

# 공공부문의 AI 챗봇에 대한 대중의 신뢰: 스리랑카 상황에 대한 연구 검토

## Public Trust in AI Chatbots in the Public Sector: A Study Review for Sri Lanka Context

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### Abstract

This review examines public trust in chatbot technology in Japan's public sector and its implications for Sri Lanka, drawing insights from consultations with Sri Lankan ICT experts. It highlights early-stage trust factors crucial for effective chatbot deployment, emphasizing nuanced approaches for diverse inquiry topics such as parenting support. Integrating chatbots in Sri Lanka offers opportunities for service enhancement, but cultural and linguistic diversity necessitates inclusive solutions. Key adoption factors include transparency, accountability, and user feedback, suggesting clear communication on limitations and accountability measures like audits. Active user engagement fosters trust and satisfaction. Recommendations include addressing cultural and language considerations, prioritizing transparency, and soliciting user feedback for Sri Lanka's effective chatbot utilization in public service enhancement and government workload reduction.

키워드 : 인공지능, 퍼블릭트러스트, AI챗봇, 공공부문

Keywords : Artificial Intelligence, Public Trust, AI Chatbot, Public Sector

### 1. Introduction

In recent years, chatbots, computer programs that interact with users through natural language processing (Abu Shawar 2007), have garnered significant attention for their potential in improving public services and citizen engagement. The based article (Aoki 2020) delves into public trust in AI chatbots for public service delivery, with a focus on Japan, where local governments are increasingly exploring chatbot usage. While public confidence in AI machines is pivotal, empirical research on early trust in chatbots remains scarce, especially prior to actual engagement. Understanding the factors influencing initial trust is crucial for policymakers contemplating chatbot adoption in the public sector. In Sri Lanka, chatbot technology holds promise for enhancing public services and citizen involvement. Sri Lanka is a diverse country with numerous languages spoken in different regions (Pritzker 2024). By addressing cultural and language nuances,

By addressing cultural and language nuances, Sri Lanka can leverage chatbots to provide efficient, inclusive services while fostering trust among its diverse population. This study aims to enrich understanding of chatbot trust in the public sector, drawing implications from Japan's case for contexts like Sri Lanka, aiding policymakers in effectively harnessing chatbot technology.

### 2. Chatbots Benefits for Sri Lanka

With Sri Lanka's technology landscape always changing, the use of chatbots marks a major advancement in improving public services and operational effectiveness. Chatbots offer a multitude of advantages that go beyond traditional service delivery systems, and they have the potential to completely transform the way citizens interact with government institutions. One of their most persuasive features is its round-the-clock accessibility, which eliminates geographical and temporal restrictions for persons in need of help or information. Chatbots that are multilingual take advantage of Sri Lanka's linguistic diversity to provide services and information to all citizens, regardless of language skill or location.

Additionally, chatbots are essential for fast information distribution, especially in times of emergency, official notifications, and public health campaigns. Chatbots serve to prevent the spread of false information and guarantee that citizens receive timely and correct information when they need it most by

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effectively communicating important updates and instructions. In addition to improving public safety and awareness, this real-time communication also helps to build public trust in government programs and services.

Furthermore, by automating repetitive questions and duties, the use of chatbots in Sri Lanka's public sector promises to reduce the workload of government employees. Government staff can concentrate their time and skills on more sophisticated and high-value jobs by using chatbots to handle repeated requests and administrative tasks. This helps government agencies become more productive and efficient while also optimizing resources and reducing costs. Also practically, the public do not need to use machines if they don't initially trust them, as numerous studies on human-machine relationships suggest (Peter de Vries 2003) (Gao 2017) Chatbots have the potential to make Sri Lanka's public sector more responsive, flexible, and citizen-focused by optimizing operations and enhancing service delivery.

### 3. Hypothesis for this study

This research explores the use of chatbots in government, concentrating on the sources of trust related to these artificial intelligence tools. The study looks into what influences people's confidence in AI chatbots, especially with regard to municipal governments in Japan. The study clarifies the nuances of trust dynamics in the deployment of AI technologies in public services by analyzing the relationship between the field of inquiry, the stated aims of chatbots, and the degree of trust in their responses. The successful integration of chatbots in the Japanese public sector requires a thorough understanding of the subtleties around trust. Based on these findings we have defined following hypothesis for Sri Lankan context.

H1: In Sri Lanka, the level of public trust in AI chatbots is anticipated to fluctuate based on the specific domain under consideration.

It is expected that domains with a clear administrative function, such as Government Services and Information Provision, will experience greater levels of trust compared to areas that demand nuanced social and judgmental skills, such as Citizen Engagement and Feedback Mechanisms.

H2: The effective communication of transparent and beneficial objectives by the Sri Lankan government regarding the integration of AI chatbots into public services is hypothesized to have a positive impact on public trust levels towards these technologies. This effect is particularly expected in domains where consistency in response quality and openness in the process are underscored.

### 4. Method

A qualitative research approach will be used to get opinions from Sri Lankan ICT professionals about the main conclusions of

the study on public trust in AI chatbots in the public sector. We will undertake semi-structured interviews with a range of Sri Lankan ICT professionals, including specialists in technology integration and public administration. The main topic of discussion during the interviews will be the study's implications for the Sri Lankan environment, especially as it relates to the dynamics of public confidence towards AI chatbots in public services.

