Exploring the Relationship between Digital Transformation and Effective Strategic Decision-making in the Egyptian Banking Sector

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Abstract:

This research investigates how digital transformation influences strategic decision-making within the Egyptian banking industry. Using a quantitative method, the study analyzes survey responses from senior managers and executives. Findings indicate a strong positive correlation between digital transformation and the effectiveness of strategic decision-making. Digital transformation enhances the alignment of organizational goals, stakeholder engagement, data analytics, communication efficiency, and the timeliness of decisions. The study highlights the critical role of adopting digital technologies and incorporating emerging tech to reinforce strategic decision-making in banks. The study contributes to the existing body of knowledge by providing empirical evidence on this relationship within the Egyptian context. It underscores the necessity of investing in digital tools and encouraging stakeholder participation to meet strategic goals and gain a competitive edge.

Keywords: Digital Transformation; Strategic Decision-Making; Egyptian Banking Sector.

1- Introduction

Since the middle of the 1980s, Egypt has invested in the infrastructure of information and communication technologies. A national project was started by the government to deal with infrastructure, debt, and illiteracy. Originally established in 1985 as a cabinet-affiliated think tank, the Information and Decision Support Centre, or IDSC. Most national activities using increasingly sophisticated information and communication technologies (ICTs) promote socioeconomic development (Kamel, 2021). ICT has contributed significantly to Egypt's economy during the past ten years. The "Digital Egypt" plan was launched in 2017 to boost human capital capacity and invest in MSMEs. Egypt ranked 72nd in 2020 and 82nd in 2019 in the UN Global Knowledge Index. Information and communication technology and technical and vocational training advances are credited with these achievements (UNDP, 2020).

Timeline of the ICT Sector	Year
Open Door Policy	1974
Economic Reform Program	1985
Information Project Cabinet of Ministers (IPCOM)	1985
Information and Decision Support Program (IDSC)	1985
National Information and Administrative Reform Initiative	1989
Egypt Information Highway	1994
Ministry of Communications and Information Technology (MCIT)	1999
National Information and Communications Technology Master Plan	2000
Egypt Information Society Initiative (EISI)	2003
Extending Information and Communication Technology to Public Services	2004

Information Technology Industry Development Agency (ITIDA)	2004
Information Society	2005
ICT Strategy (2007-2010)	2007
ICT Strategy (2013-2017)	2013
The Cloud Strategy	2014
Digital Egypt: The 2030 ICT Strategy	2017
National AI Strategy	2019

Table (1): The evolution of the ICT sector in Egypt (Kamel, 2021)

Table (1) demonstrates how much the ICT sector in Egypt has advanced during the last fifty years. For instance, it started in 1974 when the open-door policy was implemented, which made it easier for foreign investors and private companies to enter the ICT industry and allowed multinationals to do business there. Thus, local companies that focused on the ICT sector were founded and were essential in growing the sector.

2. Literature Review and Hypothesis development

Organizations increasingly realize how important digital transformation is to enabling wise strategic decision-making. Therefore, the meeting point of these two domains has also grown to be a crucial focus of modern management research. The strategic benefit that digital technologies can offer is the reason they are being studied so much. Considering how consumer behavior is changing, Bharadwaj et al. (2013a) address the need for a "digital business strategy that is digitally grounded, strategically forward-thinking and operationally responsive."

This finding aligns with the statement made by Westerman et al. (2014) that data analytics can make decision-making better, business operations run smoother, and influence a culture within an organization. Several other studies assert that it provides a competitive edge, as in McAfee and Brynjolfsson (2017). In the readings by Ross et al. (2019) and Lacity et al. (2020b), the authors dig deeper into the difficulty of Digital Transformation and the essential matter of competent leadership.

2.1 Digital Transformation (DT) and Effective Decision-Making

Technology developments including hyper-connectivity, cloud computing, artificial intelligence, and machine learning are increasing the level of competition in the business environment. Businesses that do not embrace digital transformation risk falling behind and becoming outdated as their rivals catch up with them very fast. Still, using technology is only one aspect of digital transformation. A wide revolution, affects behavior, culture, and processes (Daugherty & Rigby, 2023; Yoo et al., 2010; Bharadwaj et al., 2013a).

It takes a corporate culture that promotes flexibility, experimentation, lifelong learning, creativity, and taking calculated risks to keep ahead in the quickly evolving digital landscape. However, there are many advantages to using digital tools as well. This holds especially true for making strategic decisions. With reference to big data analytics, it is useful. As

such, they offer the chance and means to provide a deeper understanding of consumer needs, market dynamics sector trends, and operational outcomes, enabling companies to make decisions based on data (Gibson & Joubert, 2018; Chen et al., 2012).

Machine learning (ML) and artificial intelligence (AI) algorithms simplify repetitive tasks, examine complex data sets, and generate prediction models, so enabling resource allocation and strategic planning (McAfee & Brynjolfsson, 2019). Furthermore, the easy sharing of information and communication made possible by real-time collaboration platforms encourages faster and better-informed decision-making inside companies (Westerman et al., 2014).

