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The digital transformation role in profitability increasing of economic units - An experimental study in a sample of Iraqi companies

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Abstract

The research aims to improve customer experience, meet their needs, work to develop and enhance business effectiveness, maintain competitive strength and raise productivity by automating and eliminating routine processes. Digital transformation helps economic units reduce costs, which leads to increased profits. The descriptive statistical method (SPSS) was used to analyze the data. The researchers distributed 73 questionnaires, and after obtaining them; the researchers analyzed them. The purpose of the questionnaire is for academic professors, professionals, and workers in the units representing the research sample (Baly Company, Talabaty Company, and Toters Company). The study reached several conclusions, the most important of which is that there is a positive relationship between digital transformation and the profitability of units, in addition to reducing the time to provide service and the effort needed to complete tasks, improving processes within units, and reducing human mistakes.

Keywords: Digital transformation, Profitability

1. Introduction

1.1. Research Methodology

1.1.1. The research problem:

As a result of technological developments, digital transformations, and the introduction of modern technologies into production, this led to faster completion of operations, raising product efficiency, and maintaining competitive strength. Moreover, this leads to increased profits. The research problem is represented in the following question:

Does digital transformation affect increasing the profitability of economic units?

1.1.2. The research problem:

- A-Raising productivity and developing business efficiency and effectiveness through automation of processes.
- Highlighting the role of applying digital transformation mechanisms as a technology innovation.
- Digital transformation helps economic units reduce costs in many aspects.

1.1.3. The research hypotheses

First: "There is a significant impact relationship between digital transformation, improving the efficiency of products and services, and reducing costs".

Second: There is a significant impact relationship between digital transformation, developing new products and services, adding to improving customer experience.

1.1.4. The importance of research

It is increasing the effective role of digital transformation as one of the information technology innovations, which supports the implementation of joint business with real flexibility and harmony that is reflected in the quality of products and services provided to beneficiaries.

1.1.5. Sample and research community

The research population consists of a group of Iraqi companies. The research sample is represented by Baly company, Talabatey, and Toters. The questionnaire was directed to academic professors, employees, professionals, and workers in the units. The two researchers distributed 73 questionnaires, all of which were valid for statistical analysis.

1.2. Previous Studies

Muhammad Maysar, 2023, study reached several conclusions, the most important of which is the existence of an impact of digital transformation technology in all its dimensions in supporting business intelligence, and benefiting from the experiences of the leading global units in the employing and managing digital technology field in a way that improves Zain's company work performance and supports its business intelligence.

Qisma Saber et al. 2023, study reached conclusions, the most important of which is that most bank employees (the research sample) are electronically ignorant and are not interested in digitization and digital transformation. It came out with several recommendations, the most important of which is the need to intensify administrative efforts about training in digitization to keep pace with developments in the different business environments.

Al-Hadidi Sherine et al., 2022 study reached several conclusions, the most important of which was the existence of a significant impact of digital transformation technology on digital maturity through its dimensions, especially supporting the senior leadership in the company in the first place, then mobilizing resources and owning modern infrastructure, and finally providing digital security by owning the latest Protection software.

1.3. General Introduction

The rapid developments that have occurred around the world in devices, machines, and smart systems and the emergence of digital transformation technology have led to reduced time, reduced costs, increased flexibility and efficiency in the production process, and increased ability to process data with artificial intelligence, forcing economic units to adapt to this development and become... More competitive in this field many units are paying attention to the application of digital technologies that create value to transform interaction and exchange with consumers.

In addition, digital transformation represents one of the most important drivers and encouragement of the growth of large units, which makes it necessary for the units to keep pace with modern development to create innovative solutions that ensure their continuity in the competition circle. Digital technologies work to improve administrative, production, and marketing activities, especially communication with current and potential customers, as it allows Purposeful units to have a better understanding of new products and services that are tailored to meet customer needs and thus increase the unit's profits.

