



**"The Role of Digital Transformation in Activating the Principles of Digital Governance in Saudi Governmental Organisations "**

"دور التحول الرقمي في تفعيل مبادئ الحوكمة الرقمية في المنظمات الحكومية السعودية "

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## Abstract

The study aimed to identify the role of digital transformation in activating the principles of digital governance within Saudi governmental organisations. The study sample included a group of employees in Saudi governmental organisations, totalling 159 individuals, selected through a simple random sampling method from the study population. The descriptive-analytical method was utilised to conduct the study. The key findings of the study indicated a high level of digital transformation application within Saudi governmental organisations, with a mean value of 4.05. Additionally, the results demonstrated a high level of digital governance application within these organisations, with a mean value of 4.05. The study also revealed a positive, statistically significant positive correlation between digital transformation (digital operations, digital governance, infrastructure, digital values) and the activation of digital governance principles within Saudi governmental organisations at a significance level of 0.05.

The study concluded with several recommendations, including enhancing governmental organisations' capability to implement digital transformation by providing all necessary resources and capabilities. It also emphasised the importance of increasing awareness within governmental organisations regarding the need for digital transformation to improve client service performance.

**Keywords:** Digital Transformation - Digital Operations - Digital Governance.

## Introduction

Digital transformation refers to the process of transitioning and improving operational activities within organisations using modern digital technologies to enhance performance and facilitate access to services. Its primary aim is to streamline and improve daily operations, enabling organisations to adapt to technological advancements and meet customer demands more effectively and efficiently. Implementing digital transformation necessitates fundamental changes in operational approaches and organisational culture, fostering flexibility and responsiveness to technological developments (Al-Awadi, 2020).

Digital transformation offers numerous strategic benefits to organisations, including the ability to analyse vast amounts of data for informed decision-making, instant interaction with customers across various platforms, and enhanced customer satisfaction. Moreover, it reduces operational costs through process automation and paper reduction, promoting environmental sustainability and resource-efficient expansion and development (Sleimi & Bouashi, 2019).

Despite its advantages, organisations face several challenges when implementing digital transformation, such as the high costs of advanced technologies, the need to develop employees' digital skills, and shifting away from traditional workplace cultures. Ensuring data security and addressing cyber threats also pose significant challenges. Overcoming these obstacles requires clear strategies, effective resource investment, and sustainable and secure implementation of digital transformation initiatives (Haroon & Barakat, 2019).

### Relevance of Digital Governance

Digital governance has emerged as a critical concept in response to rapid technological advancements. It has become a cornerstone for organisations, particularly in the wake of global financial crises and economic downturns. The prevalence of corruption has underscored the necessity for robust administrative frameworks that ensure improved performance, transparency, accountability, and a stable investment climate (Abu Ata, 2023).

Digital governance is a transformative approach using advanced digital technologies to manage data, services, and operations within organisations and governments. This concept encompasses diverse practices to enhance efficiency, transparency, and accountability. It employs advanced technologies such as big data, artificial intelligence, and blockchain to improve decision-making and service delivery (Al-Rai, 2021).

### The Link Between Digital Transformation and Digital Governance

The integration of digital transformation and governance represents a strategic step toward achieving institutional transparency and efficiency. While digital transformation simplifies and automates processes using modern technologies, digital governance ensures these technologies are implemented systematically and securely. Governance frameworks set regulations that promote data security and maintain public trust. Additionally, digital governance enhances transparency and accountability, enabling better performance monitoring and strategic decision-making within a safe and sustainable organisational environment (Jabouri, 2024).

### Study Problem

Saudi governmental organisations face increasing challenges in achieving their objectives efficiently and transparently, highlighting the importance of digital governance as a tool to enhance accountability, transparency, and institutional performance. In this context, digital transformation is essential in improving oversight mechanisms and facilitating data-driven decision-making. However, a gap persists in effectively utilising these technologies to achieve the principles of digital governance, necessitating further research and analysis to better understand this relationship (Salem, 2022).

