AI in Local Government Practice - interview-based study from Poland

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Abstract

The application of Artificial Intelligence (AI) mechanisms in public administration is gaining increasing attention globally. However, empirical research in the Polish context remains limited. This study addresses a notable research gap by exploring the level of AI-related knowledge among public administration officials through semi-structured interviews. The primary goal was to assess public officials' knowledge regarding the use of Artificial Intelligence (AI) in the support of daily tasks and to identify key functional areas where AI holds development potential. Additionally, research was aimed to assess awareness regarding the potential of AI to optimize administrative processes. Research method was an interview with managers and IT specialists from a dynamically developing municipal office in Poland. The study explores the potential for integrating Generative AI (GenAI) solutions into local government structures in the future. These insights contribute to the discourse on AI readiness in public administration and inform future strategies for digital transformation in the public sector.

Keywords: GenAI, public sector, public administration, artificial intelligence.

1. Introduction

Currently, fundamental artificial intelligence mechanisms such as machine learning, support in the analysis of large datasets, and decision-making assistance through content analysis are becoming standard tools in the operations of municipal offices. This suggests that even less technologically advanced segments of the public sector are recognizing the potential benefits of implementing such technologies in their routine activities.

Furthermore, based on personal observations, text-to-video AI tools such as Sora and image-generation platforms like Midjourney, which enable the creation of abstract visualizations, are increasingly being utilized for marketing purposes. On the other hand, excessive use of artificial intelligence by public administration may lead to adverse consequences. As shown in a study conducted by Zhou, Choudhry, and Sanfilippo [8], involving a sample of 292 residents of a city utilizing these tools, the most concerning issues included the blurring of boundaries between authentic and fabricated content, data privacy, copyright concerns, and environmental impact [3].

The primary goal was to assess public officials' knowledge regarding the use of Artificial Intelligence in the support of daily tasks and to identify key functional areas within local public administration where AI holds development potential. To achieve this aim, two research questions were formulated:

RQ1: What is the level of knowledge regarding the application of Artificial Intelligence in the public sector?

RQ2: In which organizational and technical areas is Artificial Intelligence currently utilized within public administration?

Both the achievement of the stated objective and the answers to the research questions are intended to evaluate the readiness of local public administration in Poland for the implementation of GenAI technologies.

This paper is structured into four parts. The first section presents a literature review on the application of GenAI in public administration as a new trend in public administration management. This analysis provides a basis for determining the potential for the development of AI-assisted tools in the work of municipal offices. The second section outlines the research methodology. The third section presents the research

findings. The paper concludes with a summary and an indication of directions for future research in this area.

2. Generative AI in Local Public Administration

The use of Generative Artificial Intelligence is creating new opportunities for government. According to a 2024 study by McGuire Research Services, 82% of government employees use artificial intelligence on a daily or weekly basis, and 84% of public sector organizations intend to increase their investment by up to 24% in upgrading existing technologies to incorporate AI capabilities [2].

Artificial Intelligence refers to the ability of machines to carry out tasks that typically require human intelligence, such as speech recognition, decision-making, problem-solving, learning from experience, and visual perception. This indicates that the foundational applications of traditional AI—such as performing tasks based on predefined rules, machine learning utilizing large datasets, and conversational AI enabling machines to interpret and respond to human speech—are now widely recognized and frequently employed across public institutions. The evolution of AI has unfolded across several key components, each playing a vital role in its development and application. These components include: Machine Learning, Deep Learning, Neural Networks and Natural Language Processing, which focuses on the interaction between machines and human language [1].

Generative Artificial Intelligence surpasses these conventional applications by being oriented toward generating novel instances of various types of data. These include not only textual content, as was typical previously, but also audio, video, images, advanced event scenarios, models, and visualizations. GenAI systems include widely used tools such as Chat Generative Pre-Trained Transformer (ChatGPT), DALL-E, MidJourney, and Gemini. Among these, ChatGPT functions as a large language model (LLM) and serves as a natural language processing–based chatbot designed to engage in human-like conversations by analyzing and interpreting the meaning of input sentences and generating new sentences in response to user prompts [4].

Potential regulatory solutions proposed by the respondents included legally enforced labeling of AI-generated content and public education on AI literacy. These elements should, therefore, be considered in the development of implementation policies related to generative artificial intelligence. At the same time, GenAI does not have to serve local public administration solely for the creation of advanced visualizations. An increasingly popular application of GenAI is its use in the domain of cybersecurity [2],[6]. Another potential use involves supporting and personalizing recommended attractions for tourists visiting cities [5]. GenAI can also assist in decision-making processes that are already partially supported by artificial intelligence by discovering new insights from data and transforming them into innovative models for managing smart city digital twins [7].