2. Digital Transformation

2.1. Digital Transformation Definition

Digital transformation is defined as the process of economic units transitioning to a business model that relies on digital technologies to innovate products and services and provide new channels of revenue and opportunities that increase the

value of their products.

Digital transformation is an investment in thought and behaviour change that leads to a radical change in the way of work while taking advantage of the great technical development that has been achieved to serve beneficiaries faster and better.

Digital transformation is also seen as a tool for improving efficiency, reducing costs, and implementing new services quickly and flexibly. Digital transformation also requires a culture of creativity in the work environment.

2.2. The importance of digital transformation

The importance generally appears after transformations from implementing paper-based processes to electronic or digital processes with automation and governance of procedures, and the involvement of all stakeholders (owners, managers, and employees). To adopt a digital transformation approach that has a role in creating a type of mutual interaction between them (Al-Mutairi, 2022, P.1701) ^[11].

Digital technologies are creating a new omnichannel perspective by integrating interactive channels with traditional channels (Verhoef et al., 2015) ^[15].

Digital transformation can be seen as a platform for units to gather insights into what is needed to gain a competitive advantage. Digitization also has a social dimension that focuses on customers and processes, with an emphasis on technological innovations (Gray & Rumpe, 2017; Li et al., 2018) ^[13, 14].

2.3. The importance of digital transformation:

Digital transformation can be interpreted as a comprehensive process aimed at transforming traditional processes and activities into digital forms using modern technology and includes digital transformation mechanisms.

- a. **Technologies:** Digital transformation is built using a system of hardware and software (cloud computing, mobile phones, internet platforms) and advanced human-machine interaction, authentication and fraud detection, 3D printer, smart sensors, wearable devices, big data analysis and algorithms.
- b. **Data:** Economic units are expected to make efforts to manage and analyze data regularly and efficiently in order to provide reliable and complete qualitative data, research data and forecast the future. Data must also be continuously monitored to ensure its continuous flow and utilization according to the unit's goals and expectations.
- c. **Human Resources:** The human factor is an important element in this process, and therefore; managers should provide training courses for unit employees in the digital transformation phase so that they can develop their skills.
- d. **Operations:** Economic units must create an effective technical structure that allows the development of performance at the internal and external levels and procedures to ensure the optimal application of digital transformation. This includes creating a technical structure that includes relevant policies covering all the unit's activities and operations, and interconnected with the necessary technologies, developed applications, and processed data.

2.4. Profitability of Economic Units

2.4.1 The concept and definition of profitability

Profitability indicates the efficiency of the means in achieving a certain result. If profitability is attributed to the

assets of the unit, then profitability is economic profitability. If the result is attributed to the private capital owned, then profitability is financial profitability. However, if it is attributed to turnover, then commercial profitability. The difference between the concept of profit and the concept of profitability is that profit results from the difference between the unit's revenues and its expenses, i.e. net income, and we find it in the results accounts table. Whereas profitability refers to the profit attributed to some component elements of the balance sheet or results in accounts table. It is also known as the actual embodiment of the results achieved by the unit, which are of interest to multiple parties and different groups (shareholder owners, lenders, suppliers, workers), and this is what made its concept more relative, determined and linked to the goals that each of these parties seeks to achieve.

2.4.2. The importance of profitability

Profitability is considered a basic necessity for every unit, which it seeks to achieve in light of the challenges and variables imposed by the marketing environment. For the unit to continue over a long period, it must achieve a good level of profitability, and achieving this required level means increasing investment in the areas in which the unit excels and wants to Expand and grow to advance and continue in the market in which it is active while maintaining its financial independence.

As for the other units that deal with the unit, their trust and relationship with the unit increase with increased profitability rates, indicating that the unit can fulfil its obligations and due payment dates, and this is what makes suppliers prefer to deal with it, as it helps to increase its sales regularly.

2.4.3. Profitability goals

Profitability is one of the basic objectives of the units and is essential for their survival and continuity. The goal of making a profit is one of the pillars that investors aspire to (Haddad, 2014, p. 22).

