative and Financial Sciences - Martyr Hama University Lakhdar Al-Wadi*, 4 (3), pp. 8-31.
- [8] Al-masdar, H., and Nasrallah, A. (2020, April 6-7). *The role of digital transformation in improving government services in Palestine, research presented*. The First International Conference on Information Technology and

- [9] Banwan, H. (2022). Educational requirements for digital transformation in Egyptian society: basic education as a model. *Journal of Scientific Research in Education - Ain Shams University*, 23(3), pp. 1-35.
- [10] Al Namlan, M., Al-Shunaifi, A., and As-Suhaim, H. (2022). Digital transformation in education offices in Riyadh from the point of view of female educational supervisors. *The Arab Journal of Educational and Psychological Sciences*, 6 (27), pp. 491-520.
- [11] Al-Sawat, T., and Al-Harbi, Y. (2022). The impact of digital transformation on the efficiency of academic performance: a case study of faculty members at King Abdulaziz University. *The Arab Journal for Scientific Publishing*, 43, pp. 647-686.
- [12] Brdese, H. (2021). A Divergent View of the Impact of Digital Transformation on Academic Organizational and Spending Efficiency: A Review and Analytical Study on a University E-Service. *Sustainability*, 13(13), 7048.
- [13] Al-Harirat, A., and Abu Bakr, S. (2021). The impact of electronic management of human resources on the performance of employees in the Royal Jordanian Airlines. *Amman Arab University Journal for Research - Administrative Research Series*, 6 (1), pp. 146-163.
- [14] Asbari, M., Hidayat, D. D., & Purwanto, A. (2021). Managing employee performance: From leadership to readiness for change. *International Journal of Social and Management Studies*, 2(1), 74-85.
- [15] Mugizi, W., & Amwine, C. M. (2020). Information Communication Technology Use and Job Performance of Teachers at a Private International School in Uganda. *Creative Education*, 11(02), 166.
- [16] Hammad, M. (2020). The role of digital transformation in developing the performance of employees: A field study on the Egyptian Company for Pharmaceutical Trade. *Scientific Journal of Financial and Administrative Studies and Research - Sadat City University*, 7 (2), pp. 465-486.
- [17] Manita, R., Elommal, N., Baudier, P., & Hikkerova, L. (2020). The digital transformation of external audit and its impact on corporate governance. *Technological Forecasting and Social Change*, 150, 119751.
- [18] Abdul Mohsen, N. (2015). Career path planning as a mechanism to increase the efficiency of the performance of workers in the sector of the National Council for Youth, *Journal of Studies in Social Work - Helwan University*, 39(13), pp. 13-73.
- [19] Al-Janfawi, K. (2021). The digital transformation of national institutions and the challenges of cybersecurity from the point of view of the company's academic officers in Kuwait. *The Arab Journal of Literature and Human Studies*, 5 (19), pp. 75-123.