

Digital Transformation and Competitive Advantage of the Public Sector in Oman: A Capability-Based Conceptual Framework

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Abstract: - This study critically analyses how digital transformation relates to competitive advantage in Oman public sector by creating a theoretically based conceptual framework. The systematic literature review methodology was chosen, and the study synthesises recently published scholarly works to determine three core areas of capability, such as digital infrastructure preparedness, digital innovation, and human capital development. The conceptualisation of the research based on the literature and theory of Resource-Based View, Dynamic Capabilities Theory, and Open Innovation Theory aligns with the conceptualisation of the domains as strategic and interdependent drivers of institutional competitiveness. The results indicate that though digital transformation projects in Oman have enhanced efficiency in the services and partnership with the citizens, a drastic disparity in the ability integration and empirical confirmations exists. This study presents an integrative model that is specific to the Omani population sector and presents policy-relevant evidence to aid in the actualisation of the Oman Vision 2040.

Key-Words: - Digital Transformation, Competitive Advantage, Public Sector, Resource-Based View, Dynamic Capabilities, Open Innovation, Digital Infrastructure Readiness, Human Capital Development, Oman.

Received: September 22, 2025. Revised: January 16, 2026. Accepted: March 15, 2026. Published: June 22, 2026.

1 Introduction

In light of the rapid digital transformation witnessed by countries around the world as we enter the era of the Fourth Industrial Revolution, digital transformation has become an indispensable strategic necessity, especially for government service institutions seeking to enhance their competitive advantage and improve the quality of their services. The Sultanate of Oman is at the forefront of countries that have adopted digital transformation as a key driver of sustainable development in government institutions. This is in addition to building a knowledge-based economy based on innovation and modern technology. Furthermore, this strategy supports Oman Vision 2040, the country's ambitious national vision, [1]. Global and regional reports indicate that countries that have invested in digital transformation have achieved

significant improvements in their competitive advantage. This has also improved the quality of government services, operational efficiency, and citizen satisfaction. For example, a study by the Organisation for Economic Cooperation and Development (OECD) showed that enhancing the digital and development capabilities of digital infrastructure leads to an improvement in the digital competitiveness index by 20-30% within five years of adopting integrated digital strategies, [2].

Developing human capital's digital competencies is also one of the most important pillars of digital transformation success. The Omani Ministry of Labour emphasises the need to build professional skills in modern technologies through sustainable training programs that keep

pace with the requirements of the digital labour market. According to the World Bank's 2023 report, developing digital human capital enhances organisations' ability to embrace innovation and effectively manage transformational change, leading to a 15-20% increase in productivity, [3]. Furthermore, developing an integrated digital infrastructure, including high-speed communication networks, cloud computing systems, and advanced cybersecurity protocols, is vital to providing a secure and effective digital environment. Oman's National CERT stands out as a leading entity in ensuring digital protection, which enhances user confidence, [4].

Official statistics show that the number of e-government services has increased by 40% over the past three years, contributing to a 35% reduction in transaction processing time. Administrative and technical innovation also represents a key pillar in driving digital transformation, as government institutions rely on developing smart applications and using artificial intelligence and data analysis technologies to enhance user experience and improve decision-making, [5]. For example, the Ministry of Social Development launched smart programs to analyse beneficiary data, facilitating the provision of personalised and rapid services and leading to a 25% increase in beneficiary satisfaction, according to the 2024 Government Performance Report. These pillars are intricately linked to the directives of Oman Vision 2040, which emphasises the importance of digitalisation as a fundamental pillar for promoting good governance and achieving sustainable competitiveness, [6]. These pillars represent a balance between human, technical, and creative elements and contribute to overcoming the cognitive, technical, and cultural challenges that may hinder the implementation of digital transformation strategies. Considering this, this study seeks to analyse the impact of these three pillars on enhancing competitiveness in the Omani government sector while providing practical recommendations to enhance their implementation and achieve maximum effectiveness.

The literature has documented a number of studies that have indicated quantifiable results related to digital transformation programmes. Chosen examples of these reported outcomes are summarised in Table 1.

