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Research Article

Towards Achieving the UN Sustainable Development Goals: The Role of AI in Municipality Services

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Abstract

In 2015, the United Nations adopted the Sustainable Development Goals (SDGs) to end poverty, protect the planet, and ensure global peace and prosperity by 2030. However, progress has been hindered by challenges like the COVID-19 pandemic, climate change, funding shortages, political instability, and data limitations. Municipal services, crucial to achieving the SDGs, provide essential functions like waste management, healthcare, and public safety. Artificial Intelligence (AI) offers innovative solutions to enhance these services, improving urban sustainability and fostering public-private collaboration. This research examines AI's role in municipal services, analyzing its applications, benefits, challenges, and future potential through case studies and expert insights.

1. INTRODUCTION

In 2015, the seventieth UN General Assembly adopted an ambitious set of development goals for improving economic, environmental, and social conditions worldwide by 2030. The seventeen Sustainable Development Goals (SDGs) succeed the Millennium Development Goals (MDGs) as the United Nations' chief initiative for advancing basic living standards and addressing a range of global issues, including gender inequality, climate change, and a lack of universal, quality education [1].

The global threats of pandemics (including COVID-19), violent conflicts and the wars at East Europe, and the Middle East, are harming the progress of SDGs. Only 17% of the goals are expected to be met right after the halfway point into the 2030 goal, with a third of the objectives either moving backward or remaining where they are. During the quadrennial UN SDG Summit in 2023, several governments made a promise to change their pace towards the fulfillment of the goals. Nonetheless, analysts assert that more funds are necessary, including unlocking trillions in additional public and private resources for sustainable development.

According to the UN Sustainable Development Goals Report 2024 (SDG Report, 2024), with just six years remaining, current progress falls far short of what is required to meet the SDGs. Without massive investment and scaled up action, the achievement of the SDGs will continue to be lagging behind. The impacts of the COVID-19 pandemic, escalating conflicts, geopolitical tensions and growing climate chaos have severe effects causing the progress delay. The report details the urgent priorities and areas needed for stronger and more effective action to ensure the 2030 promise to end poverty, protect the planet and leave no one behind. In Fig. 1, according to the data published in the UN Sustainable Development Goals Report 2024, the track progress and trends on achieving the Sustainable Development Goals for Iraq, are illustrated [2].

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Fig. 1 Track progress and trends on achieving the Sustainable Development Goals for Iraq

The SDG index rank for Iraq is (108 out of 166). Most of the sustainable goals are evaluated as “Major challenges remain”, and “Score stagnating or increasing at less than the 50% of the required rate”. For the sake of assessment, the track progress and trends on achieving the Sustainable Development Goals for Finland, is illustrated in Figure (2) [3].

Finland is the highest ranked country with the SDG index rank being (1 out of 166). A comparison between the information shown in figures (1 and 2) give the reader an idea about the level of progress in achieving the SDGs among the highly ranked worldwide country, and Iraq.

As per Fig. 2, and despite the fact that Finland is the leading country in achieving SDG index score, there are many of the goals not achieving satisfactory scores.

Fig. 2. Track progress and trends on achieving the Sustainable Development Goals for Finland

For both countries that are considered (i.e. Finland and Iraq), the following table, presents information about the progress status of the all the 17 sustainable development goals. The progress information listed in this table are partly based on the data of the UN Sustainable Development Goals Report 2024.