Despite efforts to achieve digital transformation in Saudi Arabia, governmental organisations encounter several challenges in effectively implementing this transformation to enhance digital governance. These challenges include a lack of digital expertise, weak technological infrastructure in specific sectors, and difficulties adapting to rapid digital technology changes. This study raises critical questions about the capacity of digital transformation to strengthen the foundations of governance in these organisations and explores ways to overcome the associated challenges to achieve more effective and transparent public administration.

Building on previous research, such as Saleh (2023), which demonstrated the effectiveness of digital transformation in achieving governance practices in Iraqi banks, and Yusuf (2023), which highlighted its importance in promoting governance and sustainable development, this study focuses on Saudi governmental organisations. Additionally, studies such as Al-Mufeez (2023) have emphasised the role of digital transformation and governance in Saudi educational administrations. Against this backdrop, this study aims to analyse

the role of digital transformation in activating the principles of digital governance within Saudi governmental organisations. By examining the applications of digital transformation, it seeks to assess its benefits in enhancing transparency and accountability and improving institutional and administrative performance.

### **Study Objective**

This study aims to explore the role of digital transformation in activating the principles of digital governance within Saudi governmental organisations by analysing its applications, identifying its impact on governance dimensions, and providing evidence-based recommendations to enhance institutional efficiency and transparency.

### **Research Questions**

To achieve the above objective, the study addressed the following questions:

What is the role of digital transformation in activating the principles of digital governance in Saudi governmental organisations?

### **Literature Review**

#### **Concept of Digital Transformation**

The definitions of digital transformation vary significantly, reflecting the breadth of its impact on human life and its penetration into various industrial, service, and educational fields. This diversity has resulted in multiple perspectives and definitions of the concept.

Al-Harithi (2020) defined digital transformation as the change associated with applying digital technologies to achieve comprehensive changes in work methods and provide better and faster services to beneficiaries. It represents an inclusive and consistent organisational transformation aimed at facilitating administrative procedures and processes to enhance their quality, reaching a stage of digital maturity.

Al-Otaibi (2022) described it as the investment in ideas and behavioural changes to radically transform work methods through leveraging significant technological advancements to serve beneficiaries quickly and efficiently. It provides substantial opportunities to build societies that strive for effectiveness, competitiveness, and sustainability, by radically changing diverse services for consumers, employees, or beneficiaries. It also improves their experiences and productivity through appropriate process chains accompanied by restructuring procedures for activation and implementation.

### **Dimensions of Digital Transformation**

Digital transformation encompasses various interrelated dimensions that collectively drive organisational change and innovation. One critical dimension is digital operations, which form the foundation of digital transformation by reimagining traditional workflows through the integration of advanced technologies. By transitioning from conventional to digital processes, organisations can improve efficiency, reduce costs, and respond more swiftly to market demands. For example, leveraging big data allows organisations to analyse customer behaviour and tailor services to meet specific expectations, while automation and artificial intelligence enhance

internal processes by minimising human error and boosting productivity (Al-Harithi, 2020).

Another key dimension is digital government, which represents a transformative approach to delivering public services and managing administrative processes. Through digital platforms, governments can improve operational efficiency, enhance transparency, and provide easier access to services for citizens and businesses alike. This shift reduces bureaucratic hurdles and enables citizens to complete transactions efficiently and conveniently, reflecting the broader societal benefits of digital transformation (Haroon & Barakat, 2019).

Underlying these advancements is the critical role of digital infrastructure, which provides the technological backbone required to support digital transformation initiatives. High-speed communication networks, cloud systems, data centres, and robust cybersecurity measures form an integrated environment that facilitates the seamless flow of information across various systems and platforms. Without such infrastructure, the full potential of digital transformation remains unattainable (Rashwan & Qasim, 2020).

Equally important are digital values, which act as guiding principles to ensure digital transformation extends beyond technological advancements to promote ethical and responsible practices. These values, such as transparency, credibility, and privacy protection, are essential for building trust between organisations and their stakeholders. By embedding these principles into their operations, organisations can enhance efficiency and productivity and foster a culture of accountability and inclusivity that aligns with broader societal goals (Ghanam, 2022).