The modern world appears to be drifting towards the Fourth Industrial Revolution, and this trend has triggered it to make digital transformation a strategic necessity in keeping businesses afloat and relevant, including government agencies across the globe, [7]. In the Sultanate of Oman, digitalisation is at the centre of Oman Vision 2040 with the intention of elevating the

quality of services, enhancing the efficiency of operations, and ensuring the contentment of the citizens by relying on innovation, smarter infrastructure, and better human capital, [8], [9]. Due to this, agencies are moving towards the adoption of advanced technologies such as artificial intelligence, big-data analytics applications and cloud computing, which would enhance transparency and sharpness in the decision-making, [10], [11].

Table 1. Examples of Reported Digital Transformation Outcomes in Literature

Study	Context	Reported Outcome
Shannaq & Al Shamsi (2024)	Digital transformation policies	20–30% improvement in digital competitiveness
Alshubiri & Hammami (2025)	Digitalisation and organisational productivity	15–20% increase in productivity
Government performance reports cited in the literature	E-government service delivery	35% reduction in transaction processing time
Elshaiekh, Al-Hijji, Shehata, & Alrashdi (2023)	Smart data analytics in public services	25% increase in beneficiary satisfaction

Source: created by the authors

Despite the visible improvement, it is still difficult to be fully prepared to live in the digital world. Lack of investment in infrastructure, inadequate skills and all forms of innovation are still manifesting as barriers, [12], [13]. Research implies that well-developed digital plans have the potential to improve the performance of the public sector by accelerating the delivery of its services, improving security and enhancing personalisation of services, [14], [15]. Still, fierce investigation concerning the way that those drivers create competitive advantage in the government sector of Oman is minimal, [16]. The given project closes that gap by focusing on interactions between digital infrastructure, innovation, and human capital in determining the competitive standing of the Omani public sector, and providing policymakers with recommendations supported by specific findings.

Despite Oman Vision 2040 clearly stipulating the nation's commitment to digital transformation, processes continue to realise the potential of its digital programs to create an enduring competitive edge in public-sector institutions. The Resource-Based View emphasises the significance of internal capabilities, and the Open Innovation Theory does the same by focusing on the significance of external collaborations. Practically, the agencies of the Omani government often exhibit disjointed integration of digital infrastructure, practices of innovation, and human-capital building, [17], [18]. According to comparative analysis, the states that allocate their assets in a balanced way in these areas achieve better results in terms of institutional swiftness and excellence of services, [19], [20].

The readiness of digital infrastructure in Oman is heterogeneous, and there are clear differences in the capabilities of the networks, interconnectivity, and resilience to cybersecurity, [21]. Furthermore, barriers to the adoption of digital innovation are based on organisational culture and leadership, [22], [23]. The evolution of human capital is marred by a lack of skills in new technologies, and accordingly restricts the possibilities of adaptation, [24].

The existing sources do not provide a comprehensive empirical study of the interaction between these three drivers, their interdependence and relation to increases in the competitive advantage of the Omani public sector, [25]. Without such evidence, policymakers will be doomed to fail to exploit the full power of digital transformation to achieve excellence in governance, efficiency, and citizen satisfaction. This gap in the literature will be filled with a data-driven, theoretically grounded analysis presented in the current study.

2 Literature Review

2.1 Introduction to Digital Transformation and Competitive Advantage

Digital transformation (DT) is gradually identified as a strategic enabler of competitive advantage (CA) in the public sector, yet studies deviate in how they conceptualise and quantify this relationship. [23] have developed the position that in the Omani governance, transparency, participation, and collaboration are the major effects of DT, where the competitive advantage is achieved via the trust-building process and not only efficiency. Conversely, [21] affirm that the role of information systems in government banks to enhance competitive advantage is directly linked to the

performance of operations, hence the importance of technology contribution to direct productivity.

