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Application of Artificial Intelligence to Increase the Role of Women in Public Administration

Abdurakhmonova Sitorakhon Zafarovna
Tashkent State Law University
sitkaabdurakhmanova@gmail.com

Abstract

This research article examines the role of artificial intelligence (AI) in enhancing the position of women in public administration. The author analyzes the prospects for introducing AI in public administration, identifying its advantages and disadvantages while considering modern trends. The study highlights the potential benefits of AI, such as objectivity, impartiality, and efficiency in decision-making processes, as well as the challenges posed by algorithmic bias, lack of context, and privacy concerns. Additionally, the article explores the implementation of AI systems in public administration in Uzbekistan, emphasizing the need for educational programs, diverse perspectives, and effective monitoring mechanisms to ensure transparency and fairness.

Keywords: Artificial Intelligence, Public Administration, E-governance, Equality, AI Bias, Leadership Positions

I. Introduction

Digital transformation represents a fundamental feature of modern society and an effective tool for achieving sustainable development. The ability to access digital technologies opens new horizons for social interaction. It is also the key to the "future of work" and, by extension, to the future of development. For example, telehealth services can significantly improve access to healthcare facilities, expanding and improving healthcare coverage among the population. E-governance, in turn, facilitates the delivery of public services, deepens user interaction, and increases their participation in decision-making processes.[1] A particularly important area requiring further change is the participation of women in public administration. One of the most pressing problems in public administration is the insufficient representation of women in leadership positions.

Even with existing efforts to achieve gender equality, structural barriers, stereotypes, and limited access to resources leave women with limited opportunities to actively participate in political life. This problem not only affects the issue of fairness and equality but also impacts the quality of decisions made and the representativeness of government structures. By 2022, 65 percent of the world's Gross Domestic Product

[1] Shivam, G. (2019, October 22). *How digitalization is supporting sustainable development*. GlobalDev.

(GDP) will be digitized.[2] However, approximately 234 million fewer women than men currently have access to mobile internet in low- and middle-income countries. Ensuring women have broad access to digital technologies will increase their economic opportunities and improve their position in the labor market.

It is especially important to consider the impact of digital transformation and automation on employment opportunities. A study conducted in 30 countries found that women's jobs are more at risk of automation, exceeding 70 percent. It is estimated that if 600 million more women and girls could access online services around the world, this would lead to an increase in GDP of US$18 billion[3]. With the increasing development of artificial intelligence, the possibility of its implementation in public administration systems is becoming increasingly relevant, especially in the modern digital era. The application of AI can contribute to overcoming gender barriers and enhancing the role of women in public administration.

II. Methodology

A multi-stakeholder approach is crucial in achieving equality in digital inclusion, requiring the participation of all stakeholders, including governments, local administrations, private entities, civil society, and users. Governments can play a key role in promoting gender equality by expanding digital infrastructure, creating effective technologies, and introducing regulations to ensure women's equal access to digital resources and services. The introduction of new technologies, such as electronic IDs, biometrics, and artificial intelligence, provides opportunities but also requires government intervention to ensure privacy and security. Women are more likely to face barriers to accessing and using digital technologies, including a lack of skills and family constraints based on social norms and gender expectations.

III. Results

Despite the potential benefits of AI, there are cases of bias in AI that cannot be ruled out. Women make up only 27 percent of all CEOs in the United States. Images associated with the term "CEO" featured women in just 11 percent of Google search results in 2015.[4] A study conducted by Anupam Dutta at Carnegie Mellon University found that Google's online advertising system was more likely to display high-paying positions to men than to women. Google noted that advertisers can dictate which users and websites their ads are shown to, and that gender is one of the criteria companies

[2] International Data Corporation (IDC). (2020, October 29). IDC reveals 2021 worldwide digital transformation predictions; 65% of global GDP digitalized by 2022, driving over $6.8 trillion of direct DX investments from 2020 to 2023.

[3] United Nations Development Programme. (2021). Gender Equality in Digitalization.

[4] Larkin, Z. (2022, November 16). *AI Bias - What Is It and How to Avoid It? 1.* https://levity.ai/blog/ai-bias-how-to-avoid

can set. There is speculation that Google's algorithm may have determined that men are more suitable for government jobs based on user behavior. Researchers believe that if only men respond to high-paying vacancies, the algorithm will begin to show such vacancies only to men.

The analysis by Zoe Larkin emphasizes the problem of bias in AI-based recruiting systems and the need for adjustments to ensure neutrality and fairness in the assessment of candidates. After analyzing resumes for a decade, Amazon's computer models noticed that the majority of applications came from men, reflecting male dominance in the industry.[5] Amazon's algorithm learned that males were preferred and began to discriminate against applications indicating female gender. The results highlight the problem of selection bias in AI systems, which occurs when training data does not represent diversity or is selected without proper randomization. A study by Joy Buolamwini, Timnit Gebru, and Deborah Raja found that three commercial image recognition products showed superior performance on images of men compared to women, as well as a strong bias against dark-skinned women. This indicates a serious problem due to the lack of diversity in the training data.

IV. Discussion

AI can enable objective and impartial assessment and appointment processes that promote the fair distribution of opportunities between men and women. AI systems can process large amounts of data, including information about achievements and competencies, allowing informed decisions to be made when appointing women to senior positions. Well-tuned algorithms can help reduce bias and stereotyping when assessing candidates' competencies, helping to increase the representation of women in leadership positions. Automated AI systems can improve the efficiency of decision-making in public administration, contributing to increasing the professional role of women at various levels. Using AI to automate routine tasks can free up time for more complex and strategic tasks, which can be especially beneficial for women in government.

However, artificial intelligence can inherit bias from training data, which can lead to inequality and discrimination in government decision-making. AI may not take into account the context and characteristics of government, which may lead to incorrect or inappropriate decisions regarding women in the field. The use of AI may reduce the role of human factors, which may lead to a loss of empathy and the ability to adapt to complex situations. If there is insufficient data on women in government, AI may be less effective at predicting their potential for participation and influence. Automation of decisions using AI may threaten to replace the human element, which

[5] Iriondo, R. (2018, October 11). *Amazon scraps secret AI recruiting engine that showed biases against women.* https://www.ml.cmu.edu/news/news-archive/2016-2020/2018/october/amazon-scraps-secret-artificial-intelligence-recruiting-engine-that-showed-biases-against-women.html

in some cases may reduce the importance of women's role in decision-making processes. Working with large amounts of government data requires a high level of security and protection from information leaks and hacker attacks.

Conclusion

In Uzbekistan, the introduction of an AI system into public administration could be a key step in solving the problem of underrepresentation of women in politics. First, a mechanism should be developed to collect and analyze data on the status and participation of women in various areas of public administration, including creating a database to collect information on women's workforce, their participation in key issues, and assessing the effectiveness of their decisions. As of 2017, women occupied important positions throughout the country, including 14 senators and 15 deputies in the Legislative Chamber of Parliament, 2 out of 14 ministers, and various other leadership roles. However, at the regional and district levels, the representation of women in leadership positions is relatively low, with only a small percentage of deputy khokims being women.[6] The legal framework regarding women's participation in politics and elections is primarily enshrined in international legal documents, such as the Universal Declaration of Human Rights, the Convention on the Political Rights of Women, and the International Covenant on Civil and Political Rights.

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