





“Impact of digital transformation on the organization’s financial performance: A case of Jordanian commercial banks listed on the Amman Stock Exchange”

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IMPACT OF DIGITAL TRANSFORMATION ON THE ORGANIZATION'S FINANCIAL PERFORMANCE: A CASE OF JORDANIAN COMMERCIAL BANKS LISTED ON THE AMMAN STOCK EXCHANGE

Abstract

Digital transformation refers to strategic activities undertaken by organizations to improve and simplify their process and even alter their business models with abreast to enhance firm performance. Thus, the aim of this study was to analyze the impact of digital transformation on organizational performance among the Jordanian commercial banks listed on the Amman Stock Exchange. The descriptive research design was used in this quantitative study. Primary data were collected to achieve the objectives of the study. The target population was employees (managers and non-managers) of Jordanian commercial banks listed on the Amman Stock Exchange. The sample size was selected using Krejcie and Morgan rule; after data cleaning procedures, the final sample of 282 respondents was used for final analysis. The study employed regression analysis to arrive at the results. The results confirm that digital transformation has a significant positive effect on customer experience and IT innovation. These results were significant at a 1% level. The results also confirm that digital transformation has a significant positive effect on firm performance, with a significance level of 1%. Moreover, the significant positive impact of customer experience and IT innovation was confirmed. Therefore, the significant positive impact of digital transformation on firm performance was found viz-a-viz direct as well as indirect route.

Keywords

digital transformation, customer experience, IT
innovation, firm performance, Jordanian commercial
banks, Amman Stock Exchange

JEL Classification

M10, M15, M40

INTRODUCTION

The global economy is undergoing a massive and far-reaching upheaval, fueled by the widespread and imaginative use of cutting-edge digital technologies. These technologies include a slew of game-changing breakthroughs, such as the Internet of Things, cloud computing, artificial intelligence, and the complex realm of big data analytics (Grubel & Walker, 1989). These digital technologies have become the driving force behind a transformation touching nearly every sector and industry, radically altering how businesses function and how customers interact with products and services. However, the extraordinary COVID-19 epidemic has significantly hastened this digital transformation. This global health issue has served as a potent catalyst, causing enterprises all over the world to step up and accelerate their efforts toward digital transformation. In the aftermath of this disruptive epidemic, businesses are increasingly driven to leverage the full potential of digital innovation, not as an optional strategy but as a critical life-

line. In today's ever-changing economic context, pursuing digital transformation is no longer an option; it is a need for not just surviving but thriving, assuring long-term competitiveness, and cultivating the agility to overcome unexpected difficulties (Ukko et al., 2019). As a result, the relentless march of digital transformation is transforming the global economic landscape at an unprecedented rate, necessitating flexibility and innovation for firms seeking to ensure their future in this volatile climate.

1. LITERATURE REVIEW AND HYPOTHESES

While much of the previous research on digital transformation has largely focused on conceiving and developing implementation techniques, there has been a noteworthy vacuum in understanding how digital transformation affects company performance. Scott et al. (2017) found a direct and beneficial effect of technology adoption in the financial industry on business performance. They speculated that due to the complexities of technological adoption, this influence may become more evident in the long run. Simultaneously, Guo and Xu (2021) discovered that digital transformation had a greater influence on operating performance than on financial performance. Improving operational effectiveness via digital transformation demands more favorable conditions, such as supportive policies and a suitable atmosphere for innovation. Furthermore, concentrating on textile SMEs, Chen et al. (2016) used a resource-based perspective and proved the favorable benefits of digital transformation on perceived organizational performance. Furthermore, Braojos et al. (2019) provided empirical proof that IT abilities like e-commerce and social media integration boost a company's overall performance.