One developing technology that may enhance security and openness in decision-making procedures is blockchain (Catalini & Gans, 2016). Promising scenario simulation and strategic decision evaluation prior to real-world implementation is augmented reality. Tao and Qi, 2017.

Using digital tools could be challenging because of problems with data integrity, cybersecurity, ethical issues with artificial intelligence, data privacy, and organizational reluctance to new technology. Notwithstanding these challenges, successful companies give the development of a culture based on data a top priority. This entails pushing for the acquisition of data understanding and application abilities as well as the promotion of a culture in which decisions are made at all organizational levels

(Lee et al., 2015a). Digital leadership abilities must be developed, as does competence in overseeing digital transformation and arriving at conclusions based on data (Westerman et al., 2014). To fully leverage the possibilities of DT, the workforce must also improve their proficiency in digital literacy and relevant technologies (Bharadwaj et al., 2013b). More research is needed for the banking industry to understand how digital adoption affects strategic decision-making in digital transformation. Consequently, the subsequent hypotheses were formulated:

H0: ***There is no significant relationship between Digital Transformation and Effective Strategic Decision-Making in the Egyptian banking sector.***

H01: ***There is no significant relationship between Digital Adoption and Effective Strategic Decision-Making in the Egyptian banking sector.***

H02: ***There is no significant relationship between integrating Emerging Technologies and Effective Strategic Decision-Making in the Egyptian banking sector.***

2.2 *Digital Transformation and Effective Strategic Decision-Making Dimensions*

Organizational strategies are among the closely affected by the Digital Revolution, making it imperative for businesses to rethink the way they make strategic decisions in light of the major upheavals that have taken place in the business scenario.

This research aims to extend our understanding of the effects of digital transformation on strategic decision-making effectiveness by investigating to what extent it influences five dimensions: alignment with organizational goals, stakeholder involvement, data usage, communication effectiveness, and decision timelines:

2.2.1 Alignment with organizational goals

DT has become a strategic enabler for companies to reach their long-term goals. Digital solutions and dashboards make real-time progress data available to leaders and alert them if things are happening differently than planned (Bharadwaj et al., 2013a). Insights derived inform preference for resource allocation and strategic investments. For this to work, one must ensure that the projects stick to their priorities lest they end up with money gone (Khandelwal et al., 2020). In the fast-evolving realm of modern business, digital technologies are a must-have for any company today. They provide companies a flexible foundation to easily adapt to fast-changing market conditions (McAfee & Brynjolfsson, 2019). According to Chen et al. (2012) reports that digital transformations lead to data-driven experimentation as well as product development by making the innovation effort market-adaptable and customer-liking. This gives companies an opportunity to use the data in order to learn and explore new ideas — and gives them a competitive edge in the development of products and services that fulfill the desires

of their customer demographic. The following hypothesis can be formulated with the information above:

H03: There is no significant relationship between Digital Transformation and Alignment with organizational goals in the Egyptian banking sector.

2.2.2. Involvement of Key Stakeholders

Making competent and effective strategic decisions requires interaction with stakeholders. By use of digital communities, feedback platforms, and social media tools, digital transformation (DT) enables businesses to actively involve employees, suppliers, and customers (Gibson & Joubert, 2018).

Working along with different people and organizations produces creative solutions and better outcomes. Enabling people to voice their opinions will help to create a thorough plan that meets the needs of every person (Füller et al., 2017). The efficient operation of an organization depends on the effective handling of the complaints expressed by stakeholders through digital channels. Early discovery of these problems can help to prevent operational interruptions and reduce any damage to the company's reputation (Sengupta et al., 2015). Companies can create a precise framework that lists important stakeholders, their interests, and the best ways to engage them in decision-making (Gibson & Joubert, 2018). Among the strategies used by the company are the deployment of platforms that enable cooperative decision-making, information sharing, and real-time

communication. Furthermore, using data analytics, these platforms enable stakeholders to make wise decisions by providing them with insightful information. The literature that is provided allows us to develop the following hypothesis: ***H04: There is no significant relationship between Digital Transformation and the Involvement of key stakeholders in the Egyptian banking sector.***

2.2.3. Use of Data and Analytics

Data, the Secret Weapon for the Digital Age, the Gaming Industry, and Most Business Decisions- Data has never been so accessible and practical as it is nowadays, that makes it the number one weapon for strategic thinking. These highly sophisticated analytics platforms generate proactive and insightful views of customer behavior, market trends as well as operational data. This helps to decide where to allocate resources and what products to focus on (Chen et al., 2012). Data has never been collected and protected in an easier way than now with the arrival of digital transformation. By utilizing cloud-based platforms and IoT sensors, rapid data acquisition and data sources, it is possible to analyze a large amount of data across different data sources (internal and external), which helps us to have a robust insight into the environment. Chen et al. (2012) suggest insights can assist businesses across the board in better aligning their operations with the strategic imperatives that drive growth, improve efficiencies and lower costs, and enhance the customer experience. Method This

study examined how artificial intelligence (AI) and machine learning algorithms analyze data and discover hidden patterns better than humans and more accurately predict future outcomes (Khandelwal et al., 2020). Dashboards or data visualization tools show different layers of information in a user-friendly way for decision-makers at all levels allowing simplified access to complex data and understanding it, enabling informed decision-making across the process (Lee et al., 2015b). The literature suggests the following hypothesis.