Together, these dimensions illustrate the multifaceted nature of digital transformation, highlighting its potential to reshape organisational practices while addressing the evolving needs of a digitally driven society.

### **Concept of Digital Governance**

Digital governance combines the principles of governance and digitisation. Governance refers to a set of rules and regulations that organise relationships among stakeholders within an organisation to ensure rights are protected, transparency is upheld, and unethical practices are minimised. This is done to achieve justice, integrity, and value enhancement for the organisation, financial markets, and the national economy (Banasser & Al-Sayegh, 2020).

Digitisation, on the other hand, involves integrating advanced technologies to achieve greater transparency and enable value chain tracking to serve customers and society responsibly and sustainably. Shahid et al. (2016) described digital governance as an information technology revolution that has created a qualitative shift in the operations of governmental and private organisations. Sharma and Singh (2009) defined it as the public sector's use of information and communication technology to enhance information sharing, service delivery, and citizen participation in decision-making processes, making governments more accountable, transparent, and effective.

### **Dimensions of Digital Governance**

Researchers have offered varying perspectives on the dimensions of digital governance. Shibl et al. (2021) identified administrative, organisational, technological, and human components, while Al-Haroot (2018) and Abidi et al. (2021) highlighted e-governance, e-services, and e-participation. Ben

Sheikh (2021) categorised the dimensions into economic, social, and administrative aspects. For this study, the following dimensions are considered:

**Digital Participation:**

This refers to allowing all stakeholders to participate in decision-making by facilitating access to information and communication technology tools for expressing opinions and suggestions (Fattah & Aboudi, 2021).

**Digital Transparency:**

Transparency involves clarity and openness, allowing the public and stakeholders to access truthful information without concealment or misrepresentation. Organisations must commit to sharing information about their activities and operations transparently using information technology tools (Al-Rai, 2021).

**Digital Accountability:**

Accountability ensures individuals and organisations take responsibility for their actions, reassuring stakeholders that processes align with the public interest (Trawana & Al-Odhliya, 2010).

**Digital Auditing:**

This involves verifying that organisational processes comply with established standards. Effective auditing requires active stakeholder involvement and uses information technology to deliver timely, cost-effective information (Salahuddin & Attia, 2018).

### **Existing Literature on Digital Transformation and Governance**

Several studies have examined the interplay between digital transformation and governance, providing valuable insights into their application across various organisational and regional contexts. For instance, Saqat (2024) explored the application of digital transformation in public organisations, focusing on the Saudi Ministry of Health. Using a descriptive-analytical methodology and a sample of 52 employees, the study revealed that the Ministry's top management provides substantial support for digital transformation efforts. Strategic orientations within the Ministry were shown to transform potential threats into opportunities, facilitating the integration of digital tools in government transactions. Among its recommendations, the study highlighted the need to allocate dedicated budgets to enhance electronic service quality and establish incentive systems to encourage human resource engagement in digital initiatives. This study underscores the critical role of management in driving digital transformation within public institutions.

Similarly, Al-Momani (2024) investigated the impact of digital transformation on institutional performance in international organisations in Jordan. Employing a descriptive-analytical approach, the research targeted a population of 200 organisations focusing on the influence of technological infrastructure, regulatory frameworks, digital skills, and financial resources. The findings revealed a statistically significant relationship between these digital transformation dimensions and institutional performance development. The study recommended fostering effective communication

and encouraging employee participation to build awareness about the benefits of digital transformation. This research complements Saqat's findings by emphasising the importance of resources and employee engagement in ensuring successful transformation processes.

In the context of sustainable development, Yusuf (2023) examined the relationship between digital transformation, digital governance, and financial reporting. The study focused on Egyptian educational institutions, with data collected from 55 faculty members specialising in accounting. Results indicated that adopting modern digital transformation tools positively impacted governance processes and improved the accuracy and transparency of financial reports. The study further suggested that implementing digital governance practices can contribute significantly to achieving sustainable development goals. Yusuf's findings reinforce the notion that digital transformation extends beyond operational efficiency to influence broader organisational goals, including transparency and sustainability.