Because it stimulates new types of innovation that blend digital and non-digital assets while embracing ecosystems, communities, and networks, digital transformation has an impact on company performance compared to IT innovations. Digital infrastructures and platforms give additional characteristics that allow innovation, extending beyond just introducing new opportunities to encompass broader value creation and value capture benefits. Utilization of information and big data via information and communication technology (ICT) enhances both intra-organizational (in-house) and inter-organizational (open innovation) processes, hence improving innovation performance (Scuotto et al., 2017). Appio et al. (2021)

discovered that digital transformation influences many aspects of industries and organizations in a digitalized environment, including competition, innovation organization, production of new products and services, and management of people and teams participating in innovation. Big data innovations, on the other hand, are highly influenced by social media and IT platforms, strengthening the impact of a firm's social and relational capital on its IT innovations (Bharati & Chaudary, 2019). Furthermore, the incorporation of digital transformation into digitalized processes enhances the quantity of business innovation in processes, commodities, and services (Guo & Xu, 2021).

While many sources indicate that digital transformation affects company performance in terms of IT innovation, the literature also acknowledges the influence of digital transformation on firm performance in terms of customer experience. A customer-centric digital transformation helps firms to leverage digital technologies, get consumer insights, and align corporate processes in order to improve customer experience (Immonen & Sintonen, 2015). Participation of customers in digitalized service development processes is also essential for success (Saunila et al., 2019). Spiess et al. (2014) show how technology may improve customer experience by merging big data insights and process automation at many consumer touchpoints. Huseynov (2021) discussed how to use big data to improve decision-making and customer experience. Big data analysis of online customer reviews has been shown to boost electronic word-of-mouth, leading in higher customer satisfaction and performance. Furthermore, smart retail technology provides more personalized services, enhancing the client experience (Roy et al., 2017). Surprisingly, there is no comprehensive research in the academic literature on the impact of digital transformation on customer experience. When hedonic and recognition factors were included, Sasmoko et al. (2019) revealed a positive relationship between digital transformation and customer experience.

Customer experience research consistently reveals that customer experience is positively associated with several consumer characteristics, such as happiness and loyalty (Lin & Bennet, 2014). Furthermore, academic studies demonstrate that consumer characteristics associated with customer experiences, such as customer happiness, have a positive influence on firm performance (Lee & How, 2019). While few studies clearly relate customer experience to corporate performance. Notably, Mbama and Ezepue (2018) identified a favorable relationship between customer experience and a firm's financial success by polling bank customers and analyzing bank financial data. Similarly, Grønholdt et al. (2015) identified characteristics of customer experience management that contribute to increased customer experience. They concluded that organizations that succeed in customer experience reap significant advantages. Sharples (2018) also claims that including customer experience management in cruise firms during the pre-purchase stage increases customer experience and firm performance.

The beneficial effect of innovation on company performance is extensively proven (Datta & Roumani, 2015). Coad et al. (2016) highlight the critical importance of innovation in improving firm performance, regardless of its age or size. According to Prajogo (2016), the business environment has a moderating influence, with a dynamic environment encouraging the impact of product innovation and a competitive environment boosting process innovation of Australian manufacturing enterprises. Product and process innovations both contribute to improved business success. Furthermore, Tajvidi and Karami (2021), who investigated the use of social media in UK hotels, emphasize the crucial role of innovation in moderating the link between social media use and business performance. Using a dynamic methodology and data from the corporate environment, Gërguri-Rashiti et al. (2017) discovered that ICT adoption improves innovation and performance regardless of the firm's age or industry. In essence, a company's dedication to innovation results in the creation of a competitive edge. Firms that consistently develop their innovation capabilities outperform their competitors (Bouwman et al., 2019).