1. It is an important indicator for creditors and an important tool for measuring management's efficiency in using its resources.
2. The financial manager must obtain the required funds at the lowest costs and risks.
3. The unit should invest money in a way that allows it to achieve a good return in other projects that are exposed to the same degree of risk.

3. The practical aspect: Analysis of the results of the research test

3.1. Description and diagnosis of the research sample

This chapter includes a description of the methodology that

was used during the conduct of this research. It includes a description of the research population, identification of the sample, unit of analysis, and type and nature of the study. It also explains the tool used to collect data for the study and the extent of its validity and reliability. It also includes a statement of the methods used in collecting data and statistical methods for analyzing it.

3.1.1. Study population and sample

The study population consists of a group of Iraqi companies, while the research sample was represented by Baly, Talabatey, and Toters. The purpose of the questionnaire is for the academics, professionals, and workers in the companies that are the research sample. We distributed the questionnaires using the easy method, Google Forms, and sent them via WhatsApp groups, as well as Viber groups, where (73) questionnaires were distributed and (73) were retrieved, and analyzed using the form method. Statistical SPSS.

3.1.2. Tools and sources of data collection

Basic primary sources

In collecting primary data, we mainly relied on the distributed questionnaire that was developed based on the questionnaires found in previous studies, and the wording of the questionnaire paragraphs following the research hypotheses to reach the required objectives. Several appropriate statistical methods were used in analyzing data to find the relationship.

Secondary sources

In dealing with the theoretical framework of the research, the researchers relied on secondary data sources which are Arabic and foreign books and references, periodicals, articles, and previous studies that dealt with the subject of the study.

3.2. Presentation and analysis of data and testing of hypotheses

3.2.1. Validity and reliability tests for the questionnaire

The honesty test is applied to measure the effectiveness and accuracy of the research questionnaire items (the role of digital transformation in increasing the profitability of the economic unit), using confirmatory honesty. While the researchers applied the reliability test to the data, relying on the reliability factor Alpha, to ensure the stability of the data obtained from the sample members' answers to the items of the research questionnaire, the results of applying these tests were as follows:

Table 1: Results of the reliability test (Cronbach's Alpha) for the research questionnaire items

Sections	Stability Factor	Stability level	Researchers Explanation
The first section consists of 5 paragraphs	0.719	Acceptable	The second section of the stability test was successfully passed
The second section consists of 5 paragraphs	0.735	Acceptable	The second section of the stability test was successfully passed
The third section consists of 5 paragraphs	0.817	Acceptable	The third section of the stability test was successfully passed
All paragraphs of the research questionnaire 15	0.883	Acceptable	All the sections of the paragraph passed the test of researchers' questionnaire
The level reliability is acceptable if the reliability coefficient value is more than 0.700 to less than 0.800			
The level of reliability is moderate if the value of the reliability coefficient is more than 0.800 to less than 0.900			
The level of reliability is high if the value of the reliability coefficient is more than 0.900 to less than one			
The level of stability is complete if the value of the stability factor is equal to integer one.			

Source: Prepared by the researchers according to the results of the SPSS V26 program

Table (1) confirms that the value of the reliability coefficient (Cronbach's Alpha) for the total items of the first section reached (0.719), which is more than (0.700), which indicates the presence of stability in the digital transformation items as the independent variable and the profitability of the units as the dependent variable. As for the overall paragraphs of the second dependent section, a reliability coefficient was recorded (0.735), which is more than (0.700), which indicates the existence of stability between them. As for the total

paragraphs of the third section, a reliability coefficient was recorded (0.817), which is more than (0.800), which confirms the presence of high reliability. In paragraphs. Table (1) also documents that the value of the reliability coefficient for the entire paragraphs of the research questionnaire recorded (0.883), which is more than (0.700), which proves that the paragraphs of the research questionnaire passed the reliability test successfully.