Further insights were provided by Al-Mufeez and Al-Otaibi (2023), who investigated the governance of digital transformation within educational administrations in Saudi Arabia. Using a descriptive survey approach, their findings highlighted a high degree of implementation of digital transformation governance practices, particularly in operational technologies and resource management. However, they identified areas for improvement, including administrative and security requirements. The study recommended learning from global best practices to update regulatory frameworks and

enhance governance mechanisms. This study provides a focused analysis of the governance dimension, bridging the gap between strategic frameworks and their operational execution.

In a related domain, Trawana (2023) explored the role of digital transformation strategies in enhancing digital leadership at Middle East University in Jordan. Based on the perceptions of 154 faculty members, the study demonstrated that effective digital transformation strategies significantly enhance digital leadership. Recommendations included developing robust strategy at the institutional level to align digital initiatives with leadership goals. This study highlights the importance of strategic alignment in achieving organisational objectives through digital governance.

Finally, Khamis (2021) investigated the relationship between digital transformation and employee performance in Egyptian commercial banks. The study was conducted on a sample of 251 employees and revealed a strong positive correlation between digital transformation and employee performance indicators. The research emphasised the need for banks to invest in digital tools, train employees effectively, and foster a culture that embraces digital innovation. This study reinforces the critical role of workforce readiness in realising the benefits of digital transformation.

Together, these studies emphasise the multifaceted nature of digital transformation and its integration with governance practices. They underline the importance of management support, resource allocation, employee engagement, and strategic alignment in ensuring successful outcomes. However, while these studies provide a comprehensive understanding of

digital transformation and governance, they also reveal a research gap regarding the mechanisms through which digital transformation activates governance principles in Saudi governmental organisations. This gap forms the basis for the current study, which seeks to provide new insights into this critical area.

### **Evaluation of Literature on Digital Transformation and Governance**

Reviewing the previous studies reveals that most of them focused on digital transformation and its impact on digital governance. Some studies specifically examined the relationship between digital transformation and its role in activating the principles of digital governance. This review contributed to shaping the theoretical framework, formulating the study problem, and understanding the nature of digital transformation and its dimensions (digital operations, digital government, infrastructure, and digital values). It also clarified the concept of digital governance and its various dimensions (digital transparency, participation, accountability, and auditing). Furthermore, the review facilitated the development of the study tool (questionnaire), provided references, and confirmed that this study is not a duplication of prior research. This uniqueness distinguishes it as, to the best of the researcher's knowledge, the first study to explore the role of digital transformation in activating digital governance principles in Saudi governmental organisations. While previous studies varied in their objectives, sectors, environments, variables, and methodologies, this study builds on their insights to address specific gaps.

### **Knowledge Gap**

The review of previous studies highlights that many aspects of digital transformation have not been thoroughly explored, particularly its dimensions

and how they influence governance. Additionally, prior studies reveal significant variations in the dimensions of digital governance across different organisations and institutions. This study selects its dimensions based on previous research and seeks to develop and enhance them, applying them in a new context to generate novel findings that benefit future researchers.

## Methods

### **Research Design**

This study utilised a descriptive-analytical design to explore the role of digital transformation in activating the principles of digital governance within Saudi governmental organisations. This design was selected as it enables the systematic collection and analysis of data to describe the current state of digital transformation and governance practices and their interrelations. The descriptive-analytical approach is particularly suited for investigating organisational phenomena, as it provides insights into patterns, relationships, and potential areas for improvement.

### **Study Population and Sample**

The study population comprised employees from Saudi governmental organisations with various administrative and operational roles. A simple random sampling technique was employed to ensure that participants were representative of the population. The final sample included 159 employees, providing a robust dataset for analysis and ensuring the generalisability of the findings to similar contexts within the region.