In Jordan, digital transformation refers to strategic activities undertaken by organizations to improve customer relations, simplify processes, and even alter their business models via the use of digital technology (Ferreira et al., 2019). According to a poll of Jordanian industrial groups, 92% have started digital transformation initiatives to obtain a competitive advantage, while others are unsure about its commercial benefits. In Jordan, there is no agreement on the influence of digital transformation on organizational performance (Guo & Xu, 2021). Sia et al. (2016) recognized digital technology's enormous benefits for Jordanian information systems. Jordanian IT investment studies regularly indicate performance increases in areas such as operations and finance (Martín-Peña et al., 2020). Information system research has looked at the role of digital technology in optimizing internal processes (Sturesson & Groth, 2018, p. 208). Jordan's increasing use of digital technology provides chances for efficiency and innovation (Baradarani & Kilic, 2018; Martínez-Caro et al., 2020). Digital transformation goes beyond process improvement by reshaping company vision, processes, and culture while also increasing integration and administration expenses (Zhai et al., 202). In Jordan, the benefits and costs of digital transformation differ from those of traditional IT, confounding its influence on performance. Most of studies on the association of digital transformation with performance in Jordan originate from surveys conducted by industrial consulting companies, which provide limited theoretical insights due to varying samples and measures (Maklan et al., 2017). In Jordan, academic research focuses on the influence of certain digital technologies on individual enterprise finances (Hess et al., 2016) rather than comprehensive, company-wide digital transformation efforts (Pekovic & Rolland, 2020; El Sawy & Pavlou, 2008).

Despite Jordan's economic growth and digital advancements, there is a significant gap in scholarly research regarding the impact of digital transformation on firm performance. Existing literature underscores the importance of conducting comprehensive studies on the influence of digital transformation across various contexts and industries (Zhang et al., 2016). While limited studies explored the relationship between digital transformation and corporate performance, some stud-

ies, like Stureson and Groth's (2018) healthcare study in Sweden and Hess et al.'s (2016) work on German enterprises, offer insights into digital transformation effects. However, it is worth noting that digital transformation research in developing nations, such as Jordan, is still in its nascent stages. Therefore, it is essential to investigate digital transformation within the specific context and challenges of Jordan. Despite some glimpses into digital transformation, including Al-Ruithe et al. (2017) study on cloud computing in Saudi Arabia, the precise pathways through which digital transformation influences performance in Jordan remain largely unexplored, presenting a promising avenue for future research. Importantly, no prior research in Jordan has examined the specific mechanisms through which digital transformation affects firm performance. Accordingly, this study elaborated on the following hypotheses:

- H1: Digital transformation improves company performance.*
- H2: IT innovation is favorably associated with digital transformation.*
- H3: Customer experience is favorably associated with digital transformation.*
- H4: Customer satisfaction is directly associated with company performance.*
- H5: IT innovation is associated with improved company performance.*

2. METHODOLOGY

The study adopted a descriptive research design to determine the impact of digital transformation on firm performance among Jordanian commercial banks listed on the Amman Stock Exchange. In addition, the study used both qualitative and quantitative techniques to arrive at its conclusions. Employees of commercial banks listed on the Amman Stock Exchange comprised the study's sample. It should be noted that 14 commercial banks are listed on the Amman stock market. Table 1 shows the number of workers in each bank. Jordan's commercial banks employ a total of 13,921 individuals. The necessary sample

size was determined from these employees using the Krejcie and Morgan (1970) method. The optimum sample size was 373. The sample size of 373 employees was chosen to reflect the proportion of employees in each bank. For example, the proportion of total workers at Invest Bank was 441; 11 individuals were chosen as the sample, and a similar approach was used for other banks.

Table 1. Respondents from each bank

Name of the bank	Total employees	Samples taken
Jordan Islamic Bank	2433	64
Safwa Islamic Bank	658	17
Invest Bank	441	11
Jordan Kuwait Bank	880	23
Jordan Commercial Bank	433	11
The Housing Bank for Trade and Finance	1834	50
Arab Jordan Investment Bank	536	14
Bank Al Etihad	715	19
Arab Banking Corporation (Jordan)	341	9
Capital Bank of Jordan	550	15
Cairo Amman Bank	1401	39
Bank of Jordan	867	23
Jordan Ahli Bank	677	18
Arab Bank	2155	60
Total	13921	373

The data for the study were collected from primary sources using a structured questionnaire. The questionnaire was divided into two parts. The first part contained information on demographics, and the second part of the questionnaire contained six statements on digital transformation, eight statements on customer experience, eight statements on IT innovation, and four statements on firm performance. Statements on digital transformation were adopted from Ukko et al. (2019). Statements on customer experience were adopted from Berghaus and Back (2016). Statements on IT innovation were adopted from Wu and Chiu (2015). Lastly, statements on firm performance were adopted from Khin and Ho (2019) and Raguseo and Vitari (2018). Each statement was based on a five-point Likert scale. Following the distribution of 373 questionnaires, only 303 questionnaires were returned. Out of 303 questionnaires, 282 were fully filled and usable for final analysis. The study used regression analysis to determine the relationship between independent and dependent variables.