H05: ***There is no significant relationship between Digital Transformation and the use of data and analytics in the Egyptian banking sector.***

2.2.4. The Effectiveness of Communication Channels

Digital transformation (DT) extends beyond conventional communication channels, facilitating the instantaneous exchange of information and cooperation across different organizational divisions. Slack and Microsoft Teams, digital platforms, enhance communication across different departments and leaders, resulting in quicker and more flexible decision-making (Westerman et al., 2014). Unified Communication Platforms: Collaboration technologies such as Slack and Microsoft Teams facilitate the dismantling of barriers between departments, allowing for the immediate exchange of information, conversations, and collective decision-making throughout the

entire organization (Westerman et al., 2014). Through digital channels, it is possible to customize messages and information according to each stakeholder's specific requirements and preferences. Digital platforms enable transparent communication and feedback processes, enabling stakeholders to express problems, suggest ideas, and participate in decision-making. The following hypotheses have been constructed:

H06: ***There is no significant relationship between Digital Transformation and the Effectiveness of communication channels in the Egyptian banking sector.***

2.2.5. The Timeliness of strategic decision-making

We live in a digital world and this digital world is very dynamic, so we have to make decisions faster and more flexible in the world of digital. Digital transformation supports organizations to adapt to market dynamics, competitor movements, and changing customer expectations quickly which makes them adaptive and reactive (Catalini & Gans, 2016). Leaders with access to real-time data and insights can respond to marketplace shifts, customer feedback, and competitive moves with agility and intelligence.

Automating repetitive processes, with the help of AI and robotic process automation, allows decision-makers to spend their time on more meaningful tasks. It helps them focus on strategic matters and thereby reduces the decision-making cycle significantly (Erl & Kennedy, 2019). Supports interaction

between groups for geographically separated teams; digital platforms and communication tools make it easy to work and share ideas together, allowing everyone to be part of the decision-making. This, in turn, leads to the following hypothesis:

H07: There is no significant relationship between Digital Transformation and the Timeliness of strategic decision-making in the Egyptian banking sector.

3- Research problem:

The Standard & Poor's Global Financial Literacy Survey disclosed that a mere 27% of persons in Egypt had financial acumen in 2014. According to the 2017 World Bank's Global Findex database, cash remains the predominant payment method in Egypt, with 70% of the adult population unable to access the formal finance system. The use of digital financial services is subject to a substantial disparity between genders, with a mere 27% of women aged 15 and above utilizing such accounts, in contrast to 39% of men. The database also reveals that most wage earners in Egypt, specifically those employed by micro, small, and medium-sized merchants, receive their wages in paper-based payments rather than electronic ones. This practice diminishes their preference for using electronic payments for retail transactions. In addition, the rate of electronic payment adoption among merchants is rather low. Specifically, just 18% of retail payments were conducted electronically at micro, small, and medium-sized businesses 2016 (World Bank, 2017).

The financial services sector in Egypt encounters substantial obstacles in terms of extensive digitalization and financial inclusivity. Based on a 2017 survey, over 70% of adults in Egypt lack access to a transaction account, hindering their ability to engage in the digital economy (World Bank, 2017). In 2016, cash remained the predominant payment method, accounting for 91% of retail purchases, according to Amazon Payment Services. Among Egyptian adults, the utilization of digital payment systems is significantly limited, with a mere 6% having engaged in digital payment transactions within the previous year (World Bank, 2019). These issues arise from a predilection for cash transactions, a lack of confidence in the financial industry, and small enterprises' limited use of electronic payment methods. Bill payment aggregators such as Fawry and Masary heavily depend on cash transactions, strengthening the prevailing cash-oriented culture. The predominant use of cash in international remittance services challenges achieving financial inclusion. While the number of credit transfers has risen, direct debit services see comparatively low utilization. The issuance of electronic money is regulated by the Central Bank of Egypt (CBE), with banks and partnerships launching mobile wallets. The national prepaid card scheme, Meeza Card, was implemented in 2019 to encourage the use of cashless payments (The World Bank Group, 2020).

International pressure is increasing on the banking sector to undertake digital transformation. However, the financial services

sector in Egypt faces serious challenges in digitizing and driving digital technologies. The most challenging obstacle, of course, remains the persistently low levels of financial literacy among people, which are a bottleneck to the wider adoption of digital financial services in general. Additionally, a heavy reliance on cash and limited access to traditional financial systems remain significant hurdles for financial services digitization in the country.