Participants will be asked to share their thoughts on the study's sources of trust as well as their thoughts on the theories developed specifically for Sri Lanka. The information gathered from these interviews will be subjected to a thematic analysis in order to derive important conclusions and suggestions for practitioners and policymakers in Sri Lanka's public sector.

Table 2. Total energy consumption of different AF types in

Specific domain	Purpose
Government Services and Information Provision	Foster User Trust and Acceptance
Citizen Engagement and Feedback Mechanisms	Ensure Data Privacy and Security

Also the participants will asked based of review article (Aoki 2020) and more on literature reviews.

1. To what extent do you think you can trust the Chabot's response to your enquiry?
2. Between the human staff and the chatbot, which do you think you can trust more?
3. What will be the best practices for chatbot?
5. Results and Discussion

In the Sri Lankan context, the results of this study on public trust in AI chatbots within the public sector reveal nuanced dynamics influenced by the nature of the inquiry area and the clarity of articulated purposes. Sri Lankan ICT professionals exhibited varying levels of trust in AI chatbots, with a notable trend towards higher trust in specialized domains like Government Services and Information Provision compared to areas requiring complex social and judgment skills, such as Citizen Engagement and Feedback Mechanisms. This finding underscores the importance of considering the specific context of inquiry when assessing public trust in AI technologies, suggesting that competencies and perceived capabilities of chatbots play a significant role in shaping trust levels.

Moreover, the communication of clear and beneficial purposes by the Sri Lankan government for the integration of AI chatbots in public services emerged as a crucial factor influencing public trust levels in these technologies. Particularly in areas where uniform response quality and process transparency are emphasized, the clarity of purposes significantly impacted trust dynamics among ICT professionals. These results highlight the necessity for policymakers and practitioners in Sri Lanka to prioritize transparent communication strategies that emphasize the

benefits and objectives of AI chatbot integration in public services to foster trust among stakeholders. Overall, the findings underscore the complex interplay between the nature of inquiry, articulated purposes, and public trust in AI chatbots within the Sri Lankan public sector, providing valuable insights for the strategic implementation of AI technologies in governmental services.

Implementing chatbot technology in the public sector poses various challenges and considerations that must be addressed to ensure successful deployment and utilization. Technical challenges encompass the complexity of developing and maintaining chatbot systems, requiring advanced natural language processing algorithms and machine learning models to accurately interpret and respond to user queries. Data privacy and security are paramount, as chatbots interact with users and collect personal information, necessitating robust data protection measures to comply with regulations and safeguard sensitive data. Ethical considerations are crucial, with chatbots expected to uphold privacy, avoid bias, and ensure transparent decision-making processes to maintain public trust. User acceptance and trust pose challenges, as some individuals may be hesitant to rely on automated technologies for public services, necessitating efforts to address concerns, communicate benefits and limitations, and provide user support.

Integration with existing systems can be challenging, as chatbots require access to accurate and up-to-date information to deliver appropriate responses, emphasizing the importance of seamless connection and data synchronization. Training and maintenance are ongoing requirements to enhance chatbot performance, requiring budget allocation and monitoring for continuous improvement.

Establishing the right balance between human and chatbot interaction is critical, ensuring clear guidelines for when human intervention is necessary. Overall, overcoming technological hurdles, prioritizing data privacy and security, addressing ethical concerns, and fostering user acceptance are essential for successful chatbot deployment in the public sector.

## **6. Recommendations**

Based on the findings of this study, numerous recommendations for the application of chatbot technology in Sri Lanka can be made:

### **6.1 Foster User Trust and Acceptance**

Sri Lanka should prioritize increasing user trust and acceptance of chatbot technology. This can be accomplished by excellent communication and clarity regarding the benefits, limitations, and ethical considerations of chatbots. Providing user support and immediately addressing complaints can also help build trust and

boost adoption.

### **6.2 Ensure Data Privacy and Security**

Given the concerns about data privacy and security, Sri Lanka must implement comprehensive data protection measures. To protect residents' personal information, compliance with appropriate data protection rules and the deployment of secure data storage and communication protocols are required.

### **6.3 Monitor and Evaluate Performance**

Chatbot performance must be monitored and evaluated on a regular basis to ensure its efficacy and efficiency. To measure the impact of chatbots on public service delivery, Sri Lanka should establish performance indicators and evaluation frameworks. This will aid in identifying areas for improvement and guiding future improvements to chatbot technology in the country.

By implementing these recommendations, Sri Lanka will be able to effectively harness the potential of chatbot technology to improve public service delivery and increase citizen trust in order to engage with this technology more effectively.

## **7. Conclusion**

In conclusion, the integration of chatbot technology in Sri Lanka holds immense promise for enhancing public services. By employing chatbots, the country can streamline access to public services, deliver timely information, and alleviate the workload on government personnel. Chatbots offer residents a convenient platform to connect with government institutions, improving service efficiency and inclusiveness. They can promptly address citizens' queries and concerns, reducing wait times and enhancing satisfaction, particularly during emergencies.

Moreover, by automating basic tasks, chatbots enable government employees to focus on more complex responsibilities, boosting productivity. To fully harness the benefits of chatbots, Sri Lanka must address technical challenges, prioritize data privacy and security, and foster user trust. Collaboration with stakeholders, training initiatives, and performance monitoring are essential for successful implementation. Ultimately, chatbot technology has the potential to revolutionize public service delivery in Sri Lanka, prioritizing citizens' interests and ensuring efficient and citizen-centric governance.

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