



# Reframing E-Government Research in Qatar: A Systematic Review of Digital Governance and Institutional Transformation

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## ABSTRACT

This study examines the development of E-government research in Qatar within the broader context of digital transformation under the Qatar National Vision 2030. Despite significant progress driven by sustained investments in digital infrastructure, integrated information systems, and public service modernisation, the academic landscape remains fragmented, with limited synthesis on the role of data and information processes in shaping digital governance outcomes. To address this gap, this study adopts a Systematic Literature Review (SLR) guided by the PRISMA 2020 framework, analysing 14 selected articles from Scopus and Web of Science published between 2016 and 2026. The findings reveal a strong dominance of technology adoption-oriented studies grounded in models such as the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT), focusing on user intention, satisfaction, and system quality. However, limited attention has been given to data governance, information integration, and evidence-based decision-making. Governance-related perspectives, including inter-agency coordination, digital inclusivity, and bureaucratic fragmentation, are emerging but remain insufficiently operationalised. Overall, the study highlights gradual thematic expansion alongside continued theoretical and methodological concentration, underscoring the need for deeper empirical engagement with institutional and data-centric dimensions of digital transformation.

**Keywords:** Digital Government, Data Governance, Information Systems, Data-Driven Governance, Systematic Literature Review, Qatar, Institutional Analysis

**JEL Classifications:** H83, O33, O38, D83

## 1. INTRODUCTION

The rapid expansion of digital technologies has fundamentally reshaped the structures, processes, and strategic orientations of public administration worldwide. Early conceptualizations of E-government primarily emphasized the use of information and communication technologies (ICT) to digitize administrative procedures and enhance service efficiency (Layne and Lee, 2001). In this formative phase, digitalization largely entailed the automation of existing transactions, the provision of online services, and improved access to government information, while traditional bureaucratic hierarchies and institutional arrangements remained largely unchanged. Over time, however, advances in data

integration, cloud computing, artificial intelligence, and analytics have facilitated the emergence of digital government as a more comprehensive reform paradigm. Rather than simply digitizing administrative processes, digital government increasingly involves institutional restructuring, inter-agency integration, data-driven decision-making, and whole-of-government coordination (Dunleavy et al., 2006; Mergel et al., 2019). This transformation reflects a broader shift from technology-centric modernization toward governance-oriented reform.

Within this global trajectory, Qatar has positioned digital transformation as a strategic national priority aligned with the Qatar National Vision 2030. The Vision articulates an ambition

to build an advanced and sustainable society supported by knowledge-based economic diversification, innovation capacity, and ICT-enabled public services. Substantial investments have been directed toward digital infrastructure, integrated service portals, national digital identity systems, and smart governance initiatives aimed at enhancing efficiency, transparency, and service quality across public institutions. International benchmarks, including the United Nations E-Government Development Index (United Nations DESA, 2024), indicate Qatar's steady progress within the Gulf Cooperation Council (GCC), suggesting the establishment of a comparatively robust technological foundation for digital governance.

Nevertheless, technological advancement alone does not capture the complexity of digital transformation. Academic scholarship examining Qatar's experience presents a more nuanced and multilayered perspective. Early empirical work by Weerakkody et al. (2011) demonstrated that E-government implementation outcomes are shaped not only by technological readiness but also by organizational structures, political dynamics, and socio-cultural factors. Their findings underscored persistent challenges related to bureaucratic coordination, institutional fragmentation, and legislative clarity. Similarly, Nielsen and Ali (2021) observed that although Qatar has institutionalized a whole-of-government orientation within its digital strategy, transparency in monitoring processes and systematic mechanisms for benefit realization remain uneven. Collectively, these analyses suggest that digital transformation entails the development of governance capacity, institutional alignment, and regulatory coherence, rather than mere infrastructure expansion.

Parallel to these governance-oriented debates, a substantial body of research has focused on citizen adoption and the behavioural determinants of digital service use. Drawing primarily on the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT), these studies investigate factors shaping engagement with mobile government applications, open government data (OGD) platforms, and national digital portals such as Ehteraz and Hukoomi (Al-Kubaisi, 2023; El-Kassem and Al-Kubaisi, 2025; Al-Soni and Abu-Shanab, 2021). Empirical findings consistently reaffirm the explanatory power of perceived usefulness, perceived ease of use, trust, and system quality in shaping adoption intentions and user satisfaction. Although this stream of research has produced statistically robust models of user behaviour, evidence indicates that technological availability does not automatically translate into universal uptake. Elayah (2025), for example, observes that a significant proportion of public services continues to be accessed through traditional channels despite the presence of advanced digital infrastructure. This pattern suggests that behavioural, cultural, and institutional mediating factors remain influential in shaping digital engagement.

More recent scholarships adopt critical and institutional perspectives that extend beyond user-level analysis. Elayah and Al-Sayyed (2026) conceptualize Qatar's digital trajectory through the notion of "complex digital bureaucracy," arguing that digital systems may reproduce hierarchical control and institutional fragmentation rather than dismantle them. Complementary

research on inclusive ICT accessibility and digital ecosystem collaboration further emphasizes that effective digital governance depends on institutional readiness, participatory mechanisms, and coordinated administrative reform. Emerging discussions of AI-enabled governance broaden the analytical landscape by foregrounding issues of transparency, accountability, and systemic integration within smart government initiatives. Despite this expanding body of scholarship, research on E-government in Qatar remains analytically fragmented. Existing studies frequently examine discrete dimensions—such as infrastructure development, behavioural adoption, governance coordination, accessibility, or AI-driven innovation—without systematically synthesizing how these themes intersect or how scholarly priorities have evolved over time. Limited attention has been devoted to mapping dominant theoretical frameworks, assessing methodological patterns, or tracing thematic transitions within the field. Consequently, it remains unclear whether the research agenda has progressively shifted from technology-centred and behaviourally oriented models toward deeper institutional and governance-focused inquiry.

