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إعداد

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The Impact of Digital Transformation on Organizational Performance in the Banking Sector in Egypt with Application on the Agricultural Bank of Egypt''

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Abstract

These research objectives aim to understand the interplay between digital transformation and organizational performance, as well as the potential influence of demographic factors such as gender, age, and educational qualifications on these constructs. In the research, reliance was placed on internal consistency validity to verify the accuracy of the measure. To assess the internal consistency validity of the scales (Digital Transformation, Organizational Performance), they were applied to a pilot sample of 50 respondents. Following the observation of the results, they were processed. The Pearson correlation coefficient was calculated between the factors and the total scale score, Reliability coefficients for the scales (Digital Transformation, Organizational Performance) were calculated using Cronbach's Alpha coefficient after that the researcher used an analytical descriptive strategy to test their hypotheses. The study's instrument, a questionnaire, was disseminated after being assessed and arbitrated by multiple experts on a sample. Participants in the study were random customers of ABE Bank in 3 branches in Mansoura the sample was (380) and (350) were retrieved with a percentage of Recovery equal to (92%). According to the study's findings, the findings could provide valuable insights for organizations seeking to improve their performance through digital transformation initiatives. Additionally, the study also suggested that, given their efficacious role in enhancing operational performance, banks should leverage the advantages of information technology and artificial intelligence approaches to the financial and organizational elements more.

Keywords:

Digital Transformation, Organizational Performance, Big Data, Infrastructure, Banking Sector.

Introduction

In the contemporary business landscape, digital transformation has emerged as a pivotal catalyst for organizational growth and sustainability. The rapid pace of technological advancements has reshaped the way businesses operate, interact with customers, and deliver value. As organizations strive to remain competitive and relevant, embracing digital transformation has become an imperative strategy. Digital transformation encompasses the integration of digital technologies across all aspects of an organization, from operational processes to customer interactions and business models. It represents a fundamental shift in organizational culture, mindset, and operations, enabling companies to leverage data, analytics, and digital technologies to drive innovation, enhance efficiency, and create exceptional customer experiences. One of the key dimensions of digital transformation is the ability to deliver superior customer experiences. In today's customer-centric era, organizations that prioritize customer experience are better positioned to foster loyalty, drive repeat business, and gain a competitive edge. By leveraging digital technologies, businesses can gain deeper insights into customer preferences, behavior, and expectations, enabling them to personalize interactions and deliver seamless, omnichannel experiences. The banking industry, in particular, has witnessed significant disruption due to the rapid adoption of digital technologies and changing customer expectations. Traditional banking models are being challenged by the emergence of fintech companies and digital-first players, compelling established institutions to adapt and innovate. ABE.com, a leading digital banking platform, represents a prime example of an organization that has embraced digital transformation to enhance customer experience and drive organizational performance. This research study aims to investigate the impact of digital transformation on organizational performance, with a particular focus on the customer experience. By analyzing the case of ABE Bank, the study seeks to provide valuable insights into the relationship between digital transformation, and organizational performance in the banking sector.

The problem of the research

The research problem centers around the lack of empirical evidence investigating the specific mechanisms through which digital transformation initiatives impact organizational performance in the banking sector,

More specifically, the research problem encompasses the following aspects:

- 1- Limited understanding of how digital transformation translates into improved organizational performance: While digital transformation is widely recognized as crucial for driving performance, there is a gap in empirically examining the pathways through which digital transformation initiatives lead to enhanced organizational outcomes in the banking industry.
- 2- Disruptive changes in the banking industry: The banking industry is undergoing a transformative shift driven by technological advancements and evolving customer expectations. Traditional banking models are being challenged by the emergence of fintech companies and digital-first players, compelling established institutions like ABE Bank to adapt and innovate through digital transformation strategies.
- 3- Limited understanding of digital transformation's impact on customer experience and organizational performance in banking: Despite the efforts of banks to implement digital transformation initiatives, there is a lack of empirical evidence on how these initiatives specifically influence customer experience and, consequently, organizational performance within the banking sector.

By addressing this research problem through the lens of ABE Bank, a leading digital banking platform that has embraced digital transformation to enhance the banking industry's customer experience. Resolving this research problem is crucial for banks and financial institutions to navigate the digital disruption landscape effectively, develop targeted strategies to leverage digital technologies, enhance customer experiences, and ultimately drive superior organizational performance within the banking sector.

Literature review

Using the viewpoints of "Skewed conflict," "minority dissent theory," and "too much of a good thing," this study aims to confirm whether digital transformation strategy (DTS) could enhance organizational performance and offer a thorough analysis for businesses on the necessity of implementing DTS in the context of China. The curvilinear moderating influence of cognitive conflict between performance and DTS is examined in this study (Wang L, et al, 2020)., the impact of electronic payment systems on the financial performance of micro-finance banks in the state Niger, which aimed to examine the impact of electronic propulsion systems on the financial performance of banks Smaller financial institutions in the State of Niger, and the results of the analysis indicated the existence of The bank, which enjoys the acceptance of workers, looks at electronic payment systems for ease of use. Besides, there's an infrastructure that facilitates ATMs and push options. Internet, electronic payment cards, and mobile banking systems. Positive, little Will. (Sakanko A, et al, 2019), Digital transformation affects the performance of workers, which is intended to determine the impact of digital transformation. Industry techniques, big data, and the inter-operability Internet. Performance of SMEs in Pakistan. The study found that the use of both industry techniques, massive data analysis, and interoperability have an impact.

