



جامعة ميدأوشن

كلية الإدارة

قسم.....

Title:

**The role of digital technology in improving the efficiency of
operations in companies in the Kingdom of Saudi Arabia**

دور التكنولوجيا الرقمية في تحسين كفاءة العمليات في الشركات بالمملكة العربية السعودية

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1.1. Introduction

In the Kingdom of Saudi Arabia, digital technology has emerged as a transformative force, revolutionizing the way businesses operate and enhancing their efficiency. With its vast potential and widespread adoption, digital technology has become a pivotal tool for companies in various industries, enabling them to streamline processes, optimize resources, and achieve higher levels of productivity. This introduction explores the significant role played by digital technology in improving the efficiency of operations in companies across Saudi Arabia(Hanna et al.,2019).

Digital technology encompasses a wide range of tools and systems, including cloud computing, big data analytics, artificial intelligence (AI), internet of things (IoT), and automation. These technologies have enabled companies in Saudi Arabia to overcome traditional barriers and unlock new opportunities for growth and competitiveness. By leveraging digital solutions, businesses have been able to enhance their operational efficiency in several key areas(Ramanathan et al.,2022).

One area where digital technology has made a profound impact is in supply chain management. Through the use of advanced analytics and real-time data, companies can gain greater visibility into their supply chains, enabling them to optimize inventory levels, minimize lead times, and improve overall coordination. By adopting digital platforms, businesses in Saudi Arabia have been able to streamline their supply chain operations, reduce costs, and enhance customer satisfaction(Anastasiadis et al.,2018).

Furthermore, digital technology has revolutionized communication and collaboration within organizations. With the advent of digital communication tools such as video conferencing, instant messaging, and project management software, teams can seamlessly connect and collaborate

regardless of their physical locations. This has not only improved internal communication but has also facilitated effective collaboration with external partners, suppliers, and customers, leading to faster decision-making and improved operational efficiency(Vasilenko et al.,2021).

Digital technology has also played a significant role in transforming customer experiences in Saudi Arabian companies. With the rise of e-commerce, mobile applications, and online platforms, businesses can now provide personalized and seamless experiences to their customers. Through data-driven insights and AI-powered algorithms, companies can understand customer preferences, anticipate their needs, and deliver tailored solutions. This has not only enhanced customer satisfaction but has also streamlined sales and marketing processes, resulting in increased operational efficiency(Stupina et al.,2021).

Moreover, digital technology has enabled companies to automate repetitive and time-consuming tasks, freeing up valuable human resources for more strategic and value-added activities. Robotic process automation (RPA) and AI-powered bots have been deployed to automate various administrative tasks, data entry, and customer service operations. By automating these processes, companies can significantly reduce errors, improve response times, and allocate their workforce to more complex and strategic tasks, thus enhancing operational efficiency(Raj et al.,2023).

1.2. Problem Statement

Despite significant advances in digital technology, many companies in Saudi Arabia still face challenges in fully harnessing its potential to improve operational efficiency. While some companies have successfully adopted digital solutions, a substantial number still suffer from outdated processes and limited technology integration. This problem statement aims to highlight the key issues that hinder the effective use of digital technology and its impact on operational

efficiency in Saudi companies(Madhanhire & Mbohwa, 2016).One notable challenge is the lack of digital infrastructure and connectivity across the country. While major urban centers in Saudi Arabia have seen significant developments in digital infrastructure, rural areas and small businesses often face limited access to high-speed internet and reliable connectivity. This digital divide hinders the adoption and implementation of digital technologies, preventing companies from fully leveraging their potential to enhance operational efficiency. According to the problem statement, the current research tries to answer the following question:

1.3. Research Questions

1. What is the reality of applying digital technology to improve the efficiency of operations in companies in the Kingdom of Saudi Arabia?
2. What is the impact of digital technology on improving the efficiency of operations in companies in the Kingdom of Saudi Arabia?
3. What are the challenges facing the application of digital technology to improve the efficiency of operations in companies in the Kingdom of Saudi Arabia?

1.4. Research Objective

The current research aims to

1. Identify the reality of applying digital technology to improve the efficiency of operations in companies in the Kingdom of Saudi Arabia
2. Identify the impact of digital technology in improving the efficiency of operations in companies in the Kingdom of Saudi Arabia
3. Identify the challenges facing the application of digital technology to improve the efficiency of operations in companies in the Kingdom of Saudi Arabia

1.5. The Research Significance

➤ Scientific Significance:

This research holds scientific significance as it contributes to the existing body of knowledge regarding the role of digital technology in improving operational efficiency in companies in the Kingdom of Saudi Arabia. By exploring the challenges and opportunities associated with digital technology adoption, the research provides insights into the specific context of Saudi Arabian companies. It helps bridge the gap in understanding the impact of digital technology on operational efficiency within this particular business environment. The findings of this research can contribute to academic discussions and further research in the field of digital transformation and its implications for business operations.