TABLE I THE 17 SUSTAINABLE DEVELOPMENT GOALS (SDGS) ADOPTED BY THE UNITED NATIONS AS PART OF THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT

UN Goal Number	**Sustainable Development Goal**	**Description**	**Progress Information**	
			Finland (SDG index =1/166)	*Iraq (SDG index =108/166)*
1	No Poverty	End poverty in all its forms everywhere.	SDG achieved. Score moderately improving, insufficient to attain goal.	Challenges remain. Score stagnating or increasing at less than 50% of required rate.
2	Zero Hunger	End hunger, achieve food security, improve nutrition, and promote sustainable agriculture.	Major challenges remain. Score stagnating or increasing at less than 50% of required rate.	Major challenges remain. Score stagnating or increasing at less than 50% of required rate.
3	Good Health and Well-being	Ensure healthy lives and promote well-being for all at all ages.	Challenges remain. Score moderately improving, insufficient to attain goal.	Major challenges remain. Score moderately improving, insufficient to attain goal.
4	Quality Education	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.	Challenges remain. Score stagnating or increasing at less than 50% of required rate.	Significant challenges remain. Trend information unavailable.
5	Gender Equality	Achieve gender equality and empower all women and girls.	Challenges remain. Score moderately improving, insufficient to attain goal.	Major challenges remain. Score stagnating or increasing at less than 50% of required rate.
6	Clean Water and Sanitation	Ensure availability and sustainable management of water and sanitation for all.	Challenges remain. Score moderately improving, insufficient to attain goal.	Major challenges remain. Score moderately improving, insufficient to attain goal.
7	Affordable and Clean Energy	Ensure access to affordable, reliable, sustainable, and modern energy for all.	SDG achieved. On track or maintaining SDG achievement.	Major challenges remain. Score moderately improving, insufficient to attain goal.
8	Decent Work and Economic Growth	Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all.	Challenges remain. Score moderately improving, insufficient to attain goal.	Major challenges remain. Score stagnating or increasing at less than 50% of required rate.
9	Industry, Innovation, and Infrastructure	Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation.	Challenges remain. Score moderately improving, insufficient to attain goal.	Significant challenges remain. Score moderately improving, insufficient to attain goal.
10	Reduced Inequalities	Reduce inequality within and among countries.	Challenges remain. Score stagnating or increasing at less than 50% of required rate.	Challenges remain. Trend information unavailable.
11	Sustainable Cities and Communities	Make cities and human settlements inclusive, safe, resilient, and sustainable.	Challenges remain. Score moderately improving, insufficient to attain goal.	Major challenges remain. Score decreasing.
12	Responsible Consumption and Production	Ensure sustainable consumption and production patterns.	Major challenges remain. Score decreasing.	Significant challenges remain. Score moderately improving, insufficient to attain goal.
13	Climate Action	Take urgent action to combat climate change and its impacts.	Major challenges remain. Score stagnating or increasing at less than 50% of required rate.	Significant challenges remain. Score moderately improving, insufficient to attain goal.
14	Life Below Water	Conserve and sustainably use the oceans, seas, and marine resources for sustainable development.	Challenges remain. Score moderately improving, insufficient to attain goal.	Significant challenges remain. Score stagnating or increasing at less than 50% of required rate.
15	Life on Land	Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation, and halt biodiversity loss.	Significant challenges remain. Score stagnating or increasing at less than 50% of required rate.	Major challenges remain. Score decreasing.
16	Peace, Justice, and Strong Institutions	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all, and build effective, accountable, and inclusive institutions at all levels.	Challenges remain. Score moderately improving, insufficient to attain goal.	Major challenges remain. Score decreasing.
17	Partnerships for the Goals	Strengthen the means of implementation and revitalize the global partnership for sustainable development.	Challenges remain. Score moderately improving, insufficient to attain goal.	Significant challenges remain. On track or maintaining SDG achievement.

Based on the above-mentioned UN report, and the data presented in table (1), it's quite evident that the world is not on track to meet the seventeen Sustainable Development Goals (SDGs).

In order to migmatite the gap between the planned progress and the achieved results, the Council of Councils (CoC), which includes leading institutions from twenty-four countries, mostly from the Group of Twenty (G20), proposed an agenda based on goals prioritization. The agenda on how to prioritize specific goals need to be aligned with each country's unique circumstances [4]. The main guidelines of the agenda are to; (1) prioritize a subset of SDGs based on national priorities, capacities, and immediate needs, (2) gather data and adopt monitoring to track the SDGs and to evaluate progress, (3) identify challenges, and make informed decisions, (4) point out the interconnectedness of the SDGs with any practical constraints that countries face, (5) adapt dynamic and flexible strategies and technologies, (6) periodically reassess priorities based on evolving circumstances and emerging issues, and finally (7) maintain international cooperation, to learn from other countries their successes and challenges, fostering a collective effort towards achieving the overarching vision of sustainable development.