The demographic characteristics of the respondents are presented in Table 2.

Table 2. Demographic profile of respondents

Variable	Category	Frequency	Percentage
Gender	Male	210	74.44
	Female	72	25.56
Age	20-30	30	10.36
	30-40	170	60.28
	Above 40	82	29.36
Qualification	Graduation	90	31.90
	Post-graduation	150	53.20
	Above post-graduation	42	14.90
Title	Manager	88	31.20
	Non-manager	194	68.80

From Table 2, it can be inferred that males occupy 74.44% ($n = 210$) of the sample while females occupy 25.56% ($n = 72$). Regarding age, the majority of the respondents ($n = 170$) belong to the age group of 30-40. Moreover, 29.36% ($n = 82$) belong to the age group of above 40. Further, with regard to qualification variable, majority of the respondents ($n = 150$) hold post-graduate degrees and 90 respondents hold graduate degrees. Moreover, 42 respondents hold a degree above post-graduation. Lastly, with regard to title, 68.8% of the respondents ($n = 194$) are non-managers and only 31.20% ($n = 88$) are managers.

3. RESULTS AND DISCUSSION

3.1. Descriptive statistics

Table 3 displays descriptive statistics for all variables utilized in the study. The mean value of the digital transformation variable is 3.421 and the standard deviation is 0.543. In terms of the customer experience variable, the mean value is 4.373, while the standard deviation is 0.521. The mean value of the IT innovation variable is 3.243 and the standard deviation is 0.520. Finally, the mean of the firm performance variable is 3.361 and the

Table 3. Descriptive statistics

Variables	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
DT	1.666	4.833	3.421	0.543	-0.195	0.060
CE	1.5	4.375	3.079	0.521	-0.159	-0.193
IT	1.75	4.5	3.243	0.520	-0.184	0.16
FP	1.75	5	3.361	0.668	0.035	-0.285

Note: DT = digital transformation; CE = customer experience; IT = IT innovation; FP = firm performance.

standard deviation is 0.668. Furthermore, the skewness and kurtosis statistics for all variables are under the allowed limit of 1.96, indicating that all variables are close to normal.

3.2. Regression analysis

Table 4 shows the findings of the regression analysis. Panel A shows the regression results using customer experience as the dependent variable and digital transformation as the independent variable. The coefficient for the digital transformation variable is positive and significant at the 1% level of significance, showing that digital transformation has a considerable positive influence on customer experience. These findings contradict those of Sasmoko et al. (2019), Zhao et al. (2019), and Roy et al. (2017), but they also confirm a favorable association between digital transformation and customer experience. In Panel A, the F -value is substantial, showing that the regression model is well-fitting. The corrected R -Squared for this model is 0.21, meaning that digital transformation can explain 21% of the variation in customer experience.

The results of a regression using IT innovation as the dependent variable and digital transformation as the independent variable are reported in Panel B of Table 4. The coefficient for the digital transformation variable is positive and significant at the 1% level of significance, meaning that digital transformation has a considerable positive influence on IT innovation. These findings confirm the premise about a favorable association between digital transformation and IT innovation (Appio et al., 2021; Bharati & Chaudhury, 2019; Scutto et al., 2017). The F -value in Panel B of Table 4 is substantial, indicating that the model is well-fitting. Furthermore, the adjusted R -Squared for this model is equal to 0.42, meaning that digital transformation can explain 42% of the variation in the IT innovation variable.