A strong positive for improving labor performance, while the Internet had little effect. (Samon K, et al 2019), The federal government of Brazil's digital transformation of public services is examined in this article. Based on a survey conducted with 85 federal agencies, 1,740 public services are analyzed in light of various criteria that explain a public service's digitalization. We outline the restrictions associated with agent preferences in public policies as we talk about the shift from an e-government to a digital policy. The role of agents, the settings of decisions, and the variables that explain the decision to digitize public services are all taken into consideration in this article, which covers digital transformation in governments as a process of institutional change in public organizations. (Fernando F. et al 20019), This study explores the phenomena of small- and medium-sized business entrepreneurs driving digital transformation within their

organizations despite having limited resources and insufficient capabilities. This research fills a vacuum in the existing literature on the subject.

We carry out a qualitative study on the digital transformation that seven SMEs on the Alibaba digital platform undergo to facilitate cross-border e-commerce. We inductively derive a process model that attempts to characterize and explain how SME entrepreneurs drive digital transformation through business team building, organizational capability building, managerial social capital development, and managerial cognition renewal with assistance from the digital platform service provider. This paradigm deepens our comprehension of digital transformation and entrepreneurship. It also offers fresh perspectives on how digital platform service providers might support SMEs in their competitive transformation. (Liang L. et al, 2018). Organizations are under a lot of pressure to adapt to the quick changes in both technology and work practices. While digital transformation aids in their ability to adapt to these changes, firms still face numerous challenges in a cutthroat market. Thus, a thorough analysis of how digital transformation is affecting Saudi businesses is required. To close this gap, research will investigate how digital innovation acts as a mediator in the relationship between organizational performance and digital transformation. 170 completed questionnaires from employees of Saudi telecom companies (STC, Zain, and Mobily) were surveyed. The data was analyzed using the component-based partial least squares approach. According to the findings, there is a connection between digital innovation as a mediator between organizational performance and digital transformation. and mentioned that digital innovation is greatly influenced by the technological and social aspects of digital transformation. Lastly, the results urge big businesses to seize the chance to implement digital innovation and transformation to improve their performance across the board for the organization. (Ayad E, et al,2023). The way that consumer wants are being met is changing as markets get more interconnected on a global level. Both large and small businesses can source labor, raw materials, and production from a variety of sources to keep costs as low as possible. For this reason, supply chain management is crucial to the expanding e-commerce industry. With the creation of new business models, e-commerce is

booming and will only continue to grow in the years to come. One of the primary drivers of economic progress is thought to be e-commerce. E-commerce, which offers accessibility, ease, and flexibility, has become a global phenomenon. Customers can benefit from reduced costs, increased availability, and shorter turnaround times through e-commerce. E-commerce has an impact on several business areas, including customer service. to the creation and distribution of products. An increasing number of consumers are placing orders for goods online due to factors like affordability, increased selection, ease of use, etc. They anticipate that these goods will reach their destination as soon as feasible and that there may be free returns and a variety of payment options available. More is needed to survive in the cutthroat economy of today than just low prices and cutting-edge goods. Businesses need to concentrate and comprehend the client experience if they want to gain a competitive edge. In this day and age, meeting customers' demands is what sets companies apart from one another. As a result, businesses must begin concentrating on customer experience management (CEM). Customer experience management is the approach used by the organization to manage all customer interactions with its products and services, (younis, R 2021).

What distinguishes the present study from previous ones?

The present study is similar to previous studies in terms of purpose and approach. Analytical description, which differed from the study variables, and the selection of the Agricultural Bank of Egypt to study to show the impact of digital transformation on performance. This is the first study of this bank.

Reasons for the selection of the Agricultural Bank of Egypt (ABE):

- 1- Significance of the agricultural sector: The agricultural sector plays a vital role in Egypt's economy, contributing significantly to employment, food security, and export earnings. The Agricultural Bank of Egypt is one of the key financial institutions supporting and facilitating the development of this crucial sector. Examining digital transformation initiatives in the bank can provide insights into how technology can enhance

organizational performance and customer experience in the agricultural banking domain.

- 2- Reach and customer base: As a specialized bank catering to the agricultural sector, the Agricultural Bank of Egypt likely has a vast customer base comprising farmers, agribusinesses, and rural communities. Studying its digital transformation efforts can shed light on how technology is being leveraged to improve service delivery, accessibility, and customer experiences for this diverse client base, which may have unique requirements and challenges compared to urban or corporate customers.
- 3- Potential for digital transformation impact: The agricultural sector has traditionally been associated with more conventional and manual processes. By including the Agricultural Bank of Egypt in the study, researchers can explore the potential impact of digital transformation initiatives on organizational performance and customer experience in an industry that may have lagged in technological adoption compared to other sectors.

Overall, the choice of the Agricultural Bank of Egypt (ABE) as a case study likely stems from its relevance to the research objectives, its engagement in digital transformation efforts, its focus on customer experience, and the potential to provide valuable insights into the banking sector's digital transformation landscape within Egypt.

Objectives of research

- 1- To investigate the correlational relationship between digital transformation (with its factors of human cadres, infrastructure, and big data analysis) and organizational performance (with its factors of customer experience and functional performance).
- 2- To examine if there are significant differences in the levels of digital transformation and organizational performance based on gender.
- 3- To analyze if there are significant variations in the levels of digital transformation and organizational performance across different age groups.