The absence of a structured thematic synthesis constrains a comprehensive understanding of the intellectual development of E-government scholarship in Qatar. Without integrative analysis, it is difficult to identify prevailing analytical paradigms, emergent research strands, and areas of underexplored inquiry. Such clarification is particularly important in high-capacity states, where technological investment may outpace institutional reform, potentially generating divergence between infrastructural sophistication and substantive governance transformation. In response to this gap, the present study undertakes a systematic thematic review of peer-reviewed research on E-government in Qatar. Guided by explicit inclusion criteria and systematic analytical mapping, the review identifies dominant research streams, examines their theoretical and methodological orientations, and traces their evolution between 2016 and 2026. By synthesizing dispersed findings, this study clarifies the intellectual trajectory of digital government scholarship in Qatar and delineates future research directions within the broader landscape of digital governance transformation.

## 2. CONCEPTUAL FRAMEWORK: FROM E-GOVERNMENT TO DIGITAL GOVERNMENT

The distinction between E-government and digital government provides an important analytical lens for understanding the evolution of technology-enabled governance. Although these terms are often used interchangeably in policy discourse, academic scholarship generally treats them as conceptually distinct stages that reflect varying depths of transformation. Clarifying this distinction is particularly relevant to the present study, which examines whether research on Qatar's digital transformation has progressed beyond technology-centred adoption models toward institutional and governance-oriented analysis. Early formulations of E-government conceptualized digitalization primarily as the application of information and communication technologies (ICT)

to enhance administrative efficiency and service delivery. Layne and Lee (2001) proposed a staged model in which governments evolve from online information provision to transactional capability and ultimately to vertical and horizontal integration. Within this framework, digitalization largely entails transferring existing services to electronic platforms while leaving underlying bureaucratic structures intact. Technology thus functions as an enabling instrument designed to enhance accessibility, reduce processing time, and improve operational performance, rather than restructure governance arrangements.

This efficiency-oriented interpretation aligns with reform trajectory influenced by New Public Management (NPM), which emphasized performance measurement, cost reduction, and customer-oriented service provision. Within this paradigm, indicators of success typically focused on portal sophistication, online service availability, and user adoption rates. Although such measures capture important dimensions of digital expansion, they do not necessarily reflect deeper institutional integration and cross-agency coordination. Consequently, early E-government initiatives frequently digitized administrative silos without fundamentally addressing structural fragmentation. In contrast, the concept of digital government advances a more systemic understanding of transformation. Dunleavy et al. (2006), through the Digital-Era Governance framework, argue that digital reform entails the reintegration of previously fragmented functions, needs-based holism, and the comprehensive digitalization of administrative processes. Reintegration involves consolidating dispersed organizational responsibilities, while need-based holism emphasizes service design organized around citizen needs rather than institutional boundaries. Digitalization, in this sense, refers not merely to replicating paper-based procedures in electronic form but to redesigning workflows in alignment with digital capabilities. This perspective signifies a shift from digitizing services to reconfiguring governance structures and institutional relationships.

Subsequent scholarship further characterizes digital government as encompassing platform-based ecosystems, data-driven decision-making, and whole-of-government coordination (Mergel et al., 2019). Within this perspective, interoperability, shared data infrastructures, and coordinated regulatory frameworks are regarded as central mechanisms for enhancing policy coherence and administrative responsiveness. Importantly, this body of literature does not assume that technological advancement automatically produces institutional reform. Rather, it emphasizes that structural transformation depends on governance capacity, organizational alignment, and sustained implementation practices.

More recent discussions extend the conceptual terrain to smart government and AI-enabled governance, highlighting advanced analytics, automation, and predictive decision-making as emerging dimensions of public sector transformation. At the same time, empirical research cautions that digital initiatives may coexist with bureaucratic rigidity, hierarchical control, or persistent coordination challenges, particularly within centralized administrative systems (Weerakkody et al., 2011; Nielsen and Ali, 2021). This coexistence underscores the analytical importance

of distinguishing technological sophistication from genuine institutional integration. Taken together, the transition from E-government to digital government can be understood as a shift from service digitization toward broader institutional and governance transformation. However, this transition is neither necessarily linear nor uniform. Elements of efficiency-oriented E-government and reintegrative digital governance may coexist within the same national system. Consequently, improvements in digital infrastructure or strong performance in international indices—such as the United Nations E-government Development Index (United Nations DESA, 2024)—do not automatically indicate corresponding advances in institutional reform or coordination capacity.

For the purposes of this study, this conceptual distinction provides a framework for evaluating the orientation of scholarly research on Qatar. If E-government primarily corresponds to service delivery efficiency and adoption behaviour, whereas digital government entails institutional integration and governance restructuring, then examining the dominant themes, theoretical lenses, and methodological approaches within the literature becomes analytically essential. The present review therefore draws on this conceptual progression to assess whether Qatar's E-government scholarship predominantly reflects an adoption-centred paradigm associated with early E-government, or whether it increasingly engages with the structural and governance dimensions characteristic of digital government.

By situating the thematic analysis within this conceptual framework, the study connects empirical findings to broader theoretical developments in digital governance. This alignment enables a systematic interpretation of how research on Qatar corresponds to, reinforces, or diverges from the evolving conceptual trajectory from E-government to digital government.

### 3. OVERVIEW OF DIGITAL GOVERNMENT IN QATAR

Digital transformation in Qatar's public sector is embedded within the broader national development framework articulated through the Qatar National Vision 2030. Within this agenda, digitalization is positioned as a strategic enabler of administrative modernization, economic diversification, and governance capacity building. Rather than being treated as purely technical reform, digital government initiatives are integrated into long-term national planning instruments and state-led modernization strategies. Over the past two decades, Qatar has invested extensively in ICT infrastructure, broadband connectivity, cybersecurity systems, and centralized service platforms. One of the earliest and most prominent initiatives was the launch of the national E-government portal, Hukoomi, introduced as a unified gateway for accessing public services. The portal was designed to consolidate government information, streamline transactions, and progressively reduce reliance on paper-based procedures. However, empirical assessments of Hukoomi indicate that service availability did not automatically translate into effective utilization.