Digital financial inclusion is also further delayed by the large gender gap in this area, especially in Egypt. Women have lower access rates to formal financial services, including lower use of digital financial products than men. These consequences have a significant influence on their capability to become financially self-reliant and participate in the economic process. In addition, Egyptian small businesses lag in the use of digital transactions, which is a result of low levels of digital literacy, trust, and inadequate physical infrastructure.

The objective of this study is to explore digital banking adoption in the banking sector of Egypt and Analyze the attitudes of the customers towards them. These goals will contribute greatly to the digitization processes that have become a priority for the banking sector in Egypt but represent the primary aim of this research. Our central concern with respect to this framework is the research problem that surrounds how Egyptian banks strategically resort to the use of various innovative technologies to enhance the way they make their decision and build a

comparative advantage and best practices through the Egyptian banking journey within improved customer experience.

4. Research Objectives

This study aims to attain several objectives. Starting with measuring the extent of integration of digital technologies in the operations and services of banks in Egypt. This is about assessing the status quo of digitalization within the Egyptian banking sector. Moreover, the study investigates to what extent digital technology impacts the strategic decision-making processes Egyptian banks utilize. This objective relates to investigating the influence of the use of digital technologies on the processes of developing and executing strategic decisions in the banking sector. The study concludes by assessing the level of implementation of digital banking practices and customer behavior in Egypt.

5. Research Hypothesis

The following hypotheses were developed and derived from the above literature and theoretical review:

H0: There is no significant relationship between digital transformation and effective strategic decision-making in the Egyptian banking sector.

H01: There is no significant relationship between digital adoption and effective strategic decision-making in the Egyptian banking sector.

H02: There is no significant relationship between integrating emerging technologies and effective strategic decision-making in the Egyptian banking sector.

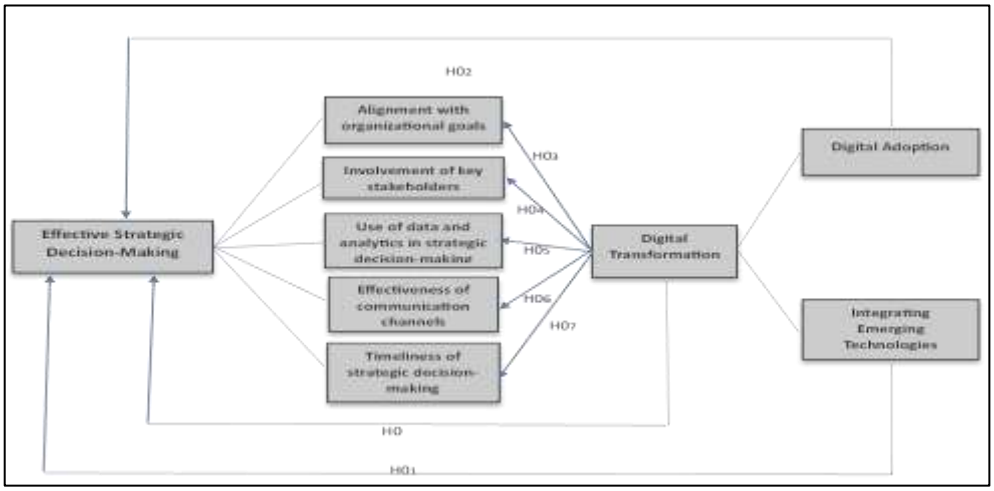
H03: There is no significant relationship between digital transformation and alignment with organizational goals in the Egyptian banking sector.

H04: There is no significant relationship between digital transformation and the involvement of key stakeholders in the Egyptian banking sector.

H05: There is no significant relationship between digital transformation and the use of data and analytics in the Egyptian banking sector.

H06: There is no significant relationship between digital transformation and the effectiveness of communication channels in the Egyptian banking sector.

H07: There is no significant relationship between digital transformation and the timeliness of strategic decision-making in the Egyptian banking sector.



Figure(1): Research Model, (Source: Author)

6. Statistical Analysis

6.1 Research Questionnaire

The questionnaire examines employees' perceptions of strategic decision-making and digital transformation in the banking industry. The questionnaire seeks answers from employees at different levels of management and records demographic information to be examined with respect to experience, managerial level, education and gender.

The first dimension, Effective Strategic Decision-Making, has five elements: (1) Alignment with Organizational Goals, (2) Involvement of Key Stakeholders, (3) Use of Data and Analytics, (4) Effectiveness of Communication Channels, (5) Timeliness of Strategic Decision-Making. the second dimension, Digital

Transformation, has two elements: (1) Digital Adoption, (2) Integration of Emerging Technologies.

6.2 Data Collection

The data collection method employed the technique of simple random sampling. Conventional sample techniques were utilized to disseminate surveys to middle and senior managerial staff members in the Egyptian banking industry. Three leading banks were chosen based on their asset evaluation as of 2022. The National Bank of Egypt–NBE (34,6%), The National Bank of Egypt (NBE) is the largest bank in Egypt in terms of total assets; the bank held about 167.41 billion U.S. dollars in June 2021. At the end of December 2021 and 2022, Banque Misr and Commercial International Bank (CIB) had assets worth 118.32 billion USD and 25.7 billion USD, respectively.