Considering the guidelines of the CoC agenda, we can give the municipality services a high priority. Municipality services are associated with many of the 17 SDGs, and directly linked to the welfare of human and the improvement of citizens' daily life. Therefore, if countries concentrate on giving them a priority, this will definitely serve in raising the SDG index score, and hence reflected in the progress of many related Sustainable Development Goals.

In Table (2), the 17 UN Sustainable Development Goals are tabulated to illustrate the possible Municipal service that can be aligned with proposed actions that help progress toward achieving the SDGs.

TABLE II THE 17 UN SDGS AND THE CORRESPONDING MUNICIPAL SERVICE TOWARD ACHIEVING THE SDGS.

UN Goal Number	Sustainable Development Goal	Municipal Service	Alignment/Action
1	No Poverty	Social welfare, housing support	Provide affordable housing, support for low-income families, and social assistance programs.
2	Zero Hunger	Food security programs, urban agriculture initiatives	Implement food banks, urban farming, and community gardens.
3	Good Health and Well-being	Public health services, sanitation, recreational facilities	Build health clinics, ensure clean water, and create parks and recreational spaces for mental and physical well-being.
4	Quality Education	Public libraries, educational support programs	Provide access to libraries, literacy programs, and support early childhood education initiatives.
5	Gender Equality	Gender-sensitive urban planning, support for women's shelters	Create inclusive public spaces, provide support for women-led businesses, and ensure gender equality in municipal policies.
6	Clean Water and Sanitation	Water supply systems, waste management	Ensure access to clean drinking water, upgrade sanitation infrastructure, and reduce wastewater pollution.
7	Affordable and Clean Energy	Renewable energy projects, energy-efficient municipal facilities	Invest in solar, wind, and other renewable energy sources for public buildings, and promote energy efficiency in city infrastructure.
8	Decent Work and Economic Growth	Local economic development, job creation programs	Support small businesses, create local jobs, and promote sustainable tourism.
9	Industry, Innovation, and Infrastructure	Smart city initiatives, transportation systems, digital inclusion	Build resilient infrastructure, invest in digital transformation, and promote green building standards.
10	Reduced Inequalities	Accessible public services, inclusive zoning	Ensure access to public services for marginalized communities, and promote policies that reduce socioeconomic disparities.
11	Sustainable Cities and Communities	Urban planning, affordable housing, waste management	Develop sustainable urban development plans, promote public transportation, and ensure resilient infrastructure.
12	Responsible Consumption and Production	Recycling programs, green procurement policies	Promote waste segregation, implement recycling initiatives, and encourage sustainable procurement for municipal projects.
13	Climate Action	Climate adaptation planning, disaster risk management	Create climate action plans, improve green infrastructure, and implement early warning systems for natural disasters.
14	Life Below Water	Coastal management, waterway protection	Protect local waterways, reduce marine pollution, and implement sustainable fishing practices where applicable.
15	Life on Land	Urban forestry, biodiversity conservation	Plant trees, protect natural habitats, and promote green spaces to enhance urban biodiversity.
16	Peace, Justice, and Strong Institutions	Community policing, public transparency	Strengthen local governance, promote participatory decision-making, and improve accountability through open data initiatives.
17	Partnerships for the Goals	Inter-municipal collaboration, partnerships with NGOs and private sector	Foster partnerships with organizations, encourage multi-stakeholder initiatives, and collaborate with regional and international bodies for shared projects.