## Data Collection Tool

A structured questionnaire was developed as the primary data collection tool.

The questionnaire consisted of three main sections:

**Demographic Information:** Captured data on participants' roles, experience, and educational background.

**Digital Transformation Dimensions:** Assessed participants' perceptions of digital operations, digital governance, infrastructure, and digital values.

**Digital Governance Dimensions:** Evaluated the application of digital transparency, accountability, participation, and auditing in their respective organisations.

The questionnaire items were designed based on validated instruments from previous studies and tailored to the Saudi context. Participants' responses were measured using a five-point Likert scale, ranging from "strongly disagree" to "strongly agree. “

## Validity and Reliability

The questionnaire was reviewed by a panel of experts in digital transformation and governance to ensure content validity. Their feedback was incorporated to refine the items for clarity, relevance, and comprehensiveness. A pilot test was conducted with 30 participants to establish reliability, and Cronbach's alpha was calculated for internal consistency. The overall reliability score exceeded 0.80, indicating high reliability.

## Data Analysis

Data were analysed using SPSS software. Descriptive statistics summarised participants' responses, including means and standard deviations. Inferential



statistical methods, such as Pearson correlation analysis, were employed to examine the relationships between digital transformation dimensions and governance principles. Additionally, regression analysis was conducted to identify the predictive power of digital transformation dimensions on governance outcomes. A significance level of 0.05 was used throughout the analysis.

### **Ethical Considerations**

Before data collection, ethical approval was obtained from the relevant institutional review board. Participants were informed about the study's purpose, assured of confidentiality, and given the option to withdraw at any stage without consequences. Informed consent was obtained from all participants before they completed the questionnaire.

### **Results**

#### **Demographic Characteristics of the Study Sample**

The study sample consisted of 159 participants from Saudi governmental organisations. The analysis revealed the following key demographic insights:

**Gender Distribution:** The sample included 55.3% male participants and 44.7% female participants, reflecting a balanced gender representation.

**Age Groups:** The majority (41.5%) of participants were aged 25–35 years, followed by those aged 36–45 years (27.7%). Participants under 25 years constituted 15.7%, while those over 45 years made up 15.1%.

**Educational Qualification:** Most participants held a bachelor's degree (48.4%), followed by diploma holders (33.3%), and those with postgraduate qualifications (18.2%).

**Work Experience:** Participants with less than five years of experience accounted for 41.5%, followed by those with 5–10 years of experience (28.3%), 11–15 years (18.2%), and over 15 years (11.9%).

### Digital Transformation Dimensions

The findings revealed a high level of digital transformation application in Saudi governmental organisations, with significant emphasis on its dimensions: digital operations, digital infrastructure, digital government, and digital values (Table 1).

**Table 1: Summary of Digital Transformation Dimensions**

Dimension	Mean	Standard Deviation	Highest-Rated Statement	Mean (Statement)	Agreement Level
<b>Digital Operations</b>	4.21	0.83	"Digital operations help organisations create innovative and creative services"	4.37	Very High
<b>Digital Infrastructure</b>	4.17	0.91	"Management supports infrastructure to facilitate digital operations"	4.25	Very High
<b>Digital Government</b>	3.98	1.00	"Digital government helps the organisation efficiently perform its"	4.19	High

			productive operations"		
<b>Digital Values</b>	3.92	1.11	"The use of technology in the organisation increases the trend toward creating integrated information systems"	4.03	High

### 1. Digital Operations

Digital operations ranked highest among the dimensions of digital transformation, with a mean score of 4.21. This highlights their critical role in enhancing organisational efficiency and innovation. The statement "Digital operations help organisations create innovative and creative services" received the highest agreement (mean = 4.37), reflecting the strong alignment of digital operations with the development of new services. Other aspects, such as improving operational performance and cost reduction, were also rated highly, underscoring the transformative impact of digital operations on organisational processes.