Al-Kubaisi (2023), drawing on a large-scale survey of 1,340 respondents, identified a notable gap between awareness and actual usage of the portal. Although approximately two-thirds of respondents were aware of Hukoomi's existence, only about one-third reported actively using it for service transactions. The study attributed this disparity to limited understanding of portal functions, insufficient awareness campaigns, and perceived content limitations. These findings suggest that infrastructural deployment alone was insufficient to secure sustained user engagement. The Hukoomi case therefore illustrates an early pattern in Qatar's digital trajectory: technological readiness may advance more rapidly than behavioural adoption.

Subsequent phases of digital government development extended beyond portal-based services toward mobile government applications and integrated digital platforms. Applications such as Metrash2 and Ehteraz expanded real-time interaction between citizens and state institutions, particularly in areas related to identity verification, administrative procedures, and public health management. Empirical studies applying behavioural models—including TAM and UTAUT—consistently identify perceived usefulness, trust, system quality, and effort expectancy as key determinants of user satisfaction and adoption across these platforms (Al-Soni and Abu-Shanab, 2021; El-Kassem and Al-Kubaisi, 2025). These findings reinforce the distinction between digital service provision and actual usage behaviour.

Institutionally, Qatar's digital government operates within a centralized administrative framework. Strategic direction and interoperability standards are coordinated at the national level by the Ministry responsible for Communications and Information Technology, while sectoral ministries implement domain-specific initiatives. This structure facilitates centralized policy alignment and standardized digital infrastructure. At the same time, effective implementation depends on horizontal coordination across ministries and agencies.

Research examining institutional dynamics indicates that organizational factors significantly shape digital outcomes. Weerakkody et al. (2011) emphasize that bureaucratic routines, legislative clarity, and coordination mechanisms influence the effectiveness of E-government initiatives. Similarly, Nielsen and Ali (2021) observe that although Qatar has institutionalized a whole-of-government coordination model within its digital transformation strategy, transparency in monitoring processes and systematic mechanisms for benefit realization remain uneven. These findings indicate that digital government development entails ongoing institutional adaptation rather than a simple technological rollout.

At the macro level, international benchmarking reflects measurable progress. According to the United Nations E-Government Survey 2024, Qatar achieved an EGDI score of 0.8244 and ranked 53<sup>rd</sup> globally (United Nations DESA, 2024). This performance reflects improvements in online service provision, telecommunications infrastructure, and human capital indicators. Within the GCC, Qatar is classified among the higher-performing states. Nevertheless, international indices primarily assess service

readiness and infrastructural capacity; they do not directly measure inter-agency integration, regulatory coherence, or institutional restructuring. A high ranking therefore signals technological maturity but does not necessarily indicate comprehensive governance transformation.

Recent scholarship further complicates narratives of digital success. Elayah (2025) highlights the role of civic motivation, privacy concerns, and institutional constraints in shaping digital participation. Elayah and Al-Sayyed (2026) introduce the concept of "complex digital bureaucracy" to describe how digital systems may coexist with hierarchical control structures and institutional fragmentation. Rather than dismantling bureaucratic silos, digital platforms may reinforce centralized authority while simultaneously improving procedural efficiency. This interpretation aligns with earlier findings on coordination challenges and adoption gaps, suggesting that digitalization does not automatically produce structural reintegration.

Taken together, the literature portrays Qatar as a high-capacity digitalizing state characterized by sustained infrastructural investment and centralized strategic coordination yet also marked by adoption disparities and institutional complexity. The trajectory of digital government development thus reflects both technical capability and organizational negotiation. This dual character renders Qatar a particularly relevant case for examining how digital infrastructure expansion interacts with administrative structures and governance arrangements. Understanding this contextual landscape is essential for interpreting the thematic and methodological patterns identified in the subsequent sections of this review. The predominance of adoption-oriented research, the gradual emergence of governance-focused inquiry, and the concentration around perception-based methodologies must be situated within this broader national experience. Qatar's digital government evolution provides not only empirical material but also an analytical framework for assessing how scholarly attention has framed, measured, and interpreted digital transformation over the past decade.

## 4. METHODS AND DATA

This study employed a Systematic Literature Review (SLR) to provide a structured and transparent synthesis of research on E-government in Qatar. The review process followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) framework (Page et al., 2021), which offers updated guidance for conducting and reporting systematic reviews. The procedural design was further informed by established methodological approaches widely applied in management and information systems research (Kitchenham, 2007; Tranfield et al., 2003), particularly with respect to search strategy development, screening procedures, and eligibility assessments.

### 4.1. Identification

The identification stage involved defining appropriate keywords and search terms aligned with the study's objective. Following Okoli's (2015) recommendations, the search strategy was developed around the core constructs of the review, namely

“Qatar” and “E-government.” To ensure comprehensive retrieval and account for terminological variation in the literature, related expressions including “electronic government,” “digital government,” and “digital governance” were incorporated into the search strings. A structured search was conducted in Scopus and Web of Science (WoS), selected for their broad coverage of peer-reviewed scholarship in public administration, information systems, and digital governance. The following search strings were applied:

The search was restricted to publications between 2016 and 2026 to capture recent developments in digital government and digital transformation in Qatar. The initial search yielded 146 records, comprising 130 from Scopus and 16 from Web of Science. After the removal of 14 duplicate records, 132 studies remained for title and abstract screening. All screening procedures were conducted manually according to predefined inclusion and exclusion criteria to ensure contextual judgment in assessing conceptual relevance. No automated screening tools were used at this stage.

## 4.2. Screening

The screening stage was conducted in two sequential phases. In the first phase, titles and abstracts were reviewed to assess conceptual relevance to the study’s objective. Articles were excluded if they primarily addressed digital themes unrelated to public sector governance, including e-commerce, social commerce, smart transportation systems, fintech, general ICT adoption, or private-sector digital innovation without a governmental dimension. Studies that referred to Qatar only incidentally, or as part of a broader regional dataset without substantive national-level analysis, were also excluded. This initial screening resulted in the exclusion of 71 studies that were not directly related to E-government in Qatar, leaving 61 records for full-text retrieval. No automation tools were used during screening; all decisions were made through manual review according to predefined criteria.