Other contributors propose a more integrative view. Another argument put forward by [20] is that the workforce performance due to the implementation of DT helps achieve institutional agility, which is congruent with the vision elaborated by [16] regarding innovation governance as a precondition to a sustainable competitive advantage. Such conclusions, nevertheless, contrast with those of [14], who disclose that the issue of infrastructure readiness does not necessarily ensure competitiveness when it is not combined with process reengineering and the use of innovation.

[12] also argue that behavioural and entrepreneurial orientations mediate the DT CA correlation and make human factors very important in transforming DT to competitive advantage. To some extent, the literature is agreed upon on the possibility of digital transformation, yet divided on the most efficient mechanisms; whether technology-related, organisational, or hinged in human capital-related mechanisms, through which digital transformation settles the competitive advantage in the public sector of Oman.

2.2 Underpinning Theories and Key Models

2.2.1 The Resource-Based View (RBV) and the Internal Capabilities

In the modern resource-based view (RBV) literature, there is an agreement that sustainable competitive advantage hinges on resources valued, rare, inimitable and non-substitutable (VRIN). Digital transformation is getting more and more recognised as one such tool in which such abilities can be nurtured. This assumption is supported by empirical research conducted within the Omani setting: [26] report that information systems serve as strategic resources, which allow government banks to surpass competitors in terms of their operational efficiency and service delivery quality. [25] also offer a similar line of questioning, citing workforce digital skills as a key internal asset that directly adds to organisational agility.

However, the internal focus of strengths has been criticised by the RBV. As observed by [27], despite the developed digital infrastructure in Omani ports, they perform below the global average when the level of innovation adoption and third-party collaboration is low. This fact echoes

[1], who believe that to take full advantage of digital resources, it is imperative to have an entrepreneurial orientation and adaptive culture.

Summarily, the RBV provides us with a useful conceptualisation of the role digital infrastructure, innovation capacity and human-capital building play as strategic assets. However, critics have cautioned that without the means to renew and adapt to change, our digital asset faces the risk of being rendered obsolete in the rapidly evolving digital environment. Based on that, RBV should be enhanced with dynamic views in order to describe the effect of digital change on competitive advantage to the full measure.

2.2.2 Open Innovation Theory and the Strategic Value of External Collaboration

The Open Innovation Theory (OIT) contends that the successful strategic application of both external and internal knowledge sources is a determinant factor in enhancing innovation performance and maintaining the competitive advantage. [10] reveal that in the context of the Omani public sector, open government efforts, which possess the characteristics of transparency, citizen engagement, and inter-agency cooperation, drive knowledge sharing between agencies and stakeholders. Accordingly, such an exchange enables the success of the digital transformation programmes. This opinion is supported by [7], who believe that multi-sectoral incorporation of new technological processes bears considerable economic and institutional dividends.

Nevertheless, not all empirical studies place the same emphasis on external cooperation. According to [11], without strict innovation governance systems, the organisations that are based in the government sphere might face inefficiencies in incorporating outsourced technologies and practices. In line with this, the study by [24] demonstrates how regulatory hurdles and interoperability issues restrict the impact of collaborative innovation within the shipping sector despite the high rate of technological preparedness.

By contrast, [26] present evidence showing that when collaborative networks are combined with a high likelihood of entrepreneurial orientation, digital innovation leverages competitive advantage through the use of collaborative networks. All these possibilities give us an idea that OIT, even though a convincing road towards the exploitation of external cooperation, will not work as well in governmental environments of Oman unless adequate levels of absorptive capacity, effective governance frameworks, and a culture of embracing external streams of knowledge are present.

2.3 Dynamic Capabilities: Interfacing Internal Strengths and External Responsiveness

Dynamic Capabilities Theory (DCT) enlarges the Resource-Based View, putting primary emphasis on the ability of an entity to combine, create, and recombine in- and outward competencies as a response to environmental turbulence. In an example of the Omani public sector, [10] have proved that the higher the competitive advantage realised by an institution, the better that institution has been able to proactively adjust processes, redeploy resources, and reorganise structures according to ever-changing technology needs. A similar conclusion is made in the study by [12] that states that e-government initiatives enhance the responsiveness and empowerment of employees, which positively enhance service delivery.