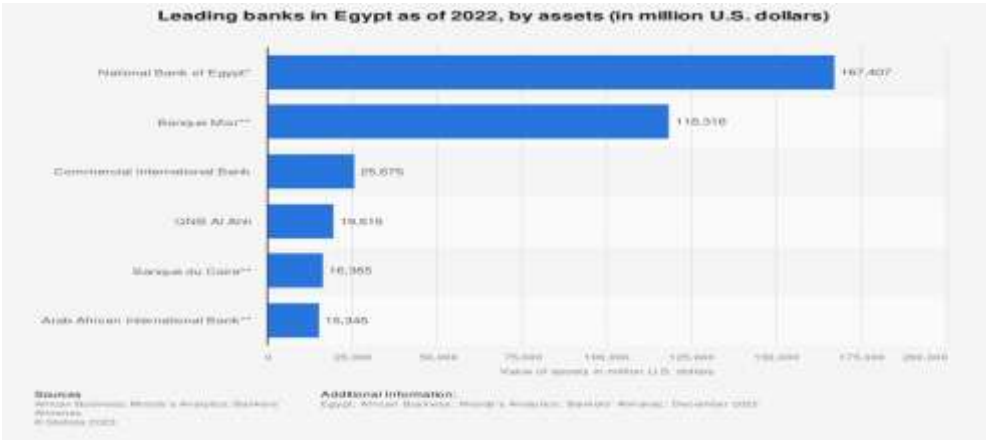


Figure 2: Leading banks in Egypt as of 2022, by assets (in million U.S. dollars)

Source: (Moody's Analytics, 2023)

In total, 400 surveys were sent out, and 264 valid responses were obtained, with the selected survey participants having a response rate of 66%. There were some problems handling the questionnaires, and the data was not properly/fully recorded. These missing files also caused issues, as some subjects failed to return their completed questionnaires. Furthermore, some questionnaires were unusable for analysis because of missing values or superficiality.

6.3 Data Analysis and the Statistical Methodology

This section presents the data analysis part of our study. The Ordinary Least Square method (OLS) was used to analyze the data and test our hypotheses. This paper's analysis was done using SPSS Version 27.

6.4 sample profile

The researcher depends on the questionnaire as a tool for data collection. The target population was the Egyptian banking sector's middle and top managerial employees; three top banks were selected based on their asset assessment as of 2022. National Bank of Egypt (NBE) is the leading bank in Egypt in terms of asset value held. As of June 2021, the bank held almost 167.41 billion U.S. dollars. Banque Misr and Commercial International Bank (CIB) followed with 118.32 billion U.S. dollars and 25.7 billion U.S. dollars as of December 2021 and 2022, respectively. The sample size was determined based on the random method; a total of 400

surveys were distributed, of which 264 valid responses were obtained, resulting in a response rate of 66% among the participants who chose to participate. Table (2) displays the survey distribution among selected banks in the Egyptian banking sector. Table (3) shows the Profile of the respondents.

Table (2): Spreads of Population Elements of the Study

The Bank Name	The number of surveys distributed	The number of valid responses
National Bank of Egypt (NBE)	161	117
Banque Misr	147	97
Commercial International Bank (CIB)	92	50
Total	400	264

Source: Fieldwork,2024

Table (3): Profile of respondents

Sample Description	Frequency	Percentage (%)
1- Years of Experience in the Banking Sector		
Less than five years	38	14.4
From 5 to 10 years	154	58.3
More than 10 years	72	27.3
2- Educational Background		
Bachelor's Degree	191	72.3
Master's Degree	43	16.3
Ph.D. or higher	30	11.4
3- Gender		
Male	131	49.6
Female	133	50.4
4- Managerial Level		
Middle Managerial level	100	37.9
Top Managerial Level	164	62.1

6.5 Reliability and validity tests

Construct reliability examines a construct's internal consistency; the most popular index used to check the reliability of a construct is Cronbach's alpha, which provides an estimate of the reliability of a construct based on the item intercorrelations. A Cronbach's alpha larger than 0.7 has been suggested to provide empirical evidence for construct reliability (Hair et al., 2016). In our example, Cronbach's alpha value for effective strategic decision-making is 88.7% and 87.6% for digital transformation, showing that the construct is reliable because it is more than 0.7. Furthermore, the Pearson correlation coefficient is utilized to check that each variable's indicators or dimensions measure what they were supposed to measure; table (4) shows the correlation coefficient between each variable and its indicators.

Table (4): Correlation coefficient between each variable and their indicators

Effective strategic decision-making indicators	Correlation coefficient	Digital transformation indicators	Correlation coefficient
Alignment with Organizational Goals	.885**	Digital Adoption	.991**
Involvement of Key Stakeholders	.817**	Integration of Emerging Technologies	.990**
Use of Data and Analytics	.854**		
Effectiveness of Communication Channels	.400**		
Timeliness of Strategic Decision Making	.398**		
**. Correlation is significant at the 0.01 level (2-tailed).			