### 2. Digital Infrastructure

Digital infrastructure scored a mean of 4.17, reflecting its pivotal role in supporting digital transformation initiatives. Among its elements, "Management supports infrastructure to facilitate digital operations" ranked highest (mean = 4.25), demonstrating the importance of leadership in strengthening technological foundations. The findings indicate that robust

digital infrastructure enables seamless connectivity and enhances organisational efficiency.

### **3. Digital Government**

The digital government dimension achieved a mean score of 3.98, illustrating its role in optimising government services and operations. The highest-rated statement, "Digital government helps the organisation efficiently perform its productive operations" (mean = 4.19), highlights the positive impact of digital tools on organisational productivity. However, challenges remain in fully leveraging digital government to improve service delivery and customer satisfaction.

### **4. Digital Values**

Digital values recorded a mean score of 3.92, reflecting their critical role in embedding ethical and cultural aspects into digital transformation efforts. The statement "The use of technology in the organisation increases the trend toward creating integrated information systems" was rated highest (mean = 4.03), emphasising the importance of fostering a digital integration and accountability culture.

### **Digital Governance Dimensions**

The study also revealed a high level of application of digital governance in Saudi governmental organisations, with all four dimensions: digital transparency, digital accountability, digital participation, and digital auditing achieving high scores (Table 2).

**Table 2: Summary of Digital Governance Dimensions**

<b>Dimension</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Highest-Rated Statement</b>	<b>Mean (Statement)</b>	<b>Agreement Level</b>
<b>Digital Transparency</b>	4.23	0.95	"The organisation facilitates access to digital information and data when needed"	4.19	High
<b>Digital Accountability</b>	4.18	1.00	"The organisation takes responsibility for the activities conducted on its website"	4.19	High
<b>Digital Participation</b>	4.15	0.96	"The organisation uses government digital platforms to express employees' opinions and participate in surveys"	4.28	Very High
<b>Digital Auditing</b>	4.10	0.98	"The organisation provides effective electronic communication between	4.25	Very High

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### **1. Digital Transparency**

Digital transparency was the most prominent dimension of governance, with a mean score of 4.23. This reflects the emphasis on ensuring the accessibility and clarity of organisational information. The statement "The organisation facilitates access to digital information and data when needed" ranked highest (mean = 4.19), indicating a commitment to openness and transparency in operations.

### **2. Digital Accountability**

Digital accountability ranked second, with a mean score of 4.18. The statement "The organisation takes responsibility for the activities conducted on its website" received the highest agreement (mean = 4.19), highlighting the importance of accountability in maintaining trust and ensuring compliance with organisational standards.

### **3. Digital Participation**

Digital participation, with a mean score of 4.15, demonstrated the effectiveness of engaging stakeholders through digital platforms. The highest-rated statement, "The organisation uses government digital platforms to express employees' opinions and participate in surveys" (mean = 4.28), underscores the value of fostering collaboration and feedback within organisations.

#### 4. Digital Auditing

Digital auditing scored a mean of 4.10, reflecting its importance in monitoring and verifying organisational processes. The statement "The organisation provides effective electronic communication between departments, promoting knowledge exchange" ranked highest (mean = 4.25), showcasing the role of auditing in ensuring operational integrity and fostering a collaborative environment.

#### Hypothesis Testing

The hypothesis testing (Table 3) results confirmed the significant positive impact of digital transformation on activating the principles of digital governance in Saudi governmental organisations.

**Table 3: Summary of Hypothesis Testing**

Hypothesis	Correlation Coefficient (r)	Explained Variance (R <sup>2</sup> )	Impact Coefficient (b)	Significance (P-Value)	Interpretation
<b>Main Hypothesis</b>	0.992	98.3%	1.282	0.000	Significant positive impact of digital transformation on digital governance.
<b>Digital Operations</b>	0.866	75.1%	5.902	0.000	Significant positive impact of digital operations on governance

<b>Digital Government</b>	0.952	97.1%	4.468	0.000	activation. Significant positive impact of digital government on governance activation.
<b>Digital Infrastructure</b>	0.950	90.2%	5.129	0.000	Significant positive impact of infrastructure on governance activation.
<b>Digital Values</b>	0.970	94.0%	4.084	0.000	Significant positive impact of digital values on governance activation.