➤ Practical Significance:

The research also holds practical significance by providing valuable insights and recommendations for companies in the Kingdom of Saudi Arabia. By identifying the challenges hindering the effective utilization of digital technology, the research helps organizations understand the barriers they may face and develop strategies to overcome them. The findings and recommendations can guide businesses in making informed decisions regarding digital technology adoption, infrastructure development, talent acquisition, and training programs. By implementing the practical recommendations derived from this research, companies can enhance their operational efficiency, improve competitiveness, and drive sustainable growth in the digital era.

Moreover, this research is significant for policymakers and governmental organizations in Saudi Arabia. It sheds light on the specific challenges faced by companies in adopting digital technology and highlights the importance of addressing these challenges at a broader level. Policymakers can utilize the research findings to develop supportive policies, initiatives, and regulations that

encourage digital transformation, promote digital infrastructure development, and foster digital literacy in the business sector. By aligning the efforts of the government, businesses, and other stakeholders, the research contributes to the overall economic development and digital transformation agenda of Saudi Arabia.

1.6. Research Definition

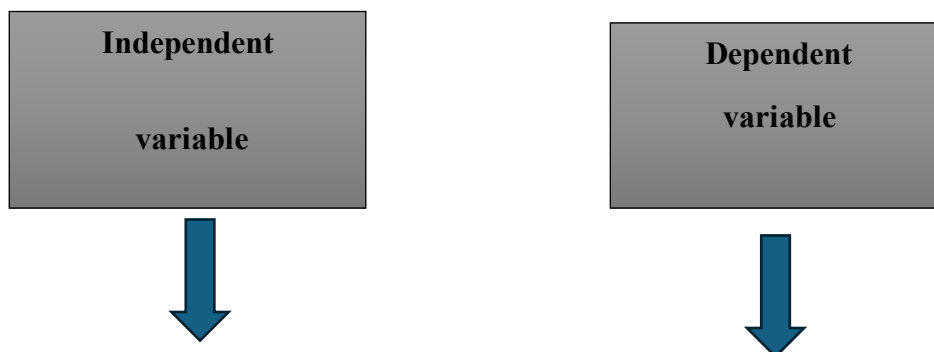
➤ Digital technology

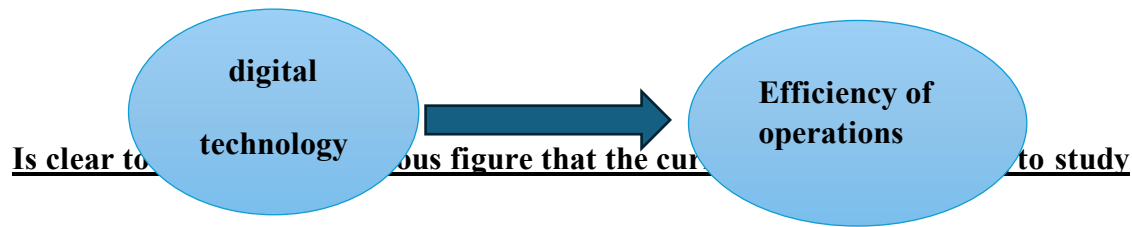
refers to the use of electronic devices, systems, and software that utilize digital information and processes. It encompasses a wide range of technologies and tools that operate on digital signals, such as computers, smartphones, tablets, software applications, internet connectivity, cloud computing, artificial intelligence (AI), big data analytics, and the internet of things (IoT).

➤ Operations efficiency

refers to the ability of an organization to utilize its resources effectively and achieve optimal results in its operational processes. It involves maximizing output and minimizing input or resources required to produce goods or services. Operations efficiency focuses on streamlining and improving the efficiency of activities such as production, supply chain management, inventory control, quality control, and customer service.

1.7. Research Framework





The role of digital technology in improving the efficiency of operations in companies in the Kingdom of Saudi Arabia

- **Independent variable:** It represents the independent variable of the research
 - digital technology
- **Dependent variable:** The search dependent variable is:
 - efficiency of operations

1.8. Research Hypothesis

Therefore, the current research is based on the following hypotheses:

- There is a statistically significant effect of digital technology in improving the efficiency of operations in companies in the Kingdom of Saudi Arabia

1.9. Research Tools

The data collected from the sample were entered using the program (SPSS-V.22). The statistical methods that were used to process the data varied, including:

- ✓ Cronbach's Alpha coefficient to ensure consistent performance.
- ✓ Use frequencies and percentages to decide the significance of the sample's responses to the questionnaire items.
- ✓ Correlation coefficient for the calculation of honesty.
- ✓ Regression analysis.

