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# EVALUATING THE EFFICIENCY OF ITSM AND AI INTEGRATION IN E-GOVERNMENT SERVICE QUALITY

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**Abstract**
This study evaluates IT Service Management (ITSM) within e-Government services using the e-GovQual framework. As IT becomes increasingly integral to strategic planning and service delivery, aligning IT services with business needs and public expectations is crucial. A quantitative survey approach identifies key factors influencing e-GovQual, such as information quality, service interaction quality, and usability. Conducted in Chennai, India, the research underscores the critical role of IT in enhancing government service delivery, focusing on efficient and citizen-centric e-Government services. It highlights benefits of AI integration, including improved efficiency, accuracy, and service interaction, while addressing challenges like data privacy, ethics, and job displacement. The findings show that AI tools like chatbots and predictive analytics are well-received, enhancing efficiency and collaboration within e-Government teams. This research proposes a refined framework for evaluating e-Government service quality, offering valuable insights for policymakers and IT managers aiming to optimize e-Government services in similar contexts.
***Keywords:*** *E-government; AI; ITSM; India, service quality*

## Introduction

There have been considerable global advancements in ICTs recently. Every facet of contemporary life has been profoundly affected by this shift (Alkhusaili, &Aljazzaf, 2020). One observable consequence is the progressive shift in how governments engage with different groups, including the public, private sector, and other branches of government. Government agencies also made efforts to improve and expand their services through E-government, a practical form of governance. Many countries made this change so they could stay up with the rapid expansion of the internet and other forms of information technology throughout the world. This change is a result of the internet's role in helping governments transition their public services from a more traditional to an electronic format.

Governments were able to improve their departments' efficiency as a consequence of this sort of change since it allowed them to provide faster access to their services and information. Furthermore, in an effort to improve the quality of public transactions in both developed and developing nations, several nations have opted to implement governmental reforms by utilizing E-government technologies. In particular, governments throughout the globe have focused heavily on implementing cutting-edge e-government services that connect and share resources with the private sector in order to foster economic growth. With regard to the corporate world, e-government seeks to stimulate the

economic cycle by making it easier for companies to trade on a local, national, and international scale. In addition, the elimination of the necessity for personal interaction via the use of these kinds of e-services exemplifies a new economic idea (Nanda, 2022).

**Literature Review**

According to Tsybulnyk et al. (2020), the introduction of E-government brought about a significant shift in the public sector's organizational culture, values, and use of information and communication technology (ICT) instruments. Governments throughout the world are actively seeking for E-government ideas that can improve the efficiency of their transactions. Since E-government facilitates more efficient commercial transactions with any government, it serves as a tool for fostering and advancing economic growth. Since many government services are offered directly to firms and citizens over the counter (OTC), governments have been heavily impacted and are interested in embracing E-services to meet the demands of the modern era (Roblek et al., 2020).

Businesses have a vested interest in e-government services because of the volume and frequency with which they utilize them. Many advantages, including cost reduction and increased productivity, are available to businesses through these e-services (Sharma et al., 2021). The corporate world has been ahead of the curve when it comes to implementing electronic administration systems, and as a result, any company serious about making it big has set up shop online. In addition, businesses are still making significant contributions to bolstering the e-government infrastructure and delivering vital services in a contemporary way. Governments often looked for ways to cooperate with different types of businesses to suit the demands of target customers; one way they did this was by creating new jobs in the area. Moreover, E-government may be utilized to increase the openness of government processes, which in turn boosts confidence and trust among businesses. Given the dearth of studies examining actual E-government service and information utilization, prospective businesses may have reservations about embracing such systems. Specifically, Bhaskar, Vinay, and Joshi (2020) note that previous research skews toward studying individuals rather than companies. Many governments place a premium on this because they believe that small businesses—present in the vast majority of economies—are the engine that will propel future innovation, economic development, and the creation of new jobs. As a result, it is on purpose that the enhancement of company satisfaction with the provision of public service is seen highly significant for economic growth. Making it possible for citizens to rate the usefulness of government websites was the driving force behind developing the e-GovQual tool. Our previous research evaluated the general quality of e-government services, and this study expanded upon that. Evaluating the effectiveness of e-government IT Service Management was the primary objective of the study, which aimed to improve public services.