However, not every piece of empirical data supports such positive projections too harmoniously. As noted by [16], although Omani ports invested heavily in the digitalisation of their infrastructure, they failed to improve competitiveness due to the organisational rigidity observed. Similar conclusions are reinforced by [2], who state that picking foreign technologies, but lacking a command of internal absorptive capacity, results in choppy transformation results.

In contrast, [4] outline behavioural characteristics, namely risk-taking and proactive innovation, as being key variables capable of enhancing the dynamic relationships between the market needs and digital resources, which in turn will increase the competitive advantage. The literature taken as a whole implies that, on the one hand, digital resources present the fundamental substrate on competitiveness, but on the other hand dynamic capabilities determine whether this resource base there will be in the world of highly dynamic environments remain strategically strategic and influential.

2.4 Digital Infrastructure Readiness

2.4.1 Defining Digital Infrastructure

Digital infrastructure refers to the main technological infrastructure, including broadband networks, cloud computing, data centres and cybersecurity frameworks, on which digital services are delivered. [1] develop a conceptual context from the Omani public sector perspective,

in which digital infrastructure is considered a key enabler of institution competitiveness, associated with a larger economic development agenda. This perception is in line with [20], who point out the necessity of regulatory harmony and interoperability in order to get the benefit of the infrastructure investments in terms of operational performance.

Nevertheless, other theorists broaden the term to include physical and technical resources. [19] maintain that institutional policies, institutions of governance, and service delivery platforms must be viewed as part of the whole since they define how the technology may be used successfully. This is further strengthened by [14], who identify collaborative leadership as another factor, which helps determine the extent of infrastructure support of the e-government performance, implying that leadership capacity is as important as hardware or software ones.

Comparative insights from [7] suggest that infrastructure preparedness is directly related to innovation in digital payment methods and fintech in the financial sector of Oman, and the infrastructure arrangements in some areas can determine the level and speed of change. Such a wider conceptualisation highlights the fact that digital infrastructure is a technological and strategic resource.

2.4.2 Readiness Gap in Oman and Comparative International Experiences

Although investment in digital infrastructure has been high, the readiness of the digital infrastructure in Oman indicates gaps between sectors and regions. As [5] remark, other governmental activities have been less supportive of bringing infrastructure together with innovation policies, as tourism has recently been the winner of governmental technological investments. Such sectoral asymmetry shows more general coordination problems that [7] highlight when noting that competitiveness gains will involve coordinated and comprehensive digital approaches.

The urgency of bridging these gaps can be spotted through international comparisons. The argument by [11] is that the approaches to using infrastructure to innovate performance enjoy quick adjustment to changes in the market conditions, whereas the Omani evolution is paralysed by decentralised use. Correspondingly, [27] note that inequality in the preparedness of higher education to embrace digital learning platforms inhibits the emergence of a digitally skilled workforce in the public sector, which is a critical change mission driver.

The regional approach by [22] indicates that the economies of states with robust inter-agency digital

connectivity perform better than those where digital infrastructure is siloed, a tendency replicated in the governmental system of Oman. Moreover, without the synchronisation of infrastructure preparation and organisational innovative capability, the improvement of competitive advantage can be shallow, according to [16]. All of the above findings lead to the conclusion that the solution to fill the readiness gap in Oman is an integrated approach to infrastructure planning, sectoral coordination and alignment with strategies of innovation and human capital.

2.5 Digital Innovation

2.5.1 Conceptualising Digital Innovation

Digital innovation is not solely about adopting technologies but producing new processes, services, and business models as well that bring value and competitiveness. [13] points out that digital innovation within government institutions in the Omani context is frequently step-by-step and involves automation of processes, rather than the redesign of services. [10] instead suggest that oil and gas (among other industries) have been more strategic in exploiting digital innovation, incorporating advanced analytics and AI to foster efficiency and resilience, which may indicate an innovation maturity disparity across different types of regions.