1.10. Literature review

The study conducted by Martínez-Caro, Cegarra-Navarro, and Alfonso-Ruiz (2020) focuses on examining the relationship between digital technologies, firm performance, and the role of digital organizational culture. The researchers aim to understand how digital technologies impact firm performance and how the organizational culture around digitalization influences this relationship. The study employs a quantitative research approach and collects data from a sample of firms in the Spanish manufacturing sector. The findings of the study reveal that the adoption and use of digital technologies positively affect firm performance. Additionally, the study highlights the crucial role of digital organizational culture as a mediator in this relationship. The presence of a digital organizational culture, characterized by openness to change, digital skills, and effective communication, enhances the positive impact of digital technologies on firm performance. The research emphasizes the significance of fostering a digital organizational culture to maximize the benefits of digital technologies and improve firm performance.

The study by (Wang et al., 2022) investigates the impact of digital technology on supply chain efficiency within the manufacturing industry. The research contributes to understanding the role of digitalization in enhancing operational performance in manufacturing supply chains. The authors likely provide a comprehensive review of existing literature on digital transformation, supply chain management, and the intersection of these fields. This review sets the foundation for understanding the theoretical underpinnings and empirical evidence related to the impact of digital technology on supply chain efficiency. The study probably employs a mixed-methods approach, combining qualitative and quantitative analyses. Data may be collected through surveys, interviews, case studies, or secondary sources to gather insights into the current state of digital technology adoption and its effects on supply chain performance. The authors likely present

findings that demonstrate the positive impact of digital technology on various aspects of supply chain efficiency in the manufacturing industry. This may include improvements in inventory management, production planning, coordination, customer responsiveness, and overall operational agility.

The study conducted by Haleem, Javaid, Qadri, and Suman (2022) aims to provide a comprehensive review of the role of digital technologies in education. The researchers seek to understand how digital technologies are being utilized in educational settings and their impact on teaching and learning processes. The study employs a systematic literature review approach, analyzing a range of relevant studies. The findings of the study highlight several key aspects. Firstly, digital technologies have revolutionized the way educational content is delivered, making it more interactive, engaging, and accessible. These technologies offer diverse resources such as online courses, educational apps, and virtual reality tools that enhance the learning experience. Secondly, digital technologies support personalized learning, allowing students to learn at their own pace and style. They also facilitate collaboration and communication among students and teachers, enabling a more interactive and dynamic learning environment. Additionally, the study emphasizes the potential of digital technologies in bridging the educational gap, particularly in underserved areas and remote locations. However, the researchers also acknowledge certain challenges, such as the need for digital infrastructure and digital literacy among educators and students. The research underscores the importance of integrating digital technologies effectively into educational practices, considering pedagogical principles and addressing the associated challenges. Overall, the study provides insights into the significant role of digital technologies in transforming education and improving learning outcomes.

The aim of the study conducted by Lee et al. (2023) is to explore the adoption of smart supply chain and smart technologies in order to improve operational performance in the manufacturing industry. The study focuses on understanding the impact of these technologies on various aspects of operational performance, such as cost reduction, quality improvement, delivery reliability, and flexibility. The researchers conducted a comprehensive literature review and collected data from manufacturing firms to analyze the relationship between the adoption of smart technologies and operational performance. The findings of the study suggest that the adoption of smart supply chain and smart technologies can significantly enhance operational performance in the manufacturing industry. The study provides valuable insights for manufacturing firms looking to leverage these technologies to improve their operations and gain a competitive advantage.

The study conducted by (Triwahyono et al., 2023) focuses on analyzing the role of technological innovation in improving the operational efficiency of Micro, Small, and Medium Enterprises (MSMEs). The researchers aim to understand how technological innovations can positively impact the operational efficiency of MSMEs and contribute to their overall performance. The study utilizes a combination of quantitative and qualitative research methods, including surveys and interviews, to gather data from MSMEs. The findings of the study indicate that technological innovation plays a significant role in enhancing various aspects of operational efficiency, such as production processes, inventory management, customer relationship management, and decision-making. The study emphasizes the importance of MSMEs embracing technological innovations to stay competitive in the market and achieve sustainable growth. The research provides valuable insights and recommendations for MSMEs seeking to leverage technological innovation to enhance their operational efficiency and business performance.

1.11. Research Structure

- ✓ Chapter 1: Introduction
- ✓ Chapter 2: Literature Review
- ✓ Chapter 3: Methodology
- ✓ Chapter4: Resulting and Finding
- ✓ Chapter5: Discussion and Conclusion
- ✓ References

1.12. Research schedule

Chapter Name	Strating	Finishing
Chapter 1: Introduction	Week 1	Week 2
Chapter 2: Literature Review	Week 3	Week 6
Chapter 3: Methodology	Week 7	Week 8
Chapter4: Resulting and Finding	Week 9	Week 11
Chapter5: Discussion and Conclusion	Week12	Week13
References	Week14	Week15

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