- 4- To assess if there are significant variations in the levels of digital transformation and organizational performance based on educational qualifications (low, medium, or high).
- 5- To determine the impact and predictive ability of digital transformation factors on organizational performance through regression analysis.

Research Hypotheses

- 1- There is a correlational relationship between Digital Transformation with their factors and Organizational Performance with their factors.
- 2- There are no significant differences in the levels of (Digital Transformation and Organizational Performance) according to the Gender variable.
- 3- There is no significant variation in the levels of Digital Transformation, Organizational Performance) according to the Age variable.
- 4- There is no significant variation in the levels of Digital Transformation, Organizational Performance) according to the Educational Qualifications variable.
- 5- The impact of the independent variables (Digital Transformation) in explaining the variance in the dependent variable (Organizational Performance) varies according to the regression coefficients.

The Methodology of the Research

A-Research methods

The researchers relied on the following practical methodology:

- 1- **Theoretical study:** based on the analytical descriptive approach using books The references and the world's literature.
- 2- **Pilot study:** they were applied to a pilot sample of 50 respondents. Following the observation of the results, they were processed. The Pearson correlation coefficient was calculated between the factors and the total scale score, Reliability coefficients for the scales (Digital Transformation, Organizational Performance) were calculated using Cronbach's Alpha coefficient.

3- **Practical study:** without relying on electronic identification and distribution to Bankers, using statistical program spss.

1- Statistical analysis and testing of research hypotheses and access to specific findings and proposals.

b-Variables of study:

Independent variable: requirements for applying digital transformation (human cadres, infrastructure, big data).

Dependent variable: Bank performance is represented by both (quality of services provided, efficiency of services), It was submitted by the branch of the ABE banks.

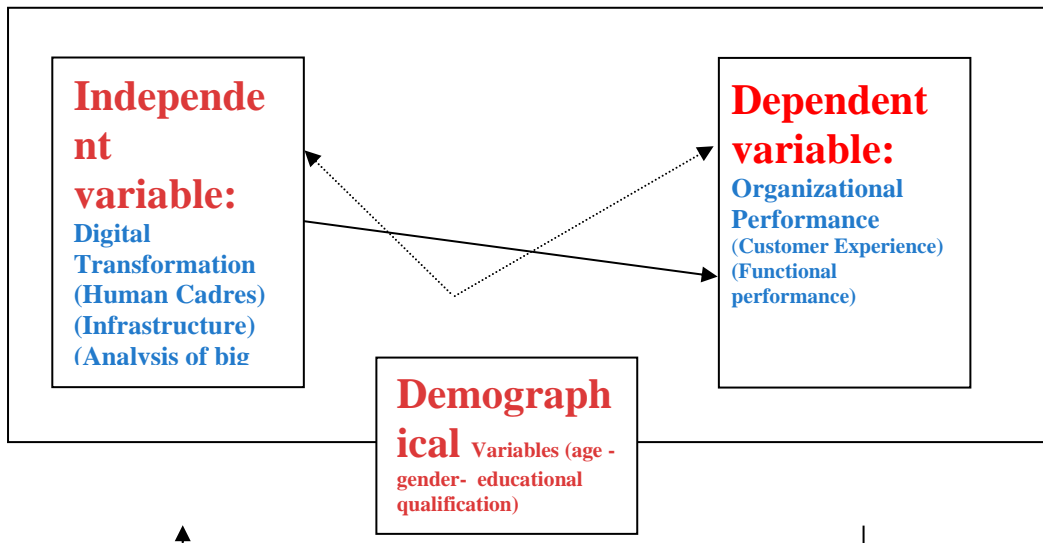


Figure 1 Conceptual Model Prepared by the researchers.

C- Sample and population:

We've been doing a Pilot study with a pilot sample of 50 customers and The study community represents three branches of the Egyptian Agricultural Bank. The resolution was relied upon and distributed to a sample of 380 of the three branch agents Randomly, 350 were retrieved.

D- Methods of measuring variables

The study community represents three branches of the Egyptian Agricultural Bank. The resolution was relied upon and distributed to a sample of 380 of the three branch agents Randomly, 350 were retrieved. The statistical program SPSS is based on the 24th test of study hypotheses. We are using multiple linear regression tests to determine the impact of digital transformation applications on Bank performances. The sample of the research is shown in Figure 5. The statistical results and the paperwork test will be presented and discussed in the paper.

Theoretical framework for the study

1- Digital Transformation and its significance:

Public and private institutions have resorted to techniques and electronic media and have By inventing innovative services, and modern payment systems, and harnessing their own. Human and material potential to develop these tools for high-quality services To clients and beneficiaries of their services. The nations of the world have quickly adopted modern technologies in transforming their traditional services into sophisticated electronic services with the development of their delivery methods Users. Terms like "digitization," "digitalization," and "digital transformation" are frequently at the top of modern managers' priority lists. Although these terms are frequently used interchangeably, they have quite different connotations and require quite different methods. The act of switching from analog to digital is known as digitization, whereas digitalization is the process of "restructuring many domains of social life around digital communication and media infrastructures (Brennen, J. S., & Kreiss, D. 2016). Lastly, the definition of digital transformation is "a process that tries to improve an entity by triggering meaningful modifications to its