Table 2: The level of the study sample responses to the digital transformation items

Paragraph	Weighted arithmetic mean	Answer Direction	Answer level	Standard Deviation	Relative importance %	Coefficient of variation %
Digital transformation enables units to provide easier and more effective means of communication with customers, through social media, or live chat over the Internet, making it easier for customers to communicate and request service when needed.	4.53	Agreed	Very agree	0.5	%90.60	%2.27
Digital transformation can provide an innovative and distinctive purchasing experience for customers, whether by designing responsive and easy-to-use online stores, or by providing interactive experiences such as virtual reality and virtual store visits.	4.23	Agreed	Very agree	0.63	%84.60	%2.66
Digital transformation can improve customers' experience during the service process, whether through providing online services such as technical support and assistance	4.09	Agreed	Agree	0.63	%81.80	%2.58
Digital transformation can improve customers' experience during the service process, whether through providing online services such as technical support and assistance	4.32	Agreed	Very agree	0.64	%86.40	%2.62
Digital transformation enables units to continuously improve customer experience, by improving offers and services and adjusting strategies according to changing customer needs.	4.19	Agreed	Agree	0.59	%83.80	%2.47
Digital transformation can facilitate the automation of many processes within units, reducing human mistakes and increasing efficiency and accuracy in executing tasks.	4.58	Agreed	Very agree	0.49	%91.60	%2.24
Digital transformation enables the flow of processes within units, such as customer relationship management (CRM) and enterprise resource planning (ERP) systems, to be organized, which increases the efficiency of service delivery	4.11	Agreed	Agree	0.62	%82.20	%2.55
Digital transformation can reduce the time and effort required to complete tasks, whether through smart applications and automation, which contributes to improved efficiency	4.33	Agreed	Very agree	0.62	%86.60	%2.68
By dint of digital transformation, the unit can better collect and analyze huge amounts of data, enabling it to make more accurate and effective decisions and thus improve efficiency.	4.25	Agreed	Very agree	0.7	%85.00	%3.00
Digital transformation enables units to simplify complex processes and transform them into more efficient and smooth operations, increasing efficiency and reducing waste and cost.	4.3	Agreed	Very agree	0.63	%86	%2.71
Digital transformation has encouraged technological innovation and the use of technology in new ways to develop innovative products and services. Such as using artificial intelligence, virtual reality, and augmented reality technologies to develop new products and services	4.29	Agreed	Very agree	0.65	%85.80	%2.79
Digital transformation enables the unit to collect more accurate and comprehensive data about customers' needs and behavior. This helps them better understand market needs and develop products and services that better meet those needs	4.22	Agreed	Very agree	0.65	%84.40	%2.74
Digital transformation can improve interaction with customers and collect their feedback and suggestions faster and more effectively. This can guide product development and continuous improvement	4.18	Agreed	Agree	0.63	%83.60	%2.63
Digital transformation can be used to provide added services such as data analytics, online communication, and virtual interaction experiences. These services can be a source of new revenue and contribute to improving the value provided to customers.	4.08	Agreed	Agree	0.67	%81.60	%2.73
Digitalization enables active units of their system and services to be faster and more adaptable to rapidly changing	4.27	Agreed	Very agree	0.67	%85.40	%2.86

fundamentals.					
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General Average	Arithmetic average	Standard deviation	Percentage	Sample Direction
All Sections	4.27	0.64	85.4	Very agree

Source: Prepared by the researchers according to the results of the SPSS V26 program

It can be concluded from Table (2) that the value of the arithmetic mean for the digital transformation variable was (4.08), which is greater than the value of the default average (4). The value of the weighted arithmetic means for this variable fell into the category between (4.8 to 4.58) in the gradations of the response strength matrix, individuals. The sample, to document that the level of the sample’s answers to the overall items tends towards agreement at a high level, with a standard deviation of (0.67), a relative importance level of (81.6%), and a standard coefficient of variation of (2.733%), which shows the extent of the homogeneity of the sample’s responses. In a way that shows the agreement of about three-quarters of the research sample members