3. Research Method

The research method employed to achieve the stated goal was a targeted personal interview. The research technique that we used was a detailed schedule with open and closed questions to understand the phenomenon being discussed. To obtain an accurate situational overview of the selected administrative unit, the interviews were divided into two target groups. The first part of the interview focused on the organizational aspects of the office and was conducted with senior management representatives. The second part addressed technical aspects and was carried out with representatives from the IT department. The interview was conducted with three persons representing the organizational group and two persons representing the technical group.

The study consisted of several stages. The first stage involved developing separate interview scripts for the management team and the IT department. The script for the organizational area was divided into four pillars of AI application, each comprising four detailed questions. These pillars included:

- Strategy, management, and ethics;
- Challenges and limitations;
- Financing and cooperation;
- Development perspectives.

The IT department script consisted of five main questions, which were supplemented with follow-up questions depending on the respondents' answers. Initially, at the outset of the interviews, respondents were presented with an explanation of the distinction between classical AI and GenAI. However, the organizational group indicated that They did not perceive these terms as referring to two distinct concepts. The technical group demonstrated an understanding of the differences between the two but also tended to use the general term "AI" when referring to its application in their core activities. As a result, the questions presented in Table 1 were generalized to use the term "AI" to avoid causing confusion among the respondents. The table 1 presents the list of questions asked by target group.

Table 1. Research interview schedule.

Pillar	Questions	
	Organizational group	**Technical group**
Strategy, management, and ethics	What are your views on the ethical considerations associated with the deployment of artificial intelligence in the context of public administration? In your opinion, is it necessary to establish legal regulations to govern the use of artificial intelligence within the public sector? - If so, should such regulations be introduced at the national or local level? Could the implementation of artificial intelligence be considered a strategic priority within public administration? - If so, what potential benefits might arise from its adoption? Does your institution employ personnel utilizing artificial intelligence, for example, to enhance communication and engagement with citizens?	Do you utilize artificial intelligence in your professional role? - If so, in which areas of your work? - If so, which types of AI-based solutions do you employ? Does senior management support activities related to the implementation and use of artificial intelligence?
Challenges and limitations	What limitations and potential risks do you perceive in relation to the application of artificial intelligence within public administration? Has a risk assessment been conducted with regard to the use of artificial intelligence? Has the public's response to the utilization of artificial intelligence been examined? Do you have any concerns about the reliability and trustworthiness of information generated by artificial intelligence?	Does the institution possess adequate technical assets to support the implementation of artificial intelligence-based solutions? - If not, which solutions should be introduced to enable the use of AI? - If so, are there any plans for the further development of this technology? Do you perceive any benefits arising from the use of artificial intelligence in the area of public administration IT? - If so, which benefits?
Financing and cooperation	Has the budget allocated resources for financing the development of technologies supporting the advancement of artificial intelligence within public administration? Are the activities related to the use of artificial intelligence in your institution supported by the academic or research community? Are individuals utilizing artificial intelligence for the optimization of their tasks adequately trained in this area? (For example, have they participated in publicly funded training programs, received no formal training, or acquired their knowledge independently?) Does your institution participate in externally funded projects aimed at the development of artificial intelligence–assisted activities?	Czy proponujesz kierownictwu zabezpieczenie środków w budżecie miasta na rozwój technologii AI w jednostce? Czy aplikujesz do konkursów pozwalających na dofinansowanie projektów związanych z rozwojem AI w administracji publicznej takich jak program Fundusze Europejskie na Rozwój Cyfrowy 2021-2027?
Development perspectives	Does your institution intend to further develop the application of artificial intelligence over a 5–10 year horizon? Is the establishment of dedicated teams to oversee the implementation and use of artificial intelligence within your institution anticipated? Are training programs conducted for civil servants to ensure responsible and ethical use of artificial intelligence? Do you perceive long-term potential benefits associated with the use of artificial intelligence?	Do you perceive long-term potential for the further development and application of artificial intelligence within your institution?

Source: Own study.

Subsequently, a city was selected for the research. Ultimately, a medium-sized city located in the Pomeranian Voivodeship of Poland, with a population of approximately 26,000 inhabitants, was chosen. The city is characterized by dynamic demographic growth and is predominantly inhabited by young individuals and families. It is governed by newly elected authorities (2023 elections), who are open to innovative solutions. A

preliminary analysis of the activities undertaken by the city's leadership indicated the use of AI mechanisms in certain operations, such as marketing, which served as one of the premises for selecting this unit.