characteristics made possible by a combination of connection, computation, information, and communication technologies” (Vial, G. 2019). The majority of modern businesses are currently in the process of digitally revolutionizing their operations, even though it is widely acknowledged that these three phrases frequently follow a sequential order of maturity. However, there are several risks involved in doing so, and technology is frequently just one piece of the intricate puzzle that needs to be addressed to stay competitive in the digital world. Even though the field of digital transformation has seen a great deal of research over the past ten years, there is still much to learn about this change. This is mostly because digital transformation occurs in an unpredictable environment and change. This is mostly because digital transformation occurs in a dynamic and ever-changing environment that is susceptible to a wide range of events and necessitates a comprehensive understanding of the ecosystem in which it takes place. The phenomena of digital transformation have been the subject of much empirical research, with researchers looking at changes in organizational strategies (Matt, et al, 2016), processes (Baiyere, A. et al, 2020), structures, and decision-making organizing culture and industry transitions (Bilgeri, D. et al, 2017). Digital transformation, however, is not a phenomenon that influences things at these various levels without also being impacted by them concurrently. As a result, the factors influencing digital change and those being affected by it interact intricately.

In this piece, we provide context for our comprehension of digital transformation. The study aimed to study one of the major changes in the digital transformation industry, which is undergoing a profound transformation of the banking system, including the fact that digitization provides new opportunities for banks to put the customer at the heart of the development process. It appears that the new techniques in the market to disrupt the value chain of retail services are also aimed at identifying the digital transformation in the banking sector and neutralizing what banks and Tech fin companies are developing in the market. It also indicated that it would not be the technology itself that would disrupt the banking industry. The results of the study concluded that stability in future competition would depend to a large

extent on the decisions taken by banks today and that the events of the past few years showed the price they might have to pay for strategic decisions. Bad or through similar business models, the banking vagaries of individuals, given that the problem of innovation is predictable in terms of timing, size, and consequences, the future of banks is also expected to be shaped strongly by digital and non-traditional competitors.

Technology in support of digital transformation:

To remain viable in the cutthroat market, companies are expanding their conventional business models into digitalized, technology-enabled models. Businesses have already sensed that they must go on a digital transformation path to survive. To effectively capitalize on this paradigm, shift toward digital transformation, however, particular competencies at the micro foundation level are required. Achieving success in the digital transformation process requires a certain set of digital skills and competencies at the micro-fundamental level. Employee psychological underpinnings should support digitization to successfully obtain a competitive advantage. There isn't much research that explores people's abilities and skills at the micro-foundational level. Given this context,

the purpose of this study is to examine how individual capabilities, such as leadership, and technological capabilities, such as an AI-enabled CRM system, play a part in the process of digitalization at the micro-fundamental level (Chatterjee, S et al 2022).

Banking performance and growth

Over the past forty years, the world has consistently seen economic expansion, which has been greatly aided by the financial industry. Researchers have discovered both direct and indirect ways that a functional financial system affects a nation's economic health. But whether quantity or quality matters more for the finance-growth nexus is still up for debate in a bank-based economy (Koetter & Wedow, 2010). Numerous academic works contend that the scale of the banking industry is important for ensuring economic sustainability (Bougatef, et al 2017). Nonetheless, there isn't much talk about how banking for the finance-growth nexus is still up

for debate in a bank-based economy. Nonetheless, there isn't much talk about how banking service quality contributes to the expansion. (Barry & Tac-neng 2014) investigated the relationship between institutional quality and governance and the performance of microfinance institutions (MFIs) in Sub-Saharan Africa and discovered a strong positive correlation. However, there has been evidence of their potential impact on financial performance in the recent macro-level discussion of institutional quality. However, because of its complexity and the lack of a uniform dataset on institutional quality, the empirical evidence has been restricted. Consequently, using a fresh and updated dataset, this study aims to close the gap and empirically analyze the relationship between institutional quality and banking performance.

Institutional quality and growth

The political agenda may be distorted by a lack of openness or a high degree of corruption through unlawful influence on decision-making. Officeholders received bribes and favors in exchange for their covert corruption, which could lead to disproportionate importance (Shleifer & Vishny, 1993). For example, the concealment of these illicit activities may result in policy changes and significant funding transfers from important development initiatives (health and education, for example) to the defense industry or any other similar entity, impeding economic expansion. The president of the World Bank has listed corruption as a major obstacle to the growth of developing and emerging economies. possesses proof to back up this claim. After seeing the vicious cycle of political unrest that impedes nations' capacity to reach their full economic potential, scholars and politicians have recently turned their prodigal attention from corruption to political instability. For example, experienced many months of political unrest in 2006, which affected its financial system and hindered economic expansion. The Arab Spring-related political unrest in the Middle East in 2011 shocked the whole region. As of right now, Syria's GDP has fallen short of its pre-conflict level by half since 2010, while Yemen's GDP is thought to have declined by 25% to 35%. 2014 saw political unrest in Ukraine as well. The two main recent developments that have caused economic anxiety globally are the trade dispute

between China and the US and the escalation in Indo-Pak. These occurrences raise (Kumar, A et al 2022).

Analysis and discussion of results

1-Study tool:

Pilot study: a pilot study has been done on a sample of 50 respondents to verify the accuracy of the measure, the result is shown in Tables 1,2,3,4.