According to [8] the interaction of digital innovation and workforce skills must also be considered to enhance the aspect of adopting technology because, without the combination of skills and a developing culture of adaptation, the technology is not enough, as some individuals may always need to embrace the concept of technology integration. Likewise, [6] exemplify that the development of competitive advantage in government banks in Oman is realised when digital tools are paired with the strategic organisation processes, which confirms the importance of matching the infrastructure with the innovation practices.

In comparison, [2] demonstrate that, according to international standards, it is revealed that such a process as integrating into digital initiatives the option of user-centric design and decisions based on data obtained should be embedded, which is still a young practice in Oman. Taken together, these studies indicate that the conceptualisation of digital

innovation needs to encompass technological, human, and organisational components, and the actual competitive content is unleashed when innovation is utilised strategically to fulfil the institutional objectives.

2.5.2 Drivers of Digital Innovation: Leadership, Corporate Culture, and Adoption of Digital

Leadership, organisational culture, and the use of digital technologies are significant in effective digital innovation in the institutions of the public sector. [4] suggest that transformational leadership creates innovation by building a commonly shared vision and encouraging employees to accept the new technologies, [6] notes that transformational leadership is necessary to ensure effective digital initiatives no longer exist in silos and provide a competitive advantage.

Corporate culture, too, becomes a critical factor. [8] observe that hierarchical or risk-averse Omani organisations have difficulties with digital solutions innovations. In contrast, [12] demonstrate that the oil and gas industries have adaptive and collaborative cultures that drive experimentation and spur the use of smart technologies and AI. Similarly, [6] points out that an institution's receptiveness to learning, teamwork, and knowledge sharing directly influences the success of the innovation strategies pursued.

Finally, the process of digital technology adoption is not only a technical question but also one that is combined with organisational readiness. [3] show that regulatory alignment and user engagement are foundational to successful digital implementation in shipping, whereas [8] emphasises that training and skills development are key to maintaining digital transformation. The combination of these drivers implies that leadership, culture and technology adoption should go hand in hand in order to bring digital innovation to fruition in Oman as a competitive advantage.

2.6 Human Capital Development

2.6.1 Defining and Contextualising Human Capital Development

Human capital development (HCD) is an effort to increase the level of skills, knowledge and competencies of employees to support organisational performance and organisational proficiencies to adjust to the changing conditions. [10] point out that the role of HCD within the context of the Omani public sector is shifting towards positioning it as a way of enabling the digital transformation on a strategic level, directly associating the digital competencies of employees with the

competitiveness of the institutions. Conversely, [9] believe that although the technical skills training aspect is a focus area in industries like those in oil and gas, there is a lack in the softer skills (innovation mindset, problem-solving, etc), which hinder the realisation of the potential of digital programs.

Comparative research identifies situational difficulties. Demonstrating that institutions of higher education in Oman play a vital role in developing digital competencies in alignment with The Vision 2040, [11] indicate that there is a lack of correspondence between academic preparation and organisational demands. Likewise, [13] observes that, despite e-government efforts, public-sector employees are likely to undergo ongoing upskilling to keep pace with changing technologies. [16] further indicate that international standards advocate a multidimensional approach that combines human capital development, innovation culture, leadership support, and preparedness for digital infrastructure, which is still emerging in Oman.

All these insights point to the fact that human capital development is neither a training exercise nor a strategic, situation-sensitive process. Efficient HCD coordinates technology skills, innovation potential and organisational culture in order to take advantage of the competitive advantage of digital transformation to the full.

2.6.2 Comparative Reflections and Omani-Specific Challenges

Although the human capital development is seen worldwide as a driver of a digital transformation, Oman has its unique challenges in aligning workforce resources with the strategy-relevant digital goals. [14] notes that, post-COVID-19, Omani organisations were not able to retrain their employees quickly, and there was a digital competence deficiency in comparison with regional neighbours. Equally, [17] remark that government banks in Oman were using digital tools more slowly, with less employee preparedness than measured in comparative international research, which implies that agile workforce training plans produce enormous boosts in digital competitiveness.

