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The Use of Chatbots in the Public Sector

By Stine Lomborg, Ece Elbeyi, Kiran Kappeler, and Lisa Reutter Larsen

Summary

This research brief presents a systematic literature review of what current research literature conveys about the implementation and use of chatbots in public sector workflows and in interactions with citizens. The purpose of this research brief is to identify and analyze both the opportunities and challenges within this domain through a systematic synthesis of existing empirical research on the implementation and use of, as well as citizens' attitudes toward and experience with, chatbots in the public sector. The brief shows that chatbots can contribute effectively to certain tasks in the public sector; however, they also generate new work and shifts in responsibilities for workers. From citizens' perspective, research finds that well-educated, younger, and resourceful citizens are more likely to trust and have positive experiences with chatbots when interacting with public authorities, whereas for others, e.g., citizens with disabilities or citizens with more complex requests and challenges, chatbots create new friction in their encounters with the public sector. This may reinforce existing social and digital inequalities within the population.

Background and Purpose

In recent years, generative artificial intelligence (AI) has received considerable attention in public debates. A large share of the Danish population has experimented with solutions such as OpenAI's ChatGPT, Microsoft Copilot, or Google's Gemini.¹ Various technological chatbot solutions

are capable of generating text and other forms of output based on different prompts; therefore, they are envisioned as tools that can support completing tasks in new ways and with higher quality.

Generative AI is also increasingly being deployed in the public sector, driven by an ambition to streamline and enhance workflows, and provide better and faster services to citizens (Bright, 2025; Kaun & Männiste, 2025; Mergel et al., 2023). However, empirical evidence remains limited regarding the effects of the implementation of these technologies on the public sector, as well as how citizens and public employees experience these chatbot solutions.

Therefore, this research brief provides a systematic overview of what the scholarly literature conveys about the

What are Chatbots?

Research into chatbots constitutes an interdisciplinary and rapidly developing field of research in which no shared, widely accepted definition of the phenomenon exists yet. Basically, this concerns language-based models capable of interacting with users through text. In this context, the term chatbots encompasses both older solutions based on simple decision-tree models, typically used for information retrieval and responding to frequently asked questions (FAQ), and more advanced, adaptive, and responsive language models that dynamically tailor their output to the user through ongoing interaction (Kaun & Männiste, 2025).

¹ See Nielsen, R. K. (2025). Brugen af generativ KI i Danmark 2025. CAISA, Det Nationale Center for AI i Samfundet. <https://caisa.dk/forskning/generativ-ki-i-danmark-2025>

implementation and use of chatbots in public sector workflows and in interactions with citizens. The purpose of this systematic literature review is to identify and analyze both the opportunities and the challenges within this field through a systematic examination of existing empirical research. The analysis presents key findings from empirical research on the implementation and use of chatbots, as well as citizens' attitudes towards their use in the public sector.

Methods

The basis of this review is a systematic examination of empirical research findings from 64 studies on the use of chatbots in the public sector. All included studies are peer-reviewed empirical studies published between January 2023 and January 2026. The body of research comprises case studies, surveys, randomized field experiments, observational studies, document analyses, and qualitative interviews with managers, employees, and citizens who work with or encounter chatbots in their interactions with public authorities. This systematic literature review centers on public administration as a whole rather than on specific service domains, such as the social service sector. The purpose is to establish a systematic overview of the field; therefore, the empirical findings can serve as an analytical basis for subsequent, in-depth research of specific policy and practice domains.

A detailed description of the methodological steps in the systematic literature review, further information about our search terms, and the complete reference list can be found in the appendix of this brief.

The review encompasses studies from across the world. In conducting the analysis, particular emphasis was placed on studies carried out in the Nordic region, where the structure of the welfare state, the population's general digital skills, and the overall level of trust in public authorities are relatively comparable. The analysis is divided into two parts: The first part focuses on public sector workflows, and the second centers on citizens' perspectives.

Optimizing Workflows and the Production of New work

Generative artificial intelligence has contributed to substantial expectations about the broad enhancement of processes and workflows in public administration, through the use of chatbots (e.g. Mergel et al., 2023; Bright et al., 2025). Several studies confirm this optimizing potential, showing, e.g., that chatbots can simplify repetitive tasks such as form completion (Abdenebaoui et al., 2024; Millan-Vargas et al., 2024) and reduce simple

communication barriers for citizens whose first language differs from that spoken in the relevant national context (Truong et al., 2024).