**Objective and Aim of the study**

This study aims to evaluate the efficacy of e-government IT Service Management (ITSM) practices, with the overarching goal of enhancing public services through improved governance, efficiency, and user satisfaction.

- To assess the effectiveness of specific AI applications in enhancing IT service efficiency
- To explore the impact of AI integration on user satisfaction and the overall quality of e-government services.

**Methodology**

To evaluate the efficiency of IT Service Management (ITSM) and AI integration in enhancing e-Government service quality, we adopted a descriptive research approach combined with quantitative methods.

**Survey Design and Data Collection:**

- We designed a detailed questionnaire based on factors influencing e-Government service quality identified in prior literature.
- The survey was distributed to users of e-Government websites and portals in Chennai, India, focusing on their experiences with AI-integrated ITSM processes.
- The questionnaire aimed to gather primary data on the extent and effectiveness of AI integration, covering aspects like chatbots, predictive analytics, automation tools, and incident management systems.

**Results and Findings**

The collected data underwent rigorous analysis using descriptive statistics to evaluate the responses quantitatively. We applied example-based methods in our data analysis to validate our research objectives regarding AI's impact on ITSM and its potential to enhance e-Government service quality. By employing a mixed-methods approach, the study ensured a holistic evaluation of AI integration in ITSM processes. The analysis provided actionable insights, highlighting areas of effectiveness and identifying challenges to inform policymakers on optimizing e-Government services.

**Table 1.1 Response of survey questionnaire on efficiency of ITSM and AI integration in e-government**

| **Effectiveness** | **Mean** |
|---|---|
| How effective do you find AI-powered chatbots in resolving e-government portal's service requests? | 0.75 |
| To what extent have AI-driven predictive analytics improved proactive e-government service management? | 0.74 |
| How effectively have AI-based automation tools reduced manual workload in IT service management? | 0.80 |
| How satisfied are you with the implementation of AI-driven incident management systems? | 0.70 |
| To what extent have AI tools improved the accuracy of e-government service diagnostics and troubleshooting? | 0.80 |
| **Mean** | **076** |

**Findings**

The descriptive statistics for efficiency reveal the mean effectiveness scores for various aspects of AI implementation in e-government. Participants rated AI-powered chatbots' effectiveness in resolving e-government portal service requests at 0.75, suggesting a generally positive perception. Similarly, AI-driven predictive analytics received a mean score of 0.74, indicating their perceived improvement in proactive e-government service management. AI-based automation tools garnered a higher mean score of 0.80, reflecting their effectiveness in reducing manual workload in IT service management. However, the implementation of AI-driven incident management systems received a slightly lower mean score of 0.70, suggesting room for improvement in participant satisfaction. On the other hand, AI tools' impact on the accuracy of e-government service diagnostics and troubleshooting achieved a

mean score of 0.80, indicating a high level of effectiveness in enhancing accuracy. Overall, the mean effectiveness score across all aspects stands at 0.76, indicating a generally positive perception of AI's effectiveness in various aspects of e-government implementation.

**Conclusion**

The study reveals a generally positive perception of AI's effectiveness in enhancing IT service efficiency within e-government services. AI-powered chatbots and predictive analytics are seen as effective, with mean scores of 0.75 and 0.74 respectively, reflecting improvements in service request resolution and proactive management. AI-based automation tools and diagnostic tools scored highest at 0.80, highlighting significant reductions in manual workload and enhanced diagnostic accuracy. However, AI-driven incident management systems received a slightly lower mean score of 0.70, indicating an area for potential enhancement. Overall, with a mean effectiveness score of 0.76, the findings underscore AI's substantial impact on improving e-government services, while also pointing to specific areas needing further refinement.

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