### Main Hypothesis

The findings supported the main hypothesis that digital transformation significantly affects governance principles. The model explained 98.3% of the variance in digital governance, with a correlation coefficient ( $r$ ) of 0.992. Each 1% increase in digital transformation was associated with a 1.282% increase in digital governance activation ( $b=1.282$ ,  $P\text{-value} < 0.05$ ).



## Sub-Hypotheses

1. **Digital Operations:** Explained 75.1% of the variance in governance, with each 1% increase leading to a 5.902% improvement in governance activation.
2. **Digital Government:** Explained 97.1% of the variance, with each 1% increase contributing to a 4.468% enhancement in governance activation.
3. **Digital Infrastructure:** Accounted for 90.2% of the variance, with each 1% increase resulting in a 5.129% improvement in governance activation.
4. **Digital Values:** Explained 94% of the variance, with each 1% increase leading to a 4.084% enhancement in governance activation.

The results underscore the significant role of digital transformation in activating governance principles within Saudi governmental organisations. All dimensions of digital transformation, including digital operations, infrastructure, government, and values, were positively correlated with governance outcomes, highlighting the importance of strategic investments in technology, infrastructure, and organisational culture. Similarly, digital governance dimensions of transparency, accountability, participation, and auditing demonstrated high levels of implementation, reflecting the growing emphasis on efficiency, trust, and collaboration in the digital era. The findings validate the research hypotheses and provide actionable insights for enhancing governance practices through digital transformation.

## Discussion

### **Overview of Findings**

This study identified a strong positive relationship between digital transformation and the activation of digital governance principles in Saudi governmental organisations. The results demonstrated a high level of application across the dimensions of digital transformation, including digital operations, infrastructure, government, and values. Simultaneously, digital governance dimensions—transparency, accountability, participation, and auditing—significantly improved organisational governance. These findings align with global trends emphasising the integration of digital transformation into governance frameworks to enhance efficiency, transparency, and accountability (Yusuf, 2023; Al-Mufeez & Al-Otaibi, 2023).

### **Interpretation of Digital Transformation Dimensions**

#### **Digital Operations**

Digital operations emerged as the most impactful dimension of digital transformation, achieving the highest mean score. The ability of digital operations to foster innovation and enhance operational performance underscores their critical role in improving organisational outcomes. For instance, the statement "Digital operations help organisations create innovative and creative services" ranked highest among all digital transformation factors, reflecting the alignment of operational changes with innovation objectives. This finding is consistent with the conclusions of Al-Harithi (2020), who emphasised that digital operations contribute to enhancing service quality, efficiency, and customer satisfaction.

### **Digital Infrastructure**

The study highlighted the foundational importance of digital infrastructure, with high levels of application across the surveyed organisations. Effective infrastructure facilitates seamless integration of digital tools, enhances interconnectivity, and supports operational efficiency. The role of management in strengthening infrastructure, as reflected in the statement "Management supports infrastructure to facilitate digital operations," underscores the importance of leadership commitment in achieving digital maturity. These findings corroborate the results of Rashwan and Qasim (2020), who highlighted robust infrastructure as a cornerstone for sustainable digital transformation.

### **Digital Government**

Digital government was identified as a critical enabler of organisational productivity and service delivery. However, its lower ranking relative to other dimensions indicates that some challenges may hinder its full potential. These challenges could include resistance to change, limited adoption of digital platforms, or the complexity of integrating digital tools into traditional governance structures. Haroon and Barakat (2019) similarly noted that while digital government holds promise, its implementation requires substantial training, infrastructure, and change management investments.

### **Digital Values**

Digital values scored the lowest among the dimensions of digital transformation, although they still demonstrated a significant positive impact. Embedding digital values, such as transparency, inclusivity, and ethical

practices, into organisational culture fosters trust and accountability. The finding that "The use of technology in the organisation increases the trend toward creating integrated information systems" ranked highest within this dimension aligns with Ghanam's (2022) assertion that promoting a culture of digital responsibility enhances organisational governance and stakeholder trust.