Conversely, chatbot communication can produce additional work in the form of increased inquiries from citizens through other channels (e-mail and phone calls), e.g., because chatbot correspondence does not sufficiently assist the citizen (Hemesath & Tepe, 2024; Chen & Gasco-Hernandez, 2024), or because improved service experiences lead to "rebound effects" in the form of increased demand from citizens (Abdenebaoui et al., 2025). Since chatbots in the public sector remain a relatively new phenomenon, both positive and negative effects may evolve over time, a development that may reflect technological, organizational, and market changes, as well as the evolution of users' skills. At present, no long-term studies exist on how chatbots or other forms of AI influence the efficiency of public administration.

More unambiguous evidence exists regarding the production of new work when chatbots are introduced: This includes system maintenance, ensuring data quality, training models, data annotation, and related tasks. The research literature documents a shift in responsibilities toward other professional competencies rather than an elimination of tasks. For instance, Kaun and Männiste (2025), in their study of municipal chatbots in Estonia and Sweden, and Larsen and Følstad (2024) in Norway, find that municipal employees increasingly assume the role of AI trainers.

It remains unclear how public administration employees should collaborate with generative chatbots and which types of tasks this technology is best suited to address. Several studies highlight the importance of domain-specific expertise and contextual nuances in working with generative AI (e.g., Nzobonimpa et al., 2024). These studies emphasize chatbots as augmentations or collaborative partners rather than as independent actors in completing tasks.

Finally, a range of studies demonstrates that chatbots and other forms of AI prompt the redesign of existing organizational processes (Carlizzi, 2025; Sienkiewicz-Maljurek, 2025), including the creation of dedicated AI teams responsible for the ongoing maintenance and development of this technology (Van Noordt & Tangi, 2023; Maragno et al., 2023; Selten, 2024). These studies also show that successful AI implementation depends less on the technological solution itself than on organizational readiness and expertise, the involvement of diverse stakeholders, and collaboration with external partners to adapt an AI solution to the specific organizational problem

and work practice in which it is embedded (Dreyling et al., 2024; De Longueville et al., 2025; Neumann et al., 2024). They further emphasize that transitions from initial experiments and pilot studies to broader implementation are challenging and require substantial organizational investments in skill development to ensure long-term and sustainable solutions (e.g., Heinisuo et al., 2025; Hinton, 2023; Henk & Richter, 2024).

Citizen Experience: Information, Skills and Expectations for Data Security

The research literature shows that chatbots can increase the availability of simple public information (24/7), and that this is experienced as valuable to citizens. This is especially true for general inquiries which are time-sensitive (such as “where is the nearest public restroom?”, “what is the level of air pollution in my area today?”, etc.) (Følstad & Bjerkheim-Hanssen, 2023; Maragno et al., 2023; Ruiz & Reascos-Paredes, 2024).

Research into citizens’ opinions and experience of chatbot-based communication with the public sector consistently demonstrates that not all types of inquiries are suitable for chatbots. Chatbots can be useful tools for addressing general inquiries and supporting general information-seeking activities on websites; however, they are less suitable for managing personal, sensitive, or complex information. In such circumstances, some studies indicate that citizens have a clear preference for face-to-face communication or another type of human contact, depending on the context (Bao et al., 2025; Hemesath & Tepe, 2024, Kaun & Männiste, 2025; Ruiz & Reascos-Paredes, 2024). Altogether, the research literature indicates that prospective chatbot solutions should be weighed against specific citizen communication needs and objectives, rather than being regarded as a one-size-fits-all solution for interaction with the public sector.