Other factors, such as culture and structure, add to problems. [19] point out that innovation-driven skill development in Oman is hampered by

hierarchical organisational frameworks, unlike the collaborative settings that characterise human capital integration with innovation ecosystems in other Gulf countries. Furthermore, [21] claim that regulatory systems and strategic orientation of human capital programs are underdeveloped in Oman, which cripples their potential implications on cross-company performance.

Nevertheless, there are signs of an increasing awareness to address the readiness gap, with projects like improvements of higher education digital training provision [24] or e-government skills education improvement [17]. Omani reality, thus, underlines the significance of a comprehensive strategy where technical training, innovation culture, and leadership embrace can turn human capital into a generator of competitive advantage.

2.7 Competitive Advantage in the Public Sector

2.7.1 Institutional Agility and Digital Transformation Effectiveness

One of the key determinants of the success of digital transformation is institutional agility as measured by the capacity of an organisation to respond quickly to changes in technology, environment, and even the regulatory environment. [20] postulates that flexible organisations can use digital infrastructure and innovation to increase responsiveness, but that harder structures take longer to adapt and experience less competitive benefit. In the Omani context, [1] show that the implementation of e-government programs has resulted in operational efficiency; however, on the other side, institutional inertia and the hierarchical decision-making process slow down immediate adaptation to emerging technology.

Comparative research indicates that the results of digital transformation arrive sooner in countries with high institutional agility, with flexible governance systems and active leadership [6]. Al-Ajmi et al. (2026) report that the slow uptake of the novice digital tools is highly common in Oman because of a fragmented coordination process across departments, which narrows the aspect of the transformation initiatives. [9] also underline that the rule of transparency, collaboration, and participation is crucial in increasing the agility in the functioning of public institutions to operate effectively in response to citizen demands. Collectively, these studies come close to saying that the Omani institutions have done well in terms of absorbing digital, but the production of competitive advantage needs to make the agility practice part of organisational and align human

capital, infrastructure and capacities of innovation to ensure constant responsive transformation of being digital.

2.8 Empirical Gaps and Research Justification

Although digital transformation has been receiving increased research in Oman, empirical gaps exist, especially when it comes to examining its effect on competitive advantage in the public sector. Although [9] and [12] explore readiness and digital infrastructure, they tend to dwell upon specific aspects of transformation and fail to create a complete analytical framework behind human capital development, digital innovation, and infrastructure. Similarly, [14] evaluate digital tools in government banks, but the institutional context and generalisability of the findings by category of bank could still use greater development.

Secondly, comparative research has found that Omani governmental institutions are not at the cutting-edge levels of international standards regarding the synchronicity of their digital strategies with workforce aptitudes and flexible organisational ways of working, [11], [14]. Despite promising localised results on programs such as e-government services and the provision of digital skills training [9], there has not been empirical research tying these drivers directly to any actual results of competitive advantage.

The study fills the research gaps by creating a conceptual framework that combines the digital infrastructure preparedness, digital innovation, and human capital development as the primary sources of competitive advantage within the Omani government. Instead of carrying out empirical testing, the research is a synthesis of existing literature based on the systematic review methodology to advance theoretically consistent associations between these constructs. The framework aims to inform future empirical research, which can test the suggested relationships by using organisational data of the public sector institutions in Oman.

2.9 Hypothesis Development

H₁: Digital infrastructure has a positive effect on the competitive advantage of public sector institutions in Oman.

H₂: Digital Innovation positively influences the competitive advantage of public sector institutions in Oman.

H₃: Human capital development significantly contributes to the competitive advantage of public sector institutions in Oman.

H₄: Organisational innovation capability mediates the relationship between digital infrastructure readiness and competitive advantage.

H₅: Human capital development mediates the relationship between digital infrastructure readiness and competitive advantage.

H₆: The combined interaction of digital infrastructure, digital Innovation, and Human capital development significantly predicts competitive advantage in the Omani public sector.