The research sample expressed great interest in the need for digital transformation in units. It can also be concluded from Table (2) that the levels of importance of the paragraphs within the variable of digital transformation and unit profitability were distributed between the lowest standard deviation level of (0.49) recorded in Paragraph No. (6) and a relative importance level of (91.6%), with a standard coefficient of variation recorded of (2.244%).) between all items on digital transformation, which documents the presence of higher consistency between the responses of sample members in all items of the independent variable, which confirms agreement and more than three-quarters of

the survey participants believe that the application of digital transformation plays a very important role in business units. Paragraph (9) recorded the highest standard coefficient of variation of (2.996%) among all the paragraphs related to digital transformation, which documents the presence of homogeneity among them.

3.2.2 Normality of Tests

The moderation test method is applied to ensure that the data obtained from the research sample follows a normal distribution or not, especially since passing the data to the moderation test is one of the basic conditions that must be met in the research data, which allows researchers to choose statistical methods that are appropriate to the nature of the research. Thus, it is possible to apply all laboratory (parametric) statistical methods and measures to the research data. There are several ways to test for moderation. The most accurate and common of them is the Smirnova-Kolmogorov test, which is used to document moderation when the size of the sample studied is fifty observations (questionnaire) or more, the Shapiro-Wilk test, which is used to document moderation when the size of the sample studied is fifty observations (questionnaire) or more, and the Shapiro-Wilk test. Which is used to document moderation when the sample size studied is fifty observations (questionnaire) or more.

Table 3: Smirnov-Kolmogorov test data on the axes of the research questionnaire

Variables	The value of the test statistic	Probability value SIG	Comments by the researchers
First Sector		0.2	For digital transformation, as an independent variable, it follows a normal distribution. Unit profitability, as a dependent variable, follows a normal distribution
Second Sector		0.2	Digital transformation as the independent variable follows a normal distribution. Unit profitability as the dependent variable follows a normal distribution
The distribution of the data is normal if the null hypothesis is accepted, that is, when the probability value is greater than the significance level used in the research, which is (0.05).			

Table (3) ensures that the digital transformation variable and the unit profitability variable follow a normal distribution, and thus it is possible to apply all laboratory statistical

methods and measures (parametric) to the data of the independent variable and the dependent variable, as shown in the following Figure (1) and Figure .:(2)