Not all citizens need or benefit from chatbots. This can, for instance, be because of vulnerability due to complex personal backgrounds (Wang et al., 2024), or lack of digital skills, which are well documented in research in relation to other digital technologies. Well-educated, younger, and resourceful citizens have a higher degree of trust and more positive experiences when it comes to public sector chatbots (Larsen & Følstad, 2024), whereas for instance citizens with disabilities (Zapata & Diaz, 2025) or citizens with complex backgrounds experience new friction in the encounter with the public sector. This may amplify existing social and digital inequalities in society. One example of workflows intersecting with citizen experience is chatbots giving wrong answers, thereby creating new problems for citizens, who already feel that they struggle to navigate the public sector, and for the caseworkers tasked with helping

those citizens (Jo et al., 2025). For citizens, as for workers, this can generate uncertainty about whether chatbot-generated information is correct and credible, as well as how it can be verified and how its quality can be assured. The implementation of chatbots can thus generate invisible work, for citizens as well as for caseworkers and other citizen-facing workers.

Lastly, the literature demonstrates that citizens have high expectations for the public sector’s use of chatbots when it comes to information integrity, data security, and responsible data use. For example, some studies point to the significance of citizen’s trust for their willingness to use chatbot solutions in communicating with the public sector (Bao et al., 2025), and to the need for built-in mechanisms that ensure democratic accountability (e.g. Elliott, 2025; Persson & Zhang, 2025).

Preliminary Conclusions

This research brief presents a systematic overview of what current research literature conveys about the use and opinions of chatbots in the public sector. However, the field is not yet well-established, and in many cases the use of these chatbots is in an initial stage of pilot testing. In addition, many of the reviewed articles describe the technical infrastructure of the examined solutions only to a limited extent, which makes it difficult to determine precisely which technologies are employed. Therefore, the conclusions of this brief regarding opportunities and challenges related to the implementation of chatbots in the public sector must be considered as preliminary. Nevertheless, we wish to draw attention to the resemblance between the findings on chatbots in the public administration and previous studies of other types of (public) digitalization, such as literature on digital skills and vulnerability as well as automated decision-making support.

Historical as well as contemporary studies of digital technologies and their practical application have consistently shown that technological potential, which is identified during the development of solutions decoupled from the contexts in which they are ultimately applied are rarely realized in practice. Based on the above, this also seems to be the case when it comes to chatbots in the public administration (Jo et al., 2025). Overall, the research indicates that even though chatbots can contribute to optimizing some public sector workflows, at the same time they generate new work in the shape of system development and maintenance, new tasks for caseworkers supported by AI, and quality assurance of data input and output.

To ensure meaningful AI solutions, the research literature also shows that it is essential to take the organizational context into account, including key stakeholders, core tasks that may be enhanced, and the problems that should be solved with chatbots. Technological potential may be one thing on paper and something entirely different in practice. In relation to this, it appears that the gains of AI implementation are often indirect and, in fact, derivative effects, both positive and negative. More research is needed to understand and follow these effects over time.

Future-oriented Strategic Considerations

Based on the above, we see fundamental questions for further analysis in relation to the use of chatbots in the public sector. These are related to citizens' trust in the welfare state and to fundamental principles of universal welfare access, such as can be observed in the Nordics:

Firstly, what are the long-term societal effects of further public sector digitalization on keeping trust as a core value in the citizen-welfare state relationship? If human-to-human contact is perceived as a better and more trust-building form of communication from a citizen's perspective, how can a digital assistant solution prevent the erosion of this trust?

Secondly, how can digital inclusion and equitable access to public services be ensured for all citizens? One-size-fits-all approaches appear unsustainable, and differentiated solutions may be required for different groups of citizens and workers, as well as for varying types of inquiries and needs. How can AI solutions be designed in a way that citizens are not required to be able to operate a chatbot to contact public administration, and to access public services, but rather so that they are designed based on a thorough understanding of differing citizens' needs?

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About CAISA

The National Center for Artificial Intelligence in Society (CAISA) is a national consortium that gathers researchers from the University of Copenhagen, Aalborg University, Aarhus University, the IT University of Copenhagen and the Technical University of Denmark in close collaboration with the Pioneer Centre for Artificial Intelligence (P1).

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Research briefs present research and evidence-based knowledge about AI and society in an accessible way.

Position briefs express the authors' research based and informed assessment of important challenges related to AI and society.

CAISA's briefs are edited by Anders Søgaard, Professor at the Department of Computer Science at the University of Copenhagen and Chief Scientist at CAISA, and Johannes N. Feldt, Research Assistant at CAISA. All briefs are read by – and receive comments from – at least one external independent researcher before publication.