Validity

In the research, reliance was placed on internal consistency validity to verify the accuracy of the measure. To assess the internal consistency validity of the scales (Digital Transformation, Organizational Performance), they were applied to a pilot sample of 50 respondents. Following the observation of the results, they were processed. The Pearson correlation coefficient was calculated between the factors and the total scale score, the results are shown in the table 1, and 2.

Table 1: Digital Transformation

Factors	No of Items	R	Sig
Human cadres	6	0.802**	<.001
Infrastructure	8	0.877**	<.001
Big-Data Analysis	4	0.804**	<.001

Table 2: Organizational Performance

Factors	No of Items	R	Sig
Customer Experience	6	0.854**	<.001
Functional performance	6	0.877**	<.001

The previous tables reveal that the correlation coefficient values of the scale dimensions are statistically significant at the 0.01 level of significance, indicating the homogeneity of the scales and allowing their use in the current research.

Reliability

Reliability coefficients for the scales (Digital Transformation, Organizational Performance) were calculated using Cronbach's Alpha coefficient.

Table 3: Digital Transformation

Factors	No of Items	Cronbach's Alpha
Human cadres	6	0.891
Infrastructure	8	0.902
Big-Data Analysis	4	0.880
All	18	0.886

Table 4: Organizational Performance

Factors	No of Items	Cronbach's Alpha
Customer Experience	6	0.901
Functional performance	6	0.887
All	12	0.886

The previous tables indicate that Cronbach's Alpha reliability coefficients are high, confirming the stability of the scales and their suitability for use in the current research.

Sample of study:

Table 5: sample of a study

Gender	Frequency	Percent
Male	152	43.43

The Impact of Digital Transformation on Organizational Performance in the Banking Sector in Egypt with Application on the Agricultural Bank of Egypt"

Gender	Frequency	Percent
Female	198	56.57
Total	350	100
Age	Frequency	Percent
-30	108	30.86
31-50	162	46.28
51-	80	22.86
Total	350	100
Educational Qualifications	Frequency	Percent
Low Educational Qualifications	123	35.14
Medium Educational Qualifications	147	42.00
High Educational Qualifications	80	22.86
Total	350	100

Source of the table The researchers

Table 5 contains demographic information about the study sample, providing frequency and percentage breakdowns for various demographic variables, including gender, age, and educational qualifications. Here's a detailed explanation:

Gender: The study sample consists of 350 participants in total. Out of these, 152 participants (43.43%) are male, and 198 participants (56.57%) are female.

Age: The age distribution of the participants is as follows:

- 108 participants (30.86%) are 30 years old or younger.
- 162 participants (46.28%) are between 31-50 years old.
- 80 participants (22.86%) are 51 years old or above.

Educational Qualifications: The participants are categorized into three groups based on their educational qualifications:

- 123 participants (35.14%) have low educational qualifications.
- 147 participants (42.00%) have medium educational qualifications.
- 80 participants (22.86%) have high educational qualifications.

In summary, the study sample comprises 350 participants, with a slightly higher proportion of females (56.57%) compared to males (43.43%). The age distribution shows that the largest group (46.28%) is between 31-50 years old, followed by those 30 years old or younger (30.86%), and those 51 years old or above (22.86%). Regarding educational qualifications, the majority of participants have either medium (42.00%) or low (35.14%) educational qualifications, while a smaller proportion (22.86%) has high educational qualifications.

This demographic information provides insights into the characteristics of the study sample, which can be useful for interpreting the research findings and understanding the context in which the study was conducted.

Meta-statistics of study variables:

Metadata includes Chi-square values for both digital transformation and its variables (human cadres, infrastructure, big data analytics) and Organizational performance and its variables (customer experience, functional performance).

The results are shown in Table 6-1,6-2,6-3,7-1,7-2.

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. Digital Transformation

1.1. Human cadres

Table 6-1 Chi-square

Item	Strongly Agree		Agree		Natural		Disagree		Strongly Disagree		Rank	X ²	Sig
	F	%	F	%	F	%	F	%	F	%			
1	96	27.4	166	47.4	88	25.1	-	-	-	-	2	285.943	<.001
2	99	28.3	166	47.4	85	24.3	-	-	-	-	1	286.886	<.001
3	85	24.3	187	53.4	78	22.3	-	-	-	-	6	339.686	<.001
4	89	25.4	168	48.0	93	26.6	-	-	-	-	4	289.914	<.001
5	92	26.3	189	54.0	69	19.7	-	-	-	-	3	349.229	<.001
6	86	24.6	189	54.0	75	21.4	-	-	-	-	5	346.314	<.001

(F: Frequency and %: Percent), df=4

1.2. Infrastructure

Table 6-2 Chi-square

Item	Strongly Agree		Agree		Natural		Disagree		Strongly Disagree		Rank	X ²	Sig
	F	%	F	%	F	%	F	%	F	%			
1	97	27.7	163	46.6	90	25.7	-	-	-	-	5	279.686	<.001
2	98	28.0	178	50.9	74	21.1	-	-	-	-	3	318.057	<.001
3	95	27.1	178	50.9	77	22.0	-	-	-	-	6	316.257	<.001
4	101	28.9	172	49.1	77	22.0	-	-	-	-	2	303.057	<.001
5	88	25.1	188	53.7	74	21.1	-	-	-	-	8	343.771	<.001
6	94	26.9	170	48.6	86	24.6	-	-	-	-	7	294.743	<.001
7	103	29.4	168	48.0	79	22.6	-	-	-	-	1	293.914	<.001
8	98	28.0	167	47.7	85	24.3	-	-	-	-	4	288.829	<.001