3 Methods

The study follows a systematic literature review (SLR) approach in order to investigate the variables influencing the competitive advantage in the public sector, with a specific focus on the digital transformation of the Sultanate of Oman. The review dwells upon three constructs, which were found in the literature: digital infrastructure readiness, digital innovation, and human capital development.

Relevant studies were identified with the help of the structured search strategy. It undertook a literature search in a number of academic databases such as Scopus, Web of Science, Google Scholar, ScienceDirect and Springer Link. These databases were chosen based on the fact that they have high-quality peer-reviewed publications in the area of digital governance, information systems, and public administration. The search strategy was an integration of various keywords that were concerned with the core constructs of the study. The main search words were combinations of digital transformation or e-government; competitive advantage or institutional performance; digital infrastructure, digital innovation, or human capital development; public sector or government institutions.

The search was narrowed down to 2022-2026 because this is the period when the world is experiencing a tremendous growth in digital transformation efforts and policy formulations that are associated with the Oman Vision 2040. In order to achieve methodological rigour, inclusion and exclusion criteria were used in the screening process, as shown in Table 2.

Table 2. Inclusion and Exclusion Criteria

Criteria	Inclusion	Exclusion
Publication type	Journal articles, scholarly book chapters and doctoral dissertations by peer-reviewed sources. Studys that deal with digital transformation, e-government, digital innovation, digital infrastructure, or human capital development.	Opinion articles, non-academic source.
Research focus	Studies concerning institutional activities of the public sector or governmental organisations.	Research that is not related to digital transformation or organisational competitiveness.
Context		Research that exclusively concentrates on irrelevant settings in the private sector.
Publication period	2022–2026	Studies published before 2022

Source: created by the authors

4 Findings

Based on an extensive literature review, prior studies have shown that digital infrastructure, digital innovation, and the development of human capital can be classified as the single most influential determinants of competitive advantage within the realm of the public sector. Such variables are always found to be some of the most influential values of increased institutional performance, organisational responsiveness, and generation of public value within the government institutions.

There is evidence that a strong digital infrastructure facilitates efficient service provision as well as operational flexibility, which makes it the building block of favourable digital transformation projects. Leadership commitment, organisational culture, and technology adoption are facilitated through digital innovation, thereby enabling adaptive strategies and citizen-based strategies. An equivalent outcome in the case of human capital development is reinforcement of the skills and abilities of employees by enhancing their ability to undertake new practices and creating institutional competitiveness.

As part of this synthesis, the researchers put forward a research model that combines all three independent variables and theorises their joint effects on competitive advantage in the Omani public sector. The model aligns competitive advantage as the dependent variable with the strategic interaction influencing the effect of the infrastructure readiness, innovative capacity, and development of human capital.

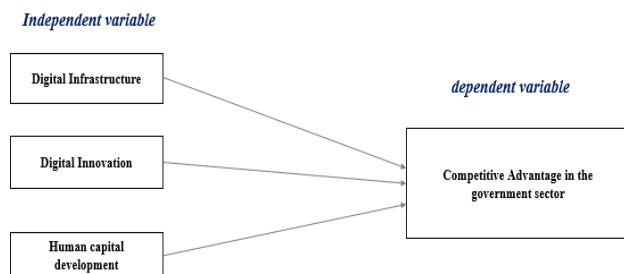


Fig. 1: Conceptual Framework

Source: created by the authors

Figure 1 shows the proposed conceptual framework in this study. According to the model, the readiness of digital infrastructure, digital innovation, and human capital development are introduced as important independent variables affecting the competitive advantage of the public sector institutions in Oman. Digital infrastructure supports digital services, digital innovation supports the implementation of new technologies and better organisational processes, and the development of human capital increases the level of digital skills and abilities of employees. When combined, these aspects allow enhanced service efficiency, responsiveness, and institutional performance, enhancing the competitive advantage of government organisations.