## 4.3. Eligibility and Inclusion

In the second phase, full-text articles were assessed for eligibility. Studies were included if they explicitly examined E-government, digital government, or digital governance initiatives in Qatar. Eligible themes encompassed policy design, institutional coordination, governance mechanisms, implementation strategies, user adoption models, system quality assessment, digital inclusion, open government data, AI-enabled public services, and public service delivery through government platforms. Regional or comparative studies were excluded unless they contained clearly identifiable and substantive analysis specific to Qatar. Additionally, studies focused exclusively on smart cities, broader GCC comparisons, or public administration reforms without a digital governance dimension were excluded. The study selection process followed the PRISMA 2020 guidelines, as illustrated in Figure 1.

As shown in Figure 1, the identification, screening, eligibility assessment, and inclusion stages were systematically conducted to ensure that only studies directly relevant to e-government transformation in Qatar were retained for the final review. A total of 146 records were identified from Scopus and Web of Science, of which 14 duplicate records were removed. Following title and

abstract screening, 72 studies were excluded, while 58 full-text articles were assessed for eligibility. After applying the predefined inclusion and exclusion criteria, 14 studies were retained for the final synthesis.

## 5. FINDINGS

This section synthesizes the 14 studies included in the review. Table 1 presents a structured summary of the selected studies, covering the publication period (2016-2026), authorship, methodological design, analytical approach, and principal findings. The reviewed works encompass empirical, conceptual, and policy-oriented contributions. Methodologically, the majority employ quantitative cross-sectional survey designs supported by statistical modelling techniques, including structural equation modelling (SEM), path analysis, regression analysis, and factor analysis. A smaller number of studies adopt qualitative interviews, document analysis, institutional assessment instruments, or conceptual frameworks. Thematically, the studies address user satisfaction, mobile government adoption, open government data (OGD), institutional coordination, accessibility readiness, digital inclusion, AI-enabled governance, and structural dynamics within Qatar’s digital transformation agenda. Table 2 provides a consolidated overview of these studies and serves as the empirical foundation for the subsequent thematic synthesis and analytical discussion.

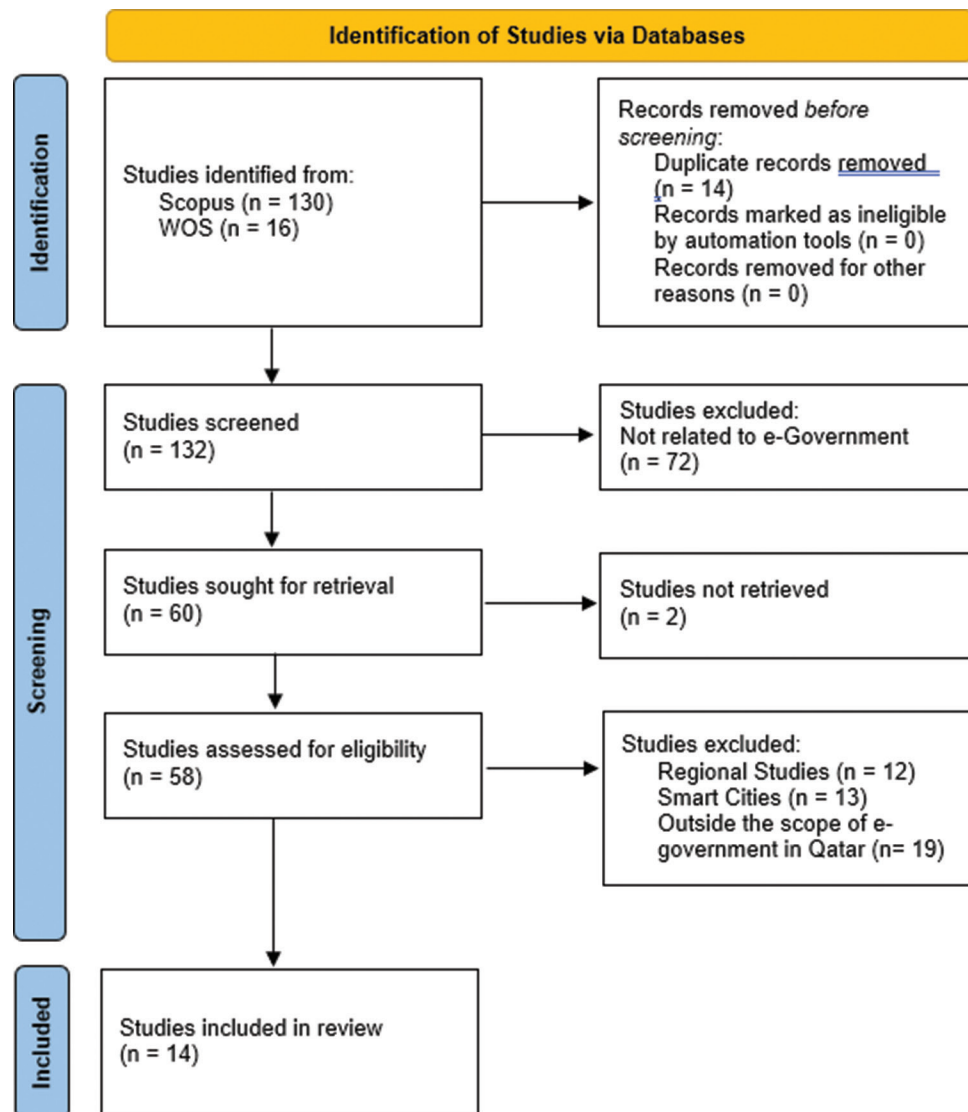
As shown in Table 1, the reviewed studies exhibit clear methodological and thematic patterns within Qatar’s E-government scholarship. Quantitative survey-based designs constitute many empirical studies, frequently employing established technology adoption frameworks, including the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT). These studies predominantly examine user intentions, satisfaction, perceived usefulness, trust, and system quality in relation to mobile government applications and open government data (OGD) platforms. By contrast, a smaller subset of studies adopts qualitative or policy-oriented approaches, focusing on institutional coordination, accessibility readiness, digital inclusion, and broader governance dynamics. This distribution provides the foundation for a more detailed thematic synthesis of the literature, presented in the following subsections.