(F: Frequency and %: Percent), df=4

1.3. Big-Data Analysis

Table 6-3 Chi-square

Item	Strongly Agree		Agree		Natural		Disagree		Strongly Disagree		Rank	X ²	Sig
	F	%	F	%	F	%	F	%	F	%			
1	96	27.4	171	48.9	83	23.7	-	-	-	-	1	297.800	<.001
2	93	26.6	186	53.1	71	20.3	-	-	-	-	2	339.800	<.001
3	73	20.9	198	56.6	79	22.6	-	-	-	-	4	375.343	<.001
4	85	24.3	182	52.0	83	23.7	-	-	-	-	3	324.829	<.001

(F: Frequency and %: Percent), df=4

2. Organizational Performance

2.1. Customer Experience

Table 7-1 Chi-square

Item	Strongly Agree		Agree		Natural		Disagree		Strongly Disagree		Rank	X ²	Sig
	F	%	F	%	F	%	F	%	F	%			
1	86	24.6	186	53.1	78	22.3	-	-	-	-	5	336.800	<.001
2	86	24.6	171	48.9	93	26.6	-	-	-	-	6	296.943	<.001
3	92	26.3	173	49.4	85	24.3	-	-	-	-	2	301.686	<.001
4	87	24.9	174	49.7	89	25.4	-	-	-	-	4	303.800	<.001
5	90	25.7	168	48.0	92	26.3	-	-	-	-	3	289.829	<.001
6	102	29.1	163	46.6	85	24.3	-	-	-	-	1	281.400	<.001

(F: Frequency and %: Percent), df=4

2.2. Functional performance

Table 7-2 Chi-square

Item	Strongly Agree		Agree		Natural		Disagree		Strongly Disagree		Rank	X ²	Sig
	F	%	F	%	F	%	F	%	F	%			
1	91	26.0	174	49.7	85	24.3	-	-	-	-	1	304.029	<.001
2	90	25.7	176	50.3	84	24.0	-	-	-	-	2	309.029	<.001
3	80	22.9	182	52.0	88	25.1	-	-	-	-	6	325.257	<.001
4	85	24.3	180	51.4	85	24.3	-	-	-	-	4	319.286	<.001
5	84	24.0	174	49.7	92	26.3	-	-	-	-	5	304.229	<.001
6	87	24.9	172	49.1	91	26.0	-	-	-	-	3	299.057	<.001

(F: Frequency and %: Percent), df=4

These Tables show statistical analysis results related to a study on digital transformation and organizational performance. The analysis includes descriptive statistics

1-Digital Transformation:

1.1. Human Cadres: This section presents chi-square test results for various items related to human cadres in digital transformation. The results show that all items have a significant association with the "Agree" response (p-value < 0.001). The items are ranked based on the chi-square values.

1.2. Infrastructure: This section presents chi-square test results for various items related to infrastructure in digital transformation. The results show that all items have a significant association with the "Agree" response (p-value < 0.001). The items are ranked based on the chi-square values.

1.3. Big-Data Analysis: This section presents chi-square test results for various items related to big data analysis in digital transformation. The results show that all items have a significant

association with the "Agree" response (p -value < 0.001). The items are ranked based on the chi-square values.

2- Organizational Performance:

2.1. Customer Experience: This section presents chi-square test results for various items related to customer experience in organizational performance. The results show that all items have a significant association with the "Agree" response (p -value < 0.001). The items are ranked based on the chi-square values.

2.2. Functional Performance: This section presents chi-square test results for various items related to functional performance in organizational performance. The results show that all items have a significant association with the "Agree" response (p -value < 0.001). The items are ranked based on the chi-square values.

Testing the study Hypotheses:

1-First Hypotheses

There is a correlational relationship between Digital Transformation with their factors and Organizational Performance with their factors.

Table 8 Pearson correlation coefficients

Digital Transformation		Organizational Performance		
		Customer Experience	Functional performance	ALL
Human cadres	Pearson	.824**	.844**	.868**
	Sig	<0.001	<0.001	<0.001
Infrastructure	Pearson	.807**	.804**	.838**
	Sig	<0.001	<0.001	<0.001

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Digital Transformation		Organizational Performance		
		Customer Experience	Functional performance	ALL
Big-Data Analysis	Pearson	.721**	.751**	.766**
	Sig	<0.001	<0.001	<0.001
ALL	Pearson	.847**	.860**	.888**
	Sig	<0.001	<0.001	<0.001

This hypothesis tests the correlational relationship between digital transformation (with its factors) and organizational performance (with its factors). The Pearson correlation coefficients show a strong positive correlation between all factors of digital transformation and organizational performance ($r > 0.7$, $p\text{-value} < 0.001$).

2. Second Hypothesis

There are no significant differences in the levels of (Digital Transformation and Organizational Performance) according to the Gender variable.

Table 9 t-test

Factor	Gender	N	Mean	STD	DF	T	Sig
Digital Transformation	Female	198	66.37	7.075	348	-24.222	<0.001
	Male	152	80.79	2.213			
Organizational Performance	Female	198	43.45	4.281	348	-28.789	<0.001

This hypothesis tests for significant differences in the levels of digital transformation and organizational performance according to the gender variable. The t-test results indicate that there are statistically significant differences in favor of males for both digital transformation and organizational performance ($p\text{-value} < 0.001$).