5 Theoretical Implications

This research has various theoretical contributions towards public-sector competitive advantage. This synthesises together digital infrastructure, digital innovation, and human capital formation in one conceptual model, building upon the existing frameworks that tend to address these constructs separately. The results confirm and counteract the Resource-Based View (RBV) and Dynamic Capabilities Theory, and confirm that internal strengths, combined with adaptive innovations, adaptive systems and positive human capital, strongly augment institutional competitiveness. Moreover, the research provides empirical depth concerning Open Innovation Theory,

given that it underlines the mediating influence of organisational innovation capability in the study of the governmental regime. In placing these constructs within the Omani government setting, it similarly adds regional insights, one that has been perceived to exist in terms of empirical gaps. On the whole, the research confirms the necessity of considering technological preparedness, human capital, and innovation processes as inextricable sources of competitive advantage, which can be a solid basis to advance the theoretical contributions of e-governance and the administration literature.

6 Practical Implications

The results of this study also have significant practical implication to the policymakers and managers in the public sector in Oman and other developing environments. To begin with, there is a need to invest in digital infrastructure to enhance efficiency in operations, delivery of services, and agility of institutions. Second, institutional responsiveness and an increase in citizen satisfaction can be made through leadership support, supportive organisational culture, and strategic investment in new technologies. Third, enhancing human capital formation will ensure that the employees have digital skills and competencies to embrace and maintain innovative practises. Notably, the three factors cannot be discussed separately; their joint application would make the digital transformation strategy more effective and sustainable. These insights can then help the institutions in the public sector to create specific capacity-building programmes, reinforce digital transformation programmes, and facilitate innovation-oriented policies. Finally, these initiatives can result in the increase of the competitive edge of governmental institutions, the creation of a wider scope of social value, and the realisation of the long-term development goals of Oman Vision 2040.

7 Conclusion

This study has critically explored determinants of competitive advantage within the Omani public sector with regard to digital infrastructure, digital innovation, and development of human capital. The research created the outcome through a systematic

literature review that these factors are supportive of high institutional performance, responsiveness, and creation of public value. These results emphasise the significance of internal capacities and external needs convergence, which highlights theoretical approaches to this problem, including the Resource-Based View, Dynamic Capabilities, and Open Innovation, within the sphere of e-governance. In practice, the study lays out practical policy options that policymakers can take, such as investing in strong digital infrastructure, building an organisational culture of innovation, and human capital competencies. Additionally, the study fills theoretical gaps by contextualising the constructs in Oman, which can lead to future empirical validation. In general, the piece of research reaffirms the idea that sustainable competitive advantage in the public sector institutions can be achieved through the synergistic combination of technology, innovation, and talented human resources.

It is worth noting that the figures available in previous research, including the growth in digital competitiveness, decrease in time spent on transaction processing, or increase in beneficiary satisfaction, are to be taken with a grain of salt. These statistics are based on various methodological methodologies, such as national performance reports, international benchmarking studies, sector specific empirical studies. As a result, the ranges of the improvements in digital competitiveness (e.g. 20-30% improvements) or the productivity gains (15-20% improvements) can be different based on the measurement framework, the sampled population, and the context of a given institution.

Moreover, such estimates may be useful as indicative benchmarks, but their direct extrapolation to the Omani public sector should be taken cautiously because institutional frameworks, digital maturity rates, and policy frames may vary depending on the country. This is why these statistics are considered in the current research as the supporting facts in the literature, but not as the empirical measurements.

Declaration of Generative AI and AI-assisted Technologies in the Writing Process

During the preparation of this work, the authors used Quillbot tools in order to paraphrase and proofread. After using this tool/service, the authors reviewed and edited the content as needed and took full responsibility for the content of the publication.

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Contribution of Individual Authors to the Creation of a Scientific Article (Ghostwriting Policy)

Saada Mohamed Said Al-Sarkhi conceptualised the study, she conducted the literature review, and she developed the initial draft of the manuscript. Abbod Naseb Abbod Al-Tamimi helped in the theoretical framework, methodology design, and reviewing critical aspects of the manuscript in terms of intellectual content. The research was done under the supervision of Mohamed Khudari, who guided the conceptual development of the research and participated in the final review and corrections of the manuscripts. Every author has checked and accepted the final copy of the manuscript.

Sources of Funding for Research

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

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