**Table 1: Database search strategy and retrieved records**

| No. | Database | Search query                                                                                                                                                                       | Retrieved records |
|-----|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 1.  | Scopus   | TITLE-ABS-KEY (Qatar) AND (“E-government” OR egovernment OR “electronic government” OR “e government” OR “digital government”) AND PUBYEAR >2015 AND PUBYEAR <2027                 | 130               |
| 2.  | WOS      | TS=([Qatar] AND [“E-government” OR egovernment OR “electronic government” OR “e government” OR “digital government” OR “digital governance” OR “E-governance”]) AND PY=(2016-2026) | 16                |

Search conducted in February 2026

**Figure 1:** PRISMA 2020 flow diagram illustrating identification, screening, eligibility, and inclusion stages in the study selection process. Adapted from Page et al. (2021)



### 5.1. Theories Used in Qatar's E-Government Research

The synthesis of the 14 reviewed studies reveals a pronounced reliance on technology adoption frameworks within Qatar's E-government scholarship. 8 studies explicitly draw on the technology acceptance model (TAM), the unified theory of acceptance and use of technology (UTAUT), or integrated variants incorporating constructs such as system quality and the information systems success model (Hassan and Abu-Shanab, 2020; Al-Soni and Abu-Shanab, 2021; Al-Kubaisi, 2023; El-Kassem, 2025a; El-Kassem and Al-Kubaisi, 2025; El-Kassem, 2025b; A. El-Kassem and Al-Kubaisi, 2025; Al-Yafi et al., 2016). Across this body of work, a consistent set of explanatory constructs is employed, most notably perceived usefulness, perceived ease of use, trust, system quality, performance expectancy, and effort expectancy. Perceived usefulness is repeatedly identified as a statistically significant predictor of behavioural intentions and user satisfaction, while trust and system quality frequently reinforce adoption outcomes. The analytical focus remains centred on the individual user as the primary unit of analysis.

Digital government is thus predominantly conceptualized as a technology adoption phenomenon, operationalized through measures of user intention, satisfaction, and acceptance in relation to applications such as Metrash2, Ehteraz, mobile government platforms, and open government data portals. Within this adoption-oriented cluster, institutional theory, public administration reform frameworks, and regulatory governance models rarely appear as primary analytical lenses. Collectively, this pattern reflects a concentrated theoretical orientation anchored in behavioural adoption paradigms within Qatar's E-government research landscape.

### 5.2. Research Methods Commonly Applied

The synthesis reveals a clearly defined methodological profile within Qatar's E-government scholarship. The dominant research design is quantitative and cross-sectional, relying on structured survey instruments administered to large respondent samples. Several studies utilize datasets exceeding one thousand respondents, including 1,426 respondents (Al-Kubaisi, 2023; El-Kassem, 2025b; A. El-Kassem and Al-Kubaisi, 2025), 1,872

**Table 2: Summary of included studies on E-government in Qatar (2016-2026)**

| No. | Author and year                 | Title                                                                                                                           | Source                                                             | Method                                                                                                                                                                               | Key findings                                                                                                                                       |
|-----|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Benmansour et al. (2019)        | Exploring local governance and E-services in Qatar                                                                              | International journal of public administration in the digital age  | Qualitative semi-structured interviews (n=8 municipal directors); analysis using MAXQDA.                                                                                             | E-services increase efficiency but face low adoption, opaque processes, and low-quality complaints.                                                |
| 2   | Al-Soni and Abu-Shanab (2021)   | Factors influencing users' satisfaction when using Ehteraz App                                                                  | International journal of information systems and change management | Quantitative cross-sectional survey (n=550); structured questionnaire; statistical analysis using UTAUT constructs                                                                   | Performance expectancy, effort expectancy, system quality, and trust significantly influence user satisfaction.                                    |
| 3   | Hassan and Abu-Shanab (2020)    | Exploring the factors affecting user satisfaction with metrash2 System                                                          | International journal of electronic government research            | Quantitative survey (n=276 valid); SEM based on TAM and ISSM.                                                                                                                        | Perceived usefulness, ease of use, service quality, and information quality influence satisfaction.                                                |
| 4   | El-Kassem (2025a)               | Factors influencing mobile government adoption in Qatar: An integrated model                                                    | International journal of interactive mobile technologies           | Quantitative cross-sectional survey (n=1,064); factor analysis and structural path modeling.                                                                                         | Perceived usefulness and trust show strongest standardized path coefficients predicting adoption intention.                                        |
| 5   | El-Kassem et al. (2025)         | Integrating perceived system quality with TAM to analyze mobile government application usage                                    | JeDEM                                                              | Quantitative CATI survey (n=1,872); exploratory factor analysis; multiple regression; regression-based path analysis (TAM+System Quality)                                            | Perceived usefulness strongest predictor; system quality and ease of use significantly influence MGA adoption intention (R <sup>2</sup> =0.254).   |
| 6   | Al-Kubaisi (2023)               | Path analytic investigation of the intention to adopt open government data in Qatar (TAM Revisited)                             | Journal of E-government                                            | Survey (n=1,426); KMO and Bartlett's test; factor analysis; multiple regression; path analysis (TAM-based model).                                                                    | Perceived usefulness strongest predictor; model explains 33.9% variance in OGD adoption intention.                                                 |
| 7   | El-Kassem (2025b).              | A path model for analyzing user experience with open government data: evidence from Qatar's Ehteraz application                 | Transforming government: People, process and policy                | Survey (n=1,426); CFA; performance–importance gap analysis; and path modeling based on TAM and ECT.                                                                                  | Examines Ehteraz OGD user experience, revealing 82% confirmation surplus influencing attitudes and perceived usefulness significantly.             |
| 8   | El-Kassem and Al-Kubaisi (2025) | An investigation on users' perceptions of open government data in Qatar                                                         | Human behavior and emerging technologies                           | Survey (n=1,426); IPA-SWOT; gap analysis; factor analysis; regression; path analysis.                                                                                                | Evaluates OGD perceptions in Qatar; identifies 82% surplus and trust influenced by service gaps.                                                   |
| 9   | Nielsen and Ali (2021)          | Governing and monitoring the digital transformation: Assessing the Qatari experience since 2003                                 | ACM digital government conference proceedings                      | Qualitative document analysis of policy documents, digital government strategies, and international benchmarking data (EGDI, EODB)                                                   | Joint-government coordination is institutionalized, yet monitoring transparency and systematic benefit realization remain underdeveloped. limited. |
| 10  | Othman et al. (2023)            | Assessing the readiness of government and semi-government institutions for inclusive ICT accessibility (MARSAD tool)            | Sustainability                                                     | Development and implementation of the MARSAD e-readiness assessment tool (2019-2021); institutional-level accessibility audit administered to 14 education and culture institutions. | Significant ICT accessibility gaps identified; institutions show willingness to implement inclusive digital reforms based on MARSAD results.       |
| 11  | Badran (2025)                   | Delivering public service in the age of digital era governance: The potentials of AI for smart government applications in Qatar | IGI global edited volume                                           | Conceptual                                                                                                                                                                           | AI can enhance transparency, accountability, and service integration in smart government contexts.                                                 |
| 12  | Elayah (2025)                   | Transformative pathways in Qatar's E-government: Integrating societal engagement and NGO partnerships                           | Public administration and development                              | Qualitative study based on 40 semi-structured interviews: supported by document analysis.                                                                                            | Low societal self-motivation, privacy concerns, and institutional barriers constrain engagement.                                                   |
| 13  | Elayah and Al-Sayyed (2026)     | Digital governance in Qatar: Navigating the paradox of digital bureaucracy                                                      | Digital policy, regulation and governance                          | Qualitative study (38 semi-structured interviews); thematic analysis examining institutional dynamics and digital governance structures in Qatar.                                    | Digital transformation reproduces hierarchical control and institutional fragmentation ("complex digital bureaucracy").                            |
| 14  | Al-Yafi et al. (2016)           | A user-centric evaluation of E-Government Services in the GCC Region: Case of State of Qatar                                    | International journal of electronic government research            | Cross-sectional survey (n=458) of users of three E-government services; SEM analysis based on the COBRA framework (cost, opportunity, benefit, risk).                                | Perceived benefit and perceived risk significantly predict user satisfaction with E-government services.                                           |