The authors are responsible for the contents of a CAISA brief.

Appendix: Methods

This literature study is based on a systematic review of existing research literature and has the purpose of identifying and analyzing research on the use and opinions of chatbots in the public sector. We have followed the PRISMA-method, a scientifically recognized approach to systematically summarize and synthesize empirical research across existing studies. Systematic literature reviews provide the reader with an overview of the current scientific knowledge within a field, while the analysis clarifies which aspects are in further need of attention and study, as well as which dynamics still seem unclear or uncertain. In a systematic literature review the researchers follow a predefined and transparent procedure, where all accessible studies that live up to specific inclusion criteria are identified, assessed, and analyzed with the purpose of arriving at the most comprehensive and reproducible synthesis of knowledge possible.

Here, we present how we have identified and analyzed relevant research articles.

Search Strategy

A fundamental methodological challenge of studying the use of generative AI in the public sector is that the field is still young and evolving. Further, the phenomenon under study is located at an interdisciplinary intersection. Different disciplines, such as social science and data science, often use different terms to describe the same phenomenon. There is currently not a unified common understanding or consistent use of terms across studies and disciplines. A central purpose of this brief has been to reach widely across disciplines to gather interdisciplinary knowledge about the use of chatbots in the public sector. It should also be noted that the terms "public sector" and "public administration" in themselves are ambiguous. What is understood as part of the public sector varies by national context. Since Denmark has a relatively extensive public sector, we have not considered this ambiguity as significant for our analysis that places a focus on Denmark and the Nordics.

We began by searching through two scientific databases, Web of Science and Scopus, with a focus on titles, key words, and abstracts that combined terms such as "generative AI" and "chatbots" with terms related to the public sector.

We have used the following search string in the database search:

Title: ("generative AI" OR "GenAI" OR "chatbot*" OR "generative artificial intelligence" OR "artificial intelligence"

OR "AI") AND ("public sector" OR "public administration" OR "public governance").

Key words: Same Boolean structure used on authors' key words.

Abstract: ("generative AI" OR "GenAI" OR "chatbot*" OR "generative artificial intelligence") AND ("public sector" OR "public administration" OR "public governance").

Only articles published between January 2023 and January 2026 were included in the selected literature, after which duplicates and non-English language publications were excluded. Furthermore, only peer-reviewed studies with full text available online were included in the analysis, to secure accessibility to the necessary empirical and methodological basis, such that our work can be reproduced.

Automated Coding for Assessment of Relevance

More than 300 articles were identified through the search strings and the following sorting procedure. Full texts for all articles were downloaded and collected for further analysis.

During the full text screening we applied an automated coding procedure using OpenAI's GPT-4 model via API to assist with classifying and identifying the studies. The purpose was to systematically identify empirical studies about concrete practical chatbot implementations in public sector contexts to assess reported benefits, risks, and implementation results.

Automated coding was undertaken based on a predefined manual and codebook, that was designed regarding the research question and the criteria for inclusion. Each study was analyzed regarding variables such as national context, domain, type of chatbot implementation, methods and data, sample; and main conclusions. The structured outputs were subsequently reviewed and validated manually by the research team.

To ensure legally compliant data treatment, all documents were handled via OpenAI's API. Content sent via the API is not used for model training, is stored for a maximum of 30 days for system monitoring and is permanently deleted afterwards. The articles themselves were not shared publicly and were analyzed only within the scope and purpose of this research brief. Only aggregated and anonymized results were reported.

Analysis

To be included in the analysis, the studies had to:

1. be about concrete practical chatbot implementation or use in a public sector context.
2. be based on empirical data.

After automatic coding and manual validation, studies that did not fulfill the inclusion criteria were excluded.

Altogether, **64** studies were included in the final selection of literature. A complete list of references to the articles is included at the end of this appendix. After selection, these articles were manually analyzed. The research team distributed the articles amongst each other to ensure thorough reading, annotation, and thematic comparison across cases. This manual phase enabled a thorough synthesis of findings, with a focus on reported benefits, risks, and contextual factors of chatbot implementation in the public sector.

Included Studies

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- See Appendix.



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