The results of regression with firm performance as a dependent variable and customer experience as an independent variable are reported in Panel C of Table 4. The coefficient for the customer experience variable is positive and significant at the 1% level of significance, showing that digital transformation has a strong positive influence on firm performance in Jordanian commercial banks. These findings confirm the premise that there is a positive association between customer experience and business performance (Sharples, 2018; Mbama & Ezepue, 2018; Grønholdt et al., 2015). In this scenario, the *F*-value is likewise substantial, indicating that the model is fit. Customer experience may also explain 27% of the variation in the dependent variable of firm performance, as indicated by the modified *R*-Squared values.

The results of regression using firm performance as the dependent variable and IT innovation as the independent variable are provided in Panel D of Table 4. The results in Panel D of Table 4 indicate that the coefficient for the IT innovation variable is positive and significant at the 1% level of significance, showing that IT innovation induced by digital transformation has a positive influence on business performance. These findings corroborate the premise that there is a substantial positive association between IT innovation and company success (Tajvidi & Karami, 2021; Bouwman et al., 2019; Gërguri-Rashiti et al., 2017). The *F*-value in Panel D is likewise large, indicating that the model is well-fitting. The adjusted *R*-Squared value of 0.43 indicates that the IT innovation variable can explain 43% of the variation in the firm performance variable.

Finally, the study investigated the direct influence of the digital transformation variable for firm per-

formance. The outcome of this regression is shown in Panel E of Table 4. At the 1% level of significance, the coefficient for the digital transformation variable is positive and significant, showing that digital transformation has a considerable influence on company performance. These findings corroborate the premise that there is a considerable positive association between digital transformation and company success (Braojos et al., 2019; Scott et al., 2017; Chen et al., 2016). In addition, the digital transformation variable can explain 43% of the variance in firm performance, as indicated by the modified *R*-Squared value, and the model fits well.

Table 4. Regression results

Variable	Coefficient	t-value	p-value
Panel A: Dependent variable: CE			
DT	0.151	2.67	0.007
F	7.14	–	0.007
Adjusted R-squared	0.21	–	–
Panel B: Dependent variable: IT			
DT	0.20	3.65	0.000
F	13.39	–	0.000
Adjusted R-squared	0.42	–	–
Panel C: Dependent variable: FP			
CE	0.22	2.98	0.00
F	8.90	–	0.00
Adjusted R-squared	0.27	–	–
Panel D: Dependent variable: FP			
IT	0.29	3.92	0.00
F	15.38	–	0.00
Adjusted R-squared	0.43	–	–
Panel E: Dependent variable: FP			
DT	0.26	3.70	0.000
F	13.72	–	0.000
Adjusted R-squared	0.43	–	–

Note: DT = digital transformation; CE = customer experience; IT = IT innovation; FP = firm performance.

CONCLUSION

The study aimed to analyze the impact of digital transformation on organizational performance among the Jordanian commercial banks listed on the Amman Stock Exchange. Using the descriptive research design and the quantitative approach, this study employed regression analysis to arrive at the results. The findings demonstrate that digital transformation has a considerable beneficial influence on both customer experience and IT innovation. The findings further support the notion that digital transformation has a major beneficial influence on corporate performance. Next, there is a positive association between customer experience and IT innovation. Thus, the study confirms the direct and indirect significant positive impact of digital transformation on firm performance.

The results of the study imply that digital transformation can lead to better conditions for the firm in terms of customer experience, IT innovations, and, thereby, firm performance. By these means, Jordanian banks need to improve the digital setup to improve their performance and serve customers in a much proper way.

AUTHOR CONTRIBUTIONS

Conceptualization: Nahed Habis Alrawashedh.
 Data curation: Nahed Habis Alrawashedh.
 Formal analysis: Nahed Habis Alrawashedh.
 Funding acquisition: Mohammad Fawzi Shubita.
 Investigation: Mohammad Fawzi Shubita.
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 Visualization: Nahed Habis Alrawashedh.
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 Writing – review & editing: Nahed Habis Alrawashedh.

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