respondents (El-Kassem and Al-Kubaisi, 2025), and 1,064 respondents (El-Kassem, 2025a). Other empirical investigations report 550 respondents (Al-Soni and Abu-Shanab, 2021) and 276 respondents (Hassan and Abu-Shanab, 2020). These sample sizes indicate a strong orientation toward statistical validation and theory-driven model testing within established adoption frameworks.

Analytically, the literature demonstrates considerable statistical sophistication. Structural equation modelling (SEM), recursive path analysis, regression-based path modelling, exploratory factor analysis (EFA), and confirmatory factor analysis (CFA) are routinely employed to validate constructs and examine theoretical relationships. In studies of open government data (OGD), additional techniques—such as importance–performance gap analysis and IPA-SWOT—are incorporated to assess discrepancies between perceived importance and service performance. Reported explanatory power in adoption models generally falls within moderate ranges (e.g.,  $R^2$  values between 0.25 and 0.35), indicating meaningful predictive capacity within behavioural paradigms.

Despite this level of analytical rigor, the overall research design remains highly uniform. All quantitative studies rely on cross-sectional data collected at a single point in time and are primarily based on self-reported perception measures. Constructs such as perceived usefulness, perceived ease of use, trust, system quality, satisfaction, and behavioural intention constitute the core of empirical measurement. Longitudinal designs, experimental or quasi-experimental approaches, administrative performance datasets, and policy impact evaluations based on objective institutional indicators are absent from the reviewed sample. This methodological concentration suggests that digital transformation in Qatar is predominantly examined through perception-based predictive modelling rather than through temporal, institutional, or performance-based analysis. While statistical precision is high, variation in research design and epistemological perspective remains comparatively limited.

### 5.3. Main Areas of Focus in Literature

In addition to the dominant adoption-oriented research, a distinct strand within the reviewed literature examines digital transformation from a governance and institutional perspective. Although numerically smaller, this body of work shifts the analytical focus from individual-level acceptance toward structural, administrative, and organizational dimensions of digital government. Rather than asking how citizens adopt digital services, these studies investigate how digital initiatives interact with institutional capacity, coordination mechanisms, inclusivity frameworks, and bureaucratic structures.

One thematic focus centres on administrative processes and local governance effectiveness. Benmansour et al. (2019) demonstrate that municipal e-services can enhance operational efficiency; however, procedural opacity and weak complaint-handling systems constrain administrative responsiveness. Their findings indicate that digital platforms do not automatically rectify underlying structural limitations. A second area addresses inter-agency coordination and monitoring capacity. Nielsen and Ali (2021) report that Qatar has institutionalized a whole-of-

government coordination model within its digital transformation strategy. Nevertheless, mechanisms for transparency monitoring and systematic benefit realization remain underdeveloped, suggesting gaps between strategic alignment and measurable governance outcomes.

Institutional readiness and digital inclusivity constitute another significant thematic focus. Othman et al. (2023), through the MARSAD e-readiness assessment conducted across 14 institutions, identify substantial ICT accessibility gaps affecting persons with disabilities. While institutional willingness for reform is evident, inclusive digital capacity remains uneven. Societal engagement and bureaucratic dynamics are also examined through qualitative inquiry. Elayah (2025) finds that civic participation is shaped by privacy concerns, limited social motivation, and institutional constraints. Elayah and Al-Sayyed (2026) further identify persistent hierarchical control and institutional fragmentation within digitally transformed systems, conceptualizing this condition as “complex digital bureaucracy.” In a related conceptual contribution, Badran (2025) discusses AI-enabled governance in normative terms, emphasizing transparency, accountability, and service integration within digital-era governance.

Collectively, this stream broadens the thematic scope of Qatar’s E-government scholarship by foregrounding coordination capacity, inclusivity, institutional readiness, bureaucratic structures, and governance reform as integral components of digital transformation.