The interviews were conducted at the City Hall on April 12, 2025, with representatives from both the managers and the IT department.

4. Research Results

Initially, an interview was conducted with a representative of the senior management, specifically the City Secretary. Although the selected administrative unit was observed to utilize Artificial Intelligence for creating content directed at residents via social media, the interview revealed a general lack of knowledge on the topic by the respondent. The City Secretary interpreted the use of AI primarily as the implementation of advanced technologies aimed at optimizing office operations, such as electronic document circulation, online application submissions, and communication apps for residents. After a general introduction to the topic of AI applications in public administration, further significant insights were obtained. The interview revealed ethical concerns regarding the reliability of AI-generated outputs, particularly related to the risk of overusing AI for public communication without proper verification of the generated information.

A markedly different outcome was obtained during the interview with representatives of the IT department. It was found that AI is widely utilized within this area. In response to the question regarding the use of AI to support daily tasks, the following applications were identified:

- Drafting documentation and formalizing email responses, significantly reducing time consumption;
- Creating official letters, often through the generation of document templates;
- Conducting market research, where AI identifies the necessary technical equipment and proposes specific models along with technical specifications;
- Supporting simple technical issues through troubleshooting advice, configuration tips, and quick clarifications.

Subsequently, the respondents were asked about specific tools used to improve task efficiency and quality. They indicated regular use of ChatGPT. Additionally, AI-based functionalities integrated within the antivirus software installed on all employees' workstations were utilized, supporting cybersecurity through threat detection and behavioral system analysis. Occasionally, other AI tools available in office software packages were also employed.

The next question addressed the support of senior management for AI implementation aimed at improving operational efficiency. Responses confirmed that some members of the management team lack awareness of AI applications in the public sector and, consequently, do not recognize the potential benefits. Nevertheless, newly hired employees possess some AI knowledge, although the topic has not been explicitly discussed at the organizational level. The interviews also highlighted that younger employees demonstrate openness to modern technologies and eagerly adopt innovative solutions that facilitate task optimization and acceleration.

Finally, the respondents were asked about the potential for AI to support the IT department in public administration. They asserted that AI could significantly enhance officials' work, particularly in the area of IT infrastructure monitoring and management. Administrators emphasized the benefits of AI in detecting network anomalies that could indicate unauthorized access attempts, DDoS attacks, or other threats. AI-based systems could continuously analyze network traffic, identify unusual patterns, and automatically alert administrators to potential issues. This would enable faster response times, minimize risks, and prevent major failures that could impact the functioning of public administration. Implementing AI in this capacity could substantially elevate the level of IT security within public sector entities, providing administrators with a proactive infrastructure management tool.

5. Summary and Conclusions

The aim of this paper was to assess public officials' knowledge regarding the use of artificial intelligence in performing daily tasks, and to identify key areas of public

administration where AI has potential for development. To achieve this objective, two research questions were formulated. The first concerned the level of knowledge related to the use of AI in the public sector. The study revealed that senior management was generally aware of the growing adoption of AI across various sectors; however, they lacked understanding of how AI mechanisms could be applied to optimize administrative work. In contrast, the interviews conducted with representatives of the IT department indicated that the technology is already being widely utilized to improve efficiency and reduce task completion times.

The second research question aimed to identify organizational and technical areas where AI is being applied. Although the senior management initially demonstrated limited understanding of AI applications in the public sector, after being introduced to the technology's fundamentals, a noticeable change in attitude and interest was observed, particularly regarding its potential use in areas such as resident communication and support for drafting opinions on selected matters. AI could, for instance, assist in retrieving relevant court rulings or applicable legal regulations for specific cases. The IT department, meanwhile, highlighted areas such as cybersecurity, troubleshooting minor technical issues, market analysis, and the creation of document templates as domains where AI is effectively utilized.

Both senior management and IT department representatives acknowledged certain risks associated with the use of AI in public administration. These risks primarily stem from a lack of trust among employees and residents, which is linked to insufficient knowledge about AI's capabilities and the potential benefits of its use. Another identified risk was the possibility of over-reliance on AI-generated results and the existence of undetected errors.

In conclusion, there is significant potential for the use of AI mechanisms, as well as its advanced form, GenAI, to support the functioning of local public administration. AI could contribute to enhancing data security, accelerating the processing of applications, improving communication quality with residents, and assisting in the performance of simple, repetitive tasks such as drafting templates for official letters or legal acts. However, no change can be successfully implemented without proper understanding and effective management. Therefore, the first step in introducing AI mechanisms should be the implementation of an educational campaign aimed at both public administration employees and residents, followed by strong endorsement of AI adoption by the top management of public sector units.

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