Table (4) shows that each variable's indicators effectively measure their intended outcomes. The correlation coefficient values for the digital transformation variable and its indicators exceeded 30% (99.1% and 99%, respectively), while reached between the effective strategic decision-making variable and its indicators 88.8%, 81.7%, 85.4%, 40%, and 39.8% respectively, indicating the construct validity.

6.6 Descriptive statistics

Table (5) shows the descriptive statistics for the main variables and their indicators; the first variable, Effective Strategic Decision-Making, has five elements: (1) Alignment with Organizational Goals, (2) Involvement of Key Stakeholders, (3) Use of Data and Analytics, (4) Effectiveness of Communication Channels, (5) Timeliness of Strategic Decision Making. The second variable, Digital Transformation, has two elements: (1) Digital Adoption and (2) Integration of Emerging Technologies. The results show that the data variation is low, as the percentage of variation coefficient for all variables is small. The mean of all variables is more than 3, which means the respondents agree on most questions related to the research variables.

Table (5): descriptive statistics

Variables	N	Mean	Std. Deviation	Coefficient of variation%
Effective Strategic Decision-Making	264	4.2081	.28876	7
Digital Transformation	264	4.3902	.21950	5
Alignment with Organizational Goals	264	4.2083	.44000	10
Involvement of Key Stakeholders	264	4.2134	.37945	9
Use of Data and Analytics	264	4.2112	.29997	7
Effectiveness of Communication Channels	264	4.2112	.29997	7
Timeliness of Strategic Decision Making	264	4.3636	.26498	6
Digital Adoption	264	4.3934	.24869	6
Integration of Emerging Technologies	264	4.3869	.23481	5

6.7 Testing hypotheses

To test the hypothesis **(H0)** that there is no significant relationship between Digital Transformation and Effective Strategic Decision-Making in the Egyptian banking industry, the simple regression using the ordinary least square approach is utilized; table (6) shows the results of hypothesis H0.

Table (6): Results of hypothesis H0

Model	Coefficients	t	Sig.
(Constant)	1.133	4.906	.000
Digital Transformation	.708	13.440	.000
F test		180.636	
Sig (F)		0.000	
R Square		0.408	
Dependent Variable: Effective Strategic Decision-Making			

Table (6) shows that the model as a whole is significant, as Sig (F) is more than 5%. The value of R Square is 40.8%, indicating that Digital Transformation can explain 40.8% of the change in Effective Strategic Decision-Making**.** There is a significant positive relationship, at the 1% level, between Digital Transformation and Effective Strategic Decision-Making. The coefficient value of (.708) indicates that for every unit increase in Digital Transformation, Effective Strategic Decision-Making will increase with (0.708). Thus, **reject the null hypothesis that** There is no significant relationship between Digital Transformation and Effective Strategic Decision-Making in the Egyptian banking sector and **accept the alternative hypothesis that** There is a significant relationship between Digital Transformation and Effective Strategic Decision-Making in the Egyptian banking sector.

To test the hypothesis **(H01)** that there is no significant relationship between Digital Adoption and Effective Strategic Decision-Making in the Egyptian banking industry, the simple regression using the ordinary least square approach is utilized; table (7) shows the results of hypothesis H01.

Table (7): Results of hypothesis H01

Model	Coefficients	t	Sig.
(Constant)	1.336	5.690	.000
Digital Adoption	.663	12.356	.000
F test		152.674	
Sig (F)		0.000	
R Square		0.368	
Dependent Variable: Effective Strategic Decision-Making			

Table (7) shows that the model as a whole is significant, as Sig (F) is more than 5%. The value of R Square is 36.8%, indicating that Digital Adoption can explain 36.8% of the change in Effective Strategic Decision-Making. There is a significant positive relationship, at the 1% level, between Digital Adoption and Effective Strategic Decision-Making. The coefficient value of (.663) indicates that for every unit increase in Digital Adoption, Effective Strategic Decision-Making will increase by (0.663). Thus, **reject the null hypothesis that** There is no significant relationship between Digital Adoption and Effective Strategic Decision-Making in the Egyptian banking sector and **accept the alternative hypothesis that** There is a significant relationship between Digital Adoption and Effective Strategic Decision-Making in the Egyptian banking sector.

To test the hypothesis **(H02)** that there is no significant relationship between the Integration of Emerging Technologies and Effective Strategic Decision-Making in the Egyptian banking industry, the simple regression using the ordinary least square approach is utilized; table (8) shows the results of hypothesis H02.