### 5.4. Evolution of Research Focus (2016-2026)

A chronological examination of the 14 reviewed studies indicates a gradual yet discernible reorientation in thematic emphasis within Qatar’s E-government literature over the past decade. Although the progression is incremental rather than abrupt, shifts in analytical focus can be identified across three broad phases. The earlier phase (2016-2021) was predominantly characterised by research on service usability and user satisfaction. Studies during this period concentrated on evaluating user perceptions of specific digital government applications. Al-Yafi et al. (2016) applied the COBRA framework to assess user satisfaction across three E-government services, while Hassan and Abu-Shanab (2020) and Al-Soni and Abu-Shanab (2021) examined determinants of satisfaction and adoption in applications such as Metrash2 and Ehteraz using TAM-, UTAUT-, and ISSM-based models. Core constructs included perceived usefulness, perceived ease of use, service quality, trust, and satisfaction. During this phase, digital government was primarily conceptualised as a service interface requiring optimisation at the level of individual users.

Between 2023 and 2025, the thematic scope broadened to encompass open government data (OGD) and user experience modelling. Studies by Al-Kubaisi (2023), El-Kassem and Al-Kubaisi (2025), and El-Kassem (2025b) shifted analytical attention from discrete service applications to data accessibility, confirmation mechanisms, and trust formation within digital information environments. Although still anchored in adoption-based frameworks, this phase reflects a widening of focus from transactional service use to data governance and experiential

evaluation. From 2025 onwards, a more explicit engagement with governance structures and institutional dynamics becomes visible. Elayah (2025) examines societal engagement and institutional constraints affecting digital initiatives, while Elayah and Al-Sayyed (2026) analyse bureaucratic fragmentation within digital transformation processes. Nielsen and Ali (2021), although published earlier, align with this perspective through their focus on coordination mechanisms and monitoring capacity.

In all, this trajectory suggests incremental thematic expansion—from service optimisation to data governance and, more recently, to institutional and governance-oriented inquiry. However, behavioural adoption models remain numerically dominant, indicating gradual evolution within the field rather than a paradigmatic shift.

## 6. DISCUSSION

### 6.1. Interpretation of Theoretical Concentration

The predominance of Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT) frameworks reflects a clear and sustained theoretical orientation within Qatar's E-government scholarship. Across the reviewed studies, digital government is predominantly examined through the lens of individual technology adoption, with repeated emphasis on constructs such as perceived usefulness, perceived ease of use, trust, system quality, performance expectancy, and effort expectancy. This pattern is consistent with broader trends in E-government research across Arab countries, where intention-based technology adoption theories continue to dominate analytical approaches (Rouibah et al., 2024). Such theoretical alignment with established information systems traditions has contributed to methodological consistency and enabled cumulative empirical refinement across studies.

At the same time, the strong concentration on adoption-oriented frameworks inevitably narrows the analytical scope of the field. In many studies, digital transformation is operationalised primarily in terms of service uptake, user acceptance, and satisfaction outcomes. While these dimensions are important for understanding citizens' engagement with digital services, they offer only a partial perspective on the broader transformation of government institutions. Structural aspects of digital government, including institutional restructuring, inter-agency coordination, regulatory alignment, and governance capacity, receive comparatively limited empirical attention in existing literature. Although some studies have begun to acknowledge these broader institutional dimensions of digital governance (Nielsen and Ali, 2021; Elayah and Al-Sayyed, 2026), they are rarely incorporated as central explanatory variables within systematic measurement models. Instead, they tend to appear as contextual factors rather than analytically operationalised constructs. Consequently, many research questions in the field remain focused on explaining patterns of user adoption rather than examining how digital technologies reshape organisational structures, administrative processes, and governance arrangements within the public sector.

From a theoretical perspective, the consolidation of research within behavioural adoption paradigms has strengthened the predictive modelling of user behaviour and technology acceptance. However, this emphasis has also meant that the institutional and systemic implications of digital transformation remain comparatively under-theorised and under-operationalised. Digital government initiatives frequently involve complex organisational reforms, policy integration, and cross-agency collaboration that extend beyond the scope of individual-level behavioural models. In this regard, broader theoretical engagement may be required to capture the multidimensional nature of digital transformation in the public sector. Scholarship on digital-era governance highlights the importance of reintegration, coordination, and systemic administrative reform in understanding how digital technologies reshape government institutions (Dunleavy et al., 2006). Incorporating such perspectives into future research could help expand the analytical focus of E-government studies in Qatar beyond adoption-centred frameworks, enabling a more comprehensive understanding of how digital initiatives transform governance structures, administrative practices, and public service delivery.

### 6.2. Methodological Concentration and Its Implications

The methodological profile of Qatar's E-government scholarship demonstrates substantial statistical rigour alongside limited design diversity. Large-scale survey datasets and the frequent application of structural equation modelling (SEM), recursive path analysis, and regression-based modelling reflect strong technical competence and close alignment with mainstream information systems research standards (Al-Kubaisi, 2023; El-Kassem and Al-Kubaisi, 2025; El-Kassem, 2025a). Construct validation procedures, including exploratory and confirmatory factor analysis, are routinely employed, indicating cumulative refinement within established adoption paradigms (El-Kassem, 2025b). However, methodological sophistication coexists with structural uniformity. The dominant reliance on cross-sectional, perception-based surveys situates digital transformation primarily within individual-level attitudes rather than institutional-level performance. As a result, the literature has produced well-specified predictive models of user intention and satisfaction, but comparatively fewer empirical assessments of governance transformation.

Cross-sectional designs provide insight into adoption dynamics at specific points in time; however, they are not well suited to capturing policy evolution, administrative adaptation, or long-term structural change. Given the incremental and processual nature of digital transformation, the limited presence of longitudinal inquiry constrains understanding of whether reforms generate sustained institutional effects. Moreover, objective governance performance indicators such as inter-agency interoperability, regulatory coherence, administrative efficiency gains, or benefit realisation mechanisms (Nielsen and Ali, 2021) are rarely operationalised. Institutional effectiveness is therefore commonly inferred from perception-based measures rather than being directly measured through administrative or policy outcomes. Although governance challenges such as institutional fragmentation and digital bureaucracy have been explored qualitatively (Elayah

and Al-Sayyed, 2026), these insights remain weakly integrated into quantitative modelling frameworks. This separation between behavioural measurement and institutional analysis contributes to a methodological divide within literature.