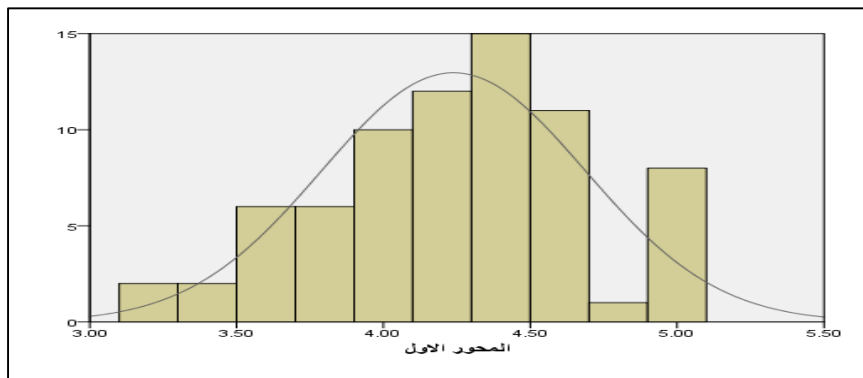


Fig 1: Shows a normal distribution of data for the first section paragraphs

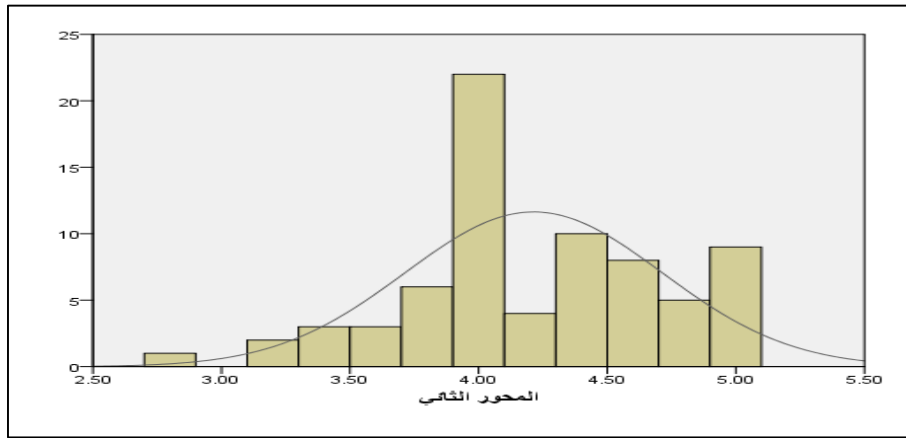


Fig 2: Shows a normal distribution of data for the second section paragraphs

3.2.1 The first section

Data for using the Z-TEST method relate to testing the hypothesis of the association between digital transformation and unit profitability, because the result of the Z-TEST test will lead to accepting the association hypothesis if the probability value (p value) corresponding to the calculated Z value is less than or equal to the significance level. The value adopted in the research is (0.05), which documents the acceptance of the correlation hypothesis with a confidence rate of (95%), while the researchers benefit from measuring the Superman correlation coefficient to indicate the strength and direction of the correlation between digital transformation technology and unit profitability. In this

study, the two researchers will test the second main hypothesis, which states (there is a significant impact relationship between digital transformation, developing new products and services, and improving customer experience), and the following table (4) verifies the validity of the second main hypothesis, with a significant relationship, and the confidence percentage reached (95%), because the calculated value of z reached (8.245), which is significant, while the value of the correlation coefficient between digital transformation technology and unit profitability reached (0.831), which indicates the presence of a strong correlation between the two variables

Table 4: Results testing the second hypothesis

Independent variable	Dependent variable	Correlation coefficient between two variables	Explanation	Z test		Explanation
				Calculated Z value	Probability value	
Digital transformation	Develop new products and services and improve customer experience	**0.831	There is a strong correlation between the two variables	8.245	0	Accept the hypothesis The second
** Correlation is significant at the 0.01 level (2-tailed)						
* Correlation is significant at the 0.05 level (2-tailed)						

Source: Prepared by the researchers according to the results of hypothesis testing using SPSS V26

Conclusions

1. There is a significant impact relationship between digital transformation, improving the efficiency of products and services, and reducing costs, as the calculated z value reached (8.325), which is a significant percentage, while the value of the correlation coefficient between digital transformation technology and the unit of profitability reached (0.821), which indicates the existence of a relationship Strong link between digital transformation and unit profitability.
2. There is a significant influence relationship between digital transformation, developing new products and services, and improving customer experience. The confidence percentage reached (95%), because the calculated value of z reached (8.245), which is significant, while the value of the correlation coefficient between transformation technology was Digital and unit profitability (0.831), which indicates a strong correlation between the two variables.
3. Digital transformation provides simpler and more effective ways to communicate with customers and

- request service when needed.
4. The units have an important role in facilitating the automation of many processes within units, which reduces human errors and increases efficiency.
5. Digital transformation can reduce the time and effort required to complete tasks through smart applications, and this is reflected in increasing the profitability of the units
6. Feedback has a vital and effective role in developing the digital transformation and improving the customer experience through the services provided.

Recommendations

1. Identifying the factors that help the unit reduce digital transformation costs by automating routine processes in order to enhance the units' profitability.
2. It is necessary to maintain competitive strength, raise productivity, and keep pace with developments and changes occurring in the market because they have a positive impact on economic profitability.
3. It is necessary to maintain the reputation of the economic

unit and the confidence of customers in it by identifying cybersecurity challenges, which can harm the integrity of data and information.

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