## **Interpretation of Digital Governance Dimensions**

### **Digital Transparency**

Digital transparency ranked as the most significant governance dimension, with organisations prioritising accessibility and clarity of information for stakeholders. The statement "The organisation facilitates access to digital information and data when needed" received the highest agreement, reflecting a commitment to openness and trust-building. These results align with Al-Rai (2021), who highlighted transparency as a core element of effective governance, fostering accountability and stakeholder confidence.

### **Digital Accountability**

Accountability was identified as a crucial factor in governance activation, with a strong emphasis on organisations taking responsibility for their actions. The highest-ranked statement, "The organisation takes responsibility for the activities conducted on its website," underscores the importance of maintaining compliance and ethical standards. This finding resonates with Trawana and Al-Odhliya (2010), who argued that digital accountability mechanisms ensure adherence to organisational policies and enhance public trust.

### **Digital Participation**

The findings on digital participation highlight its role in engaging stakeholders and fostering inclusivity. Organisations actively used digital platforms for surveys and collaborative activities, as reflected in the statement, "The organisation uses government digital platforms to express employees' opinions and participate in surveys." These results align with Fattah and Aboudi (2021), who emphasised that stakeholder engagement through digital tools enhances transparency and collaboration, ultimately improving decision-making processes.

### **Digital Auditing**

Although digital auditing ranked lowest among governance dimensions, it demonstrated a notable impact on governance activation. The use of modern auditing systems and effective communication between departments were key contributors to its success. Salahuddin and Attia (2018) highlighted that digital auditing ensures compliance, improves operational integrity, and facilitates error detection, reinforcing its significance despite its lower ranking.

Overall, the results of this study are consistent with previous research, such as Yusuf (2023) and Al-Mufeez and Al-Otaibi (2023), which demonstrated the positive impact of digital transformation on governance practices. However, this study uniquely focuses on the holistic integration of digital transformation dimensions in Saudi governmental organisations, comprehensively analysing their individual and collective impacts on governance principles. Furthermore, it highlights the interplay between digital transformation and governance dimensions, filling a critical gap in the literature.

## Implications for Practice

**Investment in Infrastructure:** Strengthening digital infrastructure remains critical for enabling seamless operations and supporting advanced governance tools.

**Emphasis on Values and Culture:** Promoting digital values can foster trust and accountability and ensure that technology adoption aligns with ethical standards.

**Focus on Training and Awareness:** Organisations should invest in training programs to build employees' digital competencies and overcome resistance to change.

**Enhancement of Digital Platforms:** Expanding the scope and accessibility of digital government platforms can improve service delivery and stakeholder engagement.

## Limitations and Recommendations

This study, while insightful, has some limitations. The focus on a specific set of Saudi governmental organisations may limit the generalisability of the findings. Additionally, the rapid pace of technological change requires continuous reassessment of digital transformation practices. Future research should explore the application of these dimensions in diverse organisational contexts and include longitudinal studies to account for dynamic changes in digital technologies and governance frameworks.

## Conclusion

This study demonstrated the significant role of digital transformation in activating governance principles within Saudi government organisations.

Dimensions such as digital operations, infrastructure, government, and values were found to positively influence transparency, accountability, participation, and auditing. Digital operations and infrastructure were particularly impactful, highlighting their importance in enabling organisational efficiency and innovation.

The findings emphasise the need for strategic investments in infrastructure, embedding digital values into organisational culture, and expanding the accessibility of digital platforms. While the study provides valuable insights, its focus on Saudi organisations limits its generalisability. Future research should explore diverse contexts and consider longitudinal approaches to account for the dynamic nature of digital transformation.

In summary, the study highlights digital transformation's transformative potential for strengthening governance frameworks and offers actionable insights for policymakers and organisational leaders.

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