3. Third Hypothesis

There is no significant variation in the levels of Digital Transformation, Organizational Performance) according to the Age variable.

Table 10 Descriptives

Variable	Age	N	Mean	Std. Deviation
Digital Transformation	-30	108	75.02	8.446
	31-50	162	80.75	2.270
	51-	80	63.05	2.071
Organizational Performance	-30	108	49.09	6.210
	31-50	162	54.01	1.665
	51-	80	42.04	1.600

Table 11 One-Way ANOVA

Factor	Variance Type	Sum of Squares	DF	Mean Square	F	Sig.
Digital Transformation	Between Groups	16118.476	2	8059.238	226.429	<0.001
	Within Groups	12350.713	347	35.593		
	Total	28469.189	349			
Organizational Performance	Between Groups	6922.888	2	3461.444	179.228	<0.001
	Within Groups	6701.629	347	19.313		
	Total	13624.517	349			

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Table 12 LSD

Variable	Age		Mean Difference (I-J)	Sig.
	(I)	(J)		
Digital Transformation	-30	31-50	-5.730*	<0.001
		51-	11.970*	<0.001
	31-50	51-	17.700*	<0.001
Organizational Performance	-30	31-50	-4.920*	<0.001
		51-	7.050*	<0.001
	31-50	51-	11.970*	<0.001

This hypothesis tests for significant variations in the levels of digital transformation and organizational performance according to the age variable. The one-way ANOVA results show statistically significant differences for both variables (p -value < 0.001). The LSD post-hoc test reveals that the differences are in favor of the middle age group, followed by the younger age group, and then the older age group.

4. Fourth Hypothesis

There is no significant variation in the levels of Digital Transformation, Organizational Performance) according to the Educational Qualifications variable.

Table 13 Descriptives

Variable	Educational Qualifications	N	Mean	Std. Deviation
Digital Transformation	Low	123	63.05	2.127
	Medium	147	76.24	7.865
	High	80	80.75	2.270
Organizational	Low	123	42.03	1.684

Variable	Educational Qualifications	N	Mean	Std. Deviation
Performance	Medium	147	49.81	6.029
	High	80	54.01	1.665

Table 14 One-Way ANOVA

Factor	Variance Type	Sum of Squares	DF	Mean Square	F	Sig.
Digital Transformation	Between Groups	18479.815	2	9239.907	320.966	<0.001
	Within Groups	9989.374	347	28.788		
	Total	28469.189	349			
Organizational Performance	Between Groups	7752.993	2	3876.497	229.096	<0.001
	Within Groups	5871.524	347	16.921		
	Total	13624.517	349			

Table 15 LSD

Variable	Educational Qualifications		Mean Difference (I-J)	Sig.
	(I)	(J)		
Digital Transformation	Low	Medium	-13.189*	<0.001
		High	-17.701*	<0.001
	Medium	High	-4.512*	<0.001
Organizational Performance	Low	Medium	-7.777*	<0.001
		High	-11.980*	<0.001
	Medium	High	-4.203*	<0.001

This hypothesis tests for significant variations in the levels of digital transformation and organizational performance according to the educational qualifications variable. The one-way ANOVA results show statistically significant differences for both variables (p -value < 0.001). The LSD post-hoc test reveals that the differences are in favor of the higher educational qualification group, followed by the medium educational qualification group, and then the lower educational qualification group.

5. Fifth Hypothesis

The impact of the independent variables (Digital Transformation) in explaining the variance in the dependent variable (Organizational Performance) varies according to the regression coefficients.

Table 16 Model Summary

Model	R	R ²	Adjusted R ²	Std. Error
	0.888	0.789	0.788	2.874

Table 17 Multiple Linear Regression

Model	Coefficients			F	Sig-F
	β	T	Sig-T		
Constant	3.402	2.729	.007	1301.893	<0.001
Digital Transformation	0.615	36.082	<0.001		

$$Y = 0.615X + 3.402$$

Where:

- Y ; is the Organizational Performance.
- X ; is the Digital Transformation.

This hypothesis examines the impact of the independent variables (digital transformation) in explaining the variance in the dependent variable (organizational performance) using

regression analysis. The multiple linear regression results show that digital transformation significantly predicts organizational performance ($\beta = 0.615$, p -value < 0.001), and the regression model explains 78.8% of the variance in organizational performance (Adjusted $R^2 = 0.788$).

The tables contain comprehensive statistical analysis results, including descriptive statistics, hypothesis testing, correlation analysis, and regression analysis, related to the study's variables of digital transformation and organizational performance.

Results and recommendations

Results

The study reached several conclusions based on the outcomes of the data analysis, the most significant of which are as follows:

1-First hypothesis result shows a strong positive correlation between digital transformation factors (human cadres, infrastructure, big data analysis) and organizational performance factors (customer experience, functional performance). All Pearson correlation coefficients were above 0.7 with p -values less than 0.001, indicating statistically significant strong positive correlations.

2-Second hypothesis results rejected the null hypothesis, revealing significant differences in the levels of digital transformation and organizational performance based on gender. T-test results showed significantly higher scores for males compared to females in both variables (p -value < 0.001).