Table (8): Results of hypothesis H02

Model	Coefficients	t	Sig.
(Constant)	1.044	4.636	.000
Integration of Emerging Technologies	.727	14.183	.000
F test		201.148	
Sig (F)		0.000	
R Square		0.434	
Dependent Variable: Effective Strategic Decision-Making			

Table (8) shows that the model as a whole is significant, as Sig (F) is more than 5%. The value of R Square is 43.4%, indicating that Integration of Emerging Technologies can explain 43.4% of the change in Effective Strategic Decision-Making. There is a significant positive relationship at the 1% level between Integration of Emerging Technologies and Effective Strategic Decision-Making. The coefficient value of (.727) indicates that for every unit increase in Integration of Emerging Technologies, Effective Strategic Decision-Making will increase with (0.727). Thus, **reject the null hypothesis that** There is no significant relationship between the Integration of Emerging Technologies and Effective Strategic Decision-Making in the Egyptian banking sector and accept the alternative hypothesis that There is a significant relationship between the Integration of Emerging Technologies and Effective Strategic Decision-Making in the Egyptian banking sector.

To test the hypothesis **(H03)** that there is no significant relationship between Digital Transformation and Alignment with organizational goals in the Egyptian banking industry, the simple regression using the ordinary least square approach is utilized; table (9) shows the results of hypothesis H03.

Table (9): Results of hypothesis H03

Model	Coefficients	t	Sig.
(Constant)	1.216	2.560	.011
Digital Transformation	.683	6.305	.000
F test		39.752	
Sig (F)		0.000	
R Square		0.132	
Dependent Variable: Alignment with organizational goals			

Table (9) shows that the model as a whole is significant, as Sig (F) is more than 5%. The value of R Square is 13.2%, indicating that Digital Transformation can explain 13.2% of the Alignment with organizational goals. There is a significant positive relationship, at the 1% level, between Digital Transformation and Alignment with organizational goals. The coefficient value of (.683) indicates that for every unit increase in Digital Transformation, Alignment with organizational goals will increase with (0.683). Thus, **reject the null hypothesis that** There is no significant relationship between Digital Transformation and Alignment with organizational goals in the Egyptian banking sector and **accept the alternative hypothesis that** There is a significant relationship between Digital Transformation and Alignment with organizational goals in the Egyptian banking sector.

To test the hypothesis **(H04)** that there is no significant relationship between Digital Transformation and the Involvement of key stakeholders in the Egyptian banking industry, the simple regression using the ordinary least square approach is utilized; table (10) shows the results of the hypothesis H04.

Table (10): Results of hypothesis H04

Model	Coefficients	t	Sig.
(Constant)	1.544	3.788	.000
Digital Transformation	.609	6.557	.000
F test		42.991	
Sig (F)		0.000	
R Square		0.141	
Dependent Variable: Involvement of key stakeholders			

Table (10) shows that the model as a whole is significant, as Sig (F) is more than 5%. The value of R Square is 14.1%, indicating that Digital Transformation can explain 14.1% of the Involvement of key stakeholders. There is a significant positive relationship, at the 1% level, between Digital Transformation and the Involvement of key stakeholders. The coefficient value of (.609) indicates that for every unit increase in Digital Transformation, the Involvement of key stakeholders will increase with (0.609). Thus, **reject the null hypothesis that** There is no significant relationship between Digital Transformation and the Involvement of key stakeholders in the Egyptian banking sector and accept the alternative hypothesis that There is a significant relationship between Digital Transformation and the Involvement of key stakeholders in the Egyptian banking sector.

To test the hypothesis **(H05)** that there is no significant relationship between Digital Transformation and the use of data and analytics in the Egyptian banking industry, the simple regression using the ordinary least square approach is utilized; table (11) shows the results of hypothesis H05.

Table (11): Results of hypothesis H05

Model	Coefficients	t	Sig.
(Constant)	.871	1.941	.053
Digital Transformation	.732	7.154	.000
F test		51.174	
Sig (F)		0.000	
R Square		0.163	
Dependent Variable: the use of data and analytics			

Table (11) shows that the model as a whole is significant, as Sig (F) is more than 5%. The value of R Square is 16.3%, indicating that Digital Transformation can explain 16.3% of the use of data and analytics. There is a significant positive relationship, at the 1% level, between Digital Transformation and the use of data and analytics. The coefficient value of (.732) indicates that for every unit increase in Digital Transformation, data, and analytics will increase by (0.732). Thus, **reject the null hypothesis that** There is no significant relationship between Digital Transformation and the use of data and analytics in the Egyptian banking sector and **accept the alternative hypothesis that** There is a significant relationship between Digital Transformation and the use of data and analytics in the Egyptian banking sector.

To test the hypothesis **(H06)** that there is no significant relationship between Digital Transformation and the Effectiveness of communication channels in the Egyptian banking industry, the simple regression using the ordinary least square approach is utilized; table (12) shows the results of the hypothesis H06.