Overall, perception-driven quantitative modelling has significantly shaped the empirical contours of the field. Predictive precision is high; however, institutional depth remains comparatively limited. Greater methodological diversification including longitudinal institutional analysis, mixed-method designs, and the incorporation of objective governance performance metrics consistent with digital-era governance principles (Dunleavy et al., 2006) would enhance analytical balance and foster deeper conceptual development.

### 6.3. Governance and Structural Implications

The synthesised findings carry important theoretical, methodological, and policy implications for the future development of E-government research in Qatar. First, the strong concentration around technology adoption frameworks highlights the need for greater theoretical pluralism. While TAM- and UTAUT-based models have generated cumulative empirical insights into user intention and satisfaction, they offer limited explanatory capacity for institutional transformation, governance restructuring, and regulatory adaptation. Expanding the theoretical base to incorporate institutional theory, public administration reform frameworks, and digital-era governance perspectives would enable a more comprehensive analysis of how digital systems reshape administrative capacity and state–society relations.

Second, the methodological concentration around cross-sectional, perception-based surveys underscores the importance of design diversification. Existing research demonstrates substantial statistical sophistication yet largely captures static snapshots of user attitudes. Future studies would benefit from longitudinal designs capable of tracing policy evolution and institutional adaptation over time. Mixed-method approaches integrating survey modelling with qualitative institutional analysis could further bridge the current divide between behavioural measurement and structural analysis. Third, the limited incorporation of objective governance performance indicators reveals a significant empirical gap. Digital transformation is frequently assessed through satisfaction and adoption metrics rather than measurable institutional outcomes such as administrative efficiency, inter-agency interoperability, regulatory coherence, or benefit realisation. Incorporating such indicators would strengthen the capacity of research to evaluate digital transformation as a governance reform process rather than solely as a service optimisation initiative.

Fourth, the emergence of governance-oriented studies signals a conceptual inflection point. Themes such as coordination gaps, accessibility readiness, societal engagement constraints, and digital bureaucracy indicate that digital transformation entails structural tensions alongside technological expansion. Future scholarships may therefore need to integrate user-level insights with institutional-level analysis to avoid analytical fragmentation. Collectively, these implications suggest that while Qatar's E-government scholarship has achieved methodological rigour

and theoretical consolidation within adoption paradigms, its next phase of development will depend on deeper institutional inquiry and broader methodological innovation.

### 6.4. Research Gaps and Future Directions

The evolving trajectory of Qatar's E-government scholarship reveals significant opportunities for further conceptual and empirical advancement. Although thematic expansion is evident, several structural research gaps remain inadequately addressed. First, future research should move beyond technology-centric explanations and more systematically examine governance capacity as a primary analytical variable. Existing studies demonstrate robust modelling of user adoption and satisfaction; however, institutional coordination, monitoring transparency, and benefit realisation mechanisms remain empirically underexamined (Nielsen and Ali, 2021). Digital transformation therefore requires analysis of administrative capacity, regulatory alignment, and inter-agency integration rather than focusing predominantly on technological uptake.

Second, digital inclusivity warrants investigation as an institutional, rather than purely technical, phenomenon. Evidence of ICT accessibility gaps (Othman et al., 2023) suggests that inclusive digital transformation depends on organisational reform, policy design, and structural readiness. Future research could examine how institutional frameworks shape equitable access outcomes, particularly for vulnerable populations. Third, although artificial intelligence is strategically framed as a driver of transparency and service integration (Badran, 2025), empirical assessment of AI-enabled governance remains limited. Research is needed to evaluate how AI systems are operationalised within public administration, how algorithmic accountability is ensured, and how data governance practices evolve. Fourth, emerging evidence of bureaucratic persistence within digital transformation processes (Elayah and Al-Sayyed, 2026) raises important questions regarding structural continuity. Future inquiry may examine whether digitalisation reduces administrative fragmentation or, alternatively, reinforces hierarchical control mechanisms.

Taken together, these directions suggest that the next phase of research should integrate behavioural modelling with institutional analysis in order to assess digital transformation as a governance restructuring process rather than solely as a service optimisation initiative.

## 7. CONCLUSION

This systematic review examines the intellectual development, dominant analytical orientations, and emerging trajectories of E-government scholarship in Qatar between 2016 and 2026. The findings indicate a research landscape characterised by notable theoretical and methodological concentration. Technology adoption frameworks, particularly TAM and UTAUT, serve as the principal analytical lens, positioning digital government largely as a user-level adoption phenomenon. Empirical studies consistently emphasise perceived usefulness, perceived ease of use, trust, system quality, and behavioural intention in relation to mobile government applications and open government data platforms.

Methodologically, the literature demonstrates considerable statistical rigour, with frequent use of structural equation modelling (SEM) and large-scale survey datasets that have enabled progressive refinement of predictive adoption models. At the same time, structural imbalances are evident. Institutional theory, public administration reform perspectives, regulatory governance frameworks, and objective performance indicators remain comparatively underrepresented. Although governance-oriented studies increasingly address coordination mechanisms, monitoring capacity, inclusivity, and bureaucratic fragmentation, these strands remain secondary to adoption-focused inquiry. The overall trajectory suggests thematic broadening from service usability to data environments and, more recently, to institutional dynamics rather than a fundamental paradigmatic shift.

This review offers a structured synthesis of Qatar's E-government scholarship by mapping its theoretical concentration, methodological profile, and emerging governance-oriented strand. In doing so, it demonstrates that digital transformation in the Qatari context has largely been framed through behavioural adoption paradigms, with institutional analysis only gradually gaining prominence. By situating these developments within wider digital government debates, the review provides insight into how a high-capacity state navigates the transition from technological deployment to governance transformation. While the field has achieved substantial maturity in modelling user behaviour, the institutional and structural dimensions of digital transformation remain comparatively less developed. Future research would benefit from integrating behavioural models with institutional theory, longitudinal designs, objective governance performance metrics, and empirical examination of AI-enabled governance initiatives. Extending analysis beyond adoption-centric explanations would enable digital transformation to be examined not only as service optimisation but also as an evolving reconfiguration of administrative capacity, coordination mechanisms, and state-society relations in the digital era.

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