3-Third hypothesis results rejected the null hypothesis, indicating significant variations in the levels of digital transformation and organizational performance across age groups. One-way ANOVA results were statistically significant (p -value < 0.001). Post-hoc LSD tests revealed the differences favored the middle age group (31-50 years), followed by the younger group (30 years or below), and then the older group (51 years and above).

4-Fourth hypothesis results rejected the null hypothesis, demonstrating significant variations in the levels of digital transformation and organizational performance based on educational qualifications. One-way ANOVA results were statistically significant (p -value < 0.001). Post-hoc LSD tests showed the differences favored the higher educational qualification group, followed by the medium group, and then the lower group.

5-Fifth hypothesis results supported the hypothesis, indicating that digital transformation significantly impacted and predicted organizational performance. Multiple linear regression analysis showed digital transformation as a significant predictor ($\beta = 0.615$, p -value < 0.001), with the model explaining 78.8% of the variance in organizational performance (Adjusted $R^2 = 0.788$).

6- the hypothesis testing results provided evidence of strong correlations between digital transformation and organizational performance, as well as significant differences and variations in these variables based on gender, age, and educational qualifications. Additionally, digital transformation was found to be a significant predictor of organizational performance in the regression model.

7-Digital transformation helps banks improve their financial performance by employing new digital technologies to make financial services more accessible to customers as quickly as possible and at a lower cost.

8- The implementation of regulatory technology in banking institutions leads to enhanced operational reporting through the standardization of organizational procedures and the promotion of transparency and consistency.

9- Regulatory technology implementation in banks improves product design and organizational understanding and culture.

10-- Banks employ financial and regulatory technology to grow products and profitability, as well as to promote productivity, efficiency, and operation effectiveness.

11-Digital Transformation is used by banks to support employee motivation and training, job design, organization, recruiting of qualified workers, and enhanced operational performance.

Recommendations

- 1- The need to take care to develop and support flexible digital infrastructure through enhanced readiness Information security at the Egyptian Agricultural Bank.
- 2- Support the proper development of artificial intelligence through the provision of an appropriate regulatory environment.
- 3- stimulates trust and educates banks, government, and society about technology.
- 4- Bridging the existing digital divide and supporting innovative methods of digital transformation through a decade.
- 5- Training courses for human cadres so that they can use technology and take advantage of technology to make it easier to deal with clients.
- 6- Future studies in digital transformation to include more comprehensive variables than variables.
- 7- Future studies in other Egyptian banks on the impact of digital transformation on job performance.

Conclusion

The use of Digital Transformation could greatly enhance Egyptian banks' operational effectiveness. However, for implementation to be successful, the associated possibilities and challenges need to be carefully considered. By tackling workforce shortages, cybersecurity threats, regulatory compliance, and change resistance, banks can leverage these technologies to improve efficiency, customer satisfaction, financial inclusion, and cost reduction. The study's objective was to demonstrate how banks' operational performance could be improved by utilizing financial and regulatory technologies. Digital Transformation is a new profession that combines financial understanding with technological and organizational skills to deliver financial services to organizations and improve operational performance. The expanding use of

technical applications and solutions in the fields of services, financial, and operational endeavors to enhance and expand them for the good of all stakeholders.

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The Questionnaire:

Human cadres.

1. The Bank has highly qualified human resources.
2. The Bank has human cadres with sufficient experience using and dealing with information technology applications.
3. Bank personnel have the capacity for standardized participatory applications.
4. Development of the digital skills of workers required to cope with the new working environment.
5. Periodic training courses are conducted to keep pace with any development in the programmers and applications used.
6. Experts are engaged to update program issuances and applications used.

Infrastructure

1. The Egyptian information infrastructure project was launched to link the databases with each other.
2. The Bank has a strong infrastructure that is an effective basis for digital transformation.
3. The Bank has automated cashiers, which are distributed sufficiently across all branches.
4. The Bank has electronic surveillance cameras to enhance bank security.
5. Tebek ensures that the Internet is not interrupted.
6. The Bank has digital identity systems that provide strong security to protect the privacy of banking transactions.
7. The Bank has advanced applications that allow easy and easy electronic payments.
The Bank has a large number of electronic bank cards.

Analysis of big data

1. The Bank has sophisticated databases containing a vast amount of data.
2. Databases shall maintain the confidentiality of available data to give specific validity to each section and each staff member.
3. The Bank takes into account the preservation of bank secrecy data in the design of its applications and programs.
4. Databases allow the various service centers to be linked and digital services to be made available to citizens.

Customer experience.

1. The use of information systems and digital transformation has contributed to the improvement and upgrading of the quality of services provided to bank clients.
2. Information systems have contributed to the timely delivery of services and rapid response to the provision of banking services.
3. Advanced programs have contributed to the electronic delivery of the service and thus to the improvement of how the banking service is conducted.
4. Bank services are provided strictly and without error.
5. The systems and applications used provide information to enable management to continuously improve its services provided.
6. Advanced applications contributed to the acceleration of the banking client's payment process.

Organizational performance

1. The use of electronic systems and applications improves the efficiency of communication between management and personnel in different divisions.
2. The use of electronic systems leads to coordination and effective cooperation between different functions within the divisions.

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3. Advanced applications have contributed to more efficient management of the Bank's financial and operational operations.
4. The reliance on technology has contributed to a reduction in the time required to generate and prepare financial and non-financial reports.
5. The use of technology increases client satisfaction.
6. The use of electronic systems results in clients gaining access to financial services at great speed and a reasonable cost.