Table (12): Results of hypothesis H06

Model	Coefficients	t	Sig.
(Constant)	1.007	3.794	.000
Digital Transformation	.760	12.564	.000
F test		157.847	
Sig (F)		0.000	
R Square		0.376	
Dependent Variable: Effectiveness of communication channels			

Table (12) shows that the model as a whole is significant, as Sig (F) is more than 5%. The value of R Square is 37.6%, indicating that Digital Transformation can explain 37.6% of the Effectiveness of communication channels. There is a significant positive relationship, at the 1% level, between Digital Transformation and the Effectiveness of communication channels. The coefficient value of (.760) indicates that for every unit increase in Digital Transformation, the Effectiveness of communication channels will increase by (0.760). Thus, **reject the null hypothesis that** There is no significant relationship between Digital Transformation and the Effectiveness of communication channels in the Egyptian banking sector and accept the alternative hypothesis that There is a significant relationship between Digital Transformation and the Effectiveness of communication channels in the Egyptian banking sector.

To test the hypothesis **(H07)** that there is no significant relationship between Digital Transformation and the Timeliness of strategic decision-making in the Egyptian banking industry, simple regression using the ordinary least square approach is utilized; table (13) shows the results of hypothesis H07.

Table (13): Results of hypothesis H07

Model	Coefficients	t	Sig.
(Constant)	1.195	5.055	.000
Digital Transformation	.723	13.420	.000
F test		180.098	
Sig (F)		0.000	
R Square		0.407	
Dependent Variable: Timeliness of strategic decision-making			

Table (13) shows that the model as a whole is significant, as Sig (F) is more than 5%. The value of R Square is 40.7%, indicating that Digital Transformation can explain 40.7% of the Timeliness of strategic decision-making. There is a significant positive relationship, at the 1% level, between Digital Transformation and the Timeliness of strategic decision-making. The coefficient value of (.723) indicates that for every unit increase in Digital Transformation, the Timeliness of strategic decision-making will increase with (0.723). Thus, **reject the null hypothesis that** There is no significant relationship between Digital Transformation and Timeliness of strategic decision-making in the Egyptian banking sector and accept the alternative hypothesis that There is a significant relationship between Digital Transformation and Timeliness of strategic decision-making in the Egyptian banking sector.

7. Discussion and Conclusion

The study highlights the significant impact of digital transformation on strategic decision-making in the Egyptian banking sector. Earlier literature supports the influential role of digital technologies in enhancing organizational decision-making processes (Henriette et al., 2016; Bharadwaj et al., 2013a).

The results of the study show that digital transformation positively influences the alignment of organizational goals. Digital transformation initiatives help organizations align their

strategic objectives with market demands via enhanced data-driven decision-making (Kane et al., 2015).

Our research findings demonstrate a significant positive correlation between digital transformation and the engagement of key stakeholders. This is consistent with prior research conducted by Hess et al. (2016), which emphasized the crucial role of digital platforms in enabling stakeholder engagement and collaboration, thereby leading to more inclusive and effective decision-making processes.

The implications of digital transformation on using data and analytics in strategic decision-making are explored. Brynjolfsson and McAfee (2014) explained that new technologies such as advanced analytics tools offer the means for organizations to generate more timely insight from big data, leading in turn towards improved quality and speed of strategic decisions.

Digital transformation was found to be a key factor that enhances communication channel efficiency. This is consistent with Piccoli and Ives (2005), who demonstrated that digital communication tools help to reduce information asymmetry among organization members which in turn drives coordination of work processes leads to better decision making.

The significant positive relationship between digital transformation and the timeliness of strategic decision-making supports the observations of Sambamurthy, Bharadwaj, and Grover (2003), who noted that digital tools provide the agility

needed to make timely and effective strategic decisions in dynamic environments.

The results of this research highlight that digital adoption has a major influence on the strategic decision-making process, thereby supporting Westerman et al. (2014). Therefore, our hypothesis was that increased adoption of digital capabilities enables organizations to make more effective organizational decisions.

This research aligns with Yoo, Henfridsson, and Lyytinen's perspective (2010), which argues that AI, along with other emerging technologies such as blockchain, can enable firms to make more informed decisions by achieving higher levels of innovation and efficiency in their decision-making processes.

8. Recommendations for Researchers and the Industry

8.1 Recommendations for Researchers:

According to the results, understanding how digital transformation affects various sectors and areas should be the main emphasis of the next research. By means of longitudinal studies, one can investigate the long-term consequences of digital transformation on organizational performance and strategic decisions. By means of qualitative techniques such as case studies and interviews, one can acquire a better awareness of the difficulties and advantages companies experience during the process of digital transformation.

8.2 Recommendations for the Industry:

Organizations should match digital transformation projects with their strategic goals, involve important stakeholders, make investments in advanced data analytics capabilities, and enhance channels of communication if they are to maximize their impact. This will guarantee the efficient application of digital tools and technologies to assist organizational goals. While data-driven decision-making is vital in the fast-paced corporate environment of today, stakeholder participation promotes buy-in and support. Successful implementation and strategic decision-making depend on the overall matching of digital transformation projects with strategic goals, involving stakeholders, and enhancing communication channels with regard to strategic objectives.

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