Municipal populations are growing at an unprecedented rate, making a considerable demand on municipalities to provide efficient and responsive services. In response to this pressure, Municipalities are increasingly adopting technological advancements to manage and optimize operations. Among the technologies, that cities are adopting is AI. Artificial intelligence technologies that emerged as a transformative force, enabling cites and municipality offices to improve service delivery, reduce costs, and increase citizen engagement [5]. AI systems can process vast amounts of data, identify patterns, and provide insights that aid in decision-making, thus enhancing urban living standards.

Adopting Artificial Intelligence (AI) techniques in these services can significantly accelerate progress toward achieving the United Nations' Sustainable Development Goals (SDGs).

This paper introduces a literature review about AI technologies that can improve municipal services. The paper is also examining the various roles, that AI can contribute to lifting the quality of municipal services. Integrating AI techniques in municipal services, such as; waste management, traffic control, public safety, and citizen engagement, will be presented and discussed in the next sections of this paper. Assessment of the challenges municipalities face in adopting AI technologies and the ethical implications associated with their use, will also be presented.

2. RESEARCH METHODOLOGY

This research employs a mixed-methods approach to explore the role of Artificial Intelligence (AI) in municipal services and its potential to advance the United Nations Sustainable Development Goals (SDGs). The methodology is designed to provide a comprehensive understanding of how AI can enhance the efficiency, effectiveness, and sustainability of municipal services, while also addressing the challenges and ethical considerations associated with its implementation. The study adopts a descriptive and analytical research design, combining qualitative and quantitative methods to examine the integration of AI in municipal services. For this, the research provides a systematic review of existing academic literature, case studies, and reports on AI applications in municipal services and their alignment with the SDGs. It also examines some real-world implementations of AI in municipal services across different regions, with a focus on waste management, traffic control, public safety, and citizen engagement. Ethical considerations are considered and the research adheres to ethical guidelines.

3. LITERATURE REVIEW ON SOME AI RELEVANT TECHNOLOGIES

The integration of AI into municipal services represents a significant shift in how cities operate and interact with their citizens. Artificial Intelligence (AI) is increasingly recognized as a transformative force across various sectors, with municipalities exploring its potential to enhance public services. AI technologies, ranging from machine learning (ML) to natural language processing (NLP) and computer vision, are widely used to improve service delivery, optimize operations, and enhance citizen engagements. In this section, the review will examine the growing role of AI in municipal services, with emphasis on key areas such as smart governance, waste management, public safety, urban mobility, and service automation. With AI technologies continuous growth, municipalities will possibly expand their use of AI to offer more personalized, efficient, and responsive services for their people.

When it comes to efficient decision making including smart governance, AI has the ability to transform municipal governance by facilitating effective decision making that relies on data analysis. However, the challenge lies in making sense of vast amounts of data collected by municipalities using sensors, social media and citizen opinion, and using that data to inform or assist in decision making. In particular, machine learning algorithms that are part of AI systems are capable of interpreting such data in real time and thus advising, predicting and assisting in policy formulation.

A study presented in [6] by Zhang et al. highlighted the integration of AI in municipal management systems. The AI-based platforms can provide predictive analytics to help city officials in understanding patterns, such as traffic congestion or energy consumption [7]. Moreover, AI systems can enable personalized services for citizens, and make better engagement and improving service delivery. For example, AI-powered chatbots are already adopted by many municipalities to provide prompt responses to citizen requests, reducing administrative burdens [8].

In smart waste management systems, AI is being employed to make collection more efficient by reducing waste, and optimizing resource allocation. Automatic detection of the type of waste and employing waste segregation is performed using smart bins, equipped with AI sensors, [9, 10]. These AI-powered systems can ensure that recyclable materials are separated efficiently, contributing to sustainability goals.

A significant advancement in AI-enabled waste management has been the implementation of predictive analytics to optimize collection schedules. For instance, AI models can forecast the waste accumulation patterns of different neighborhoods, allowing municipalities to schedule waste collection more effectively, thereby reducing costs and minimizing environmental impact [11.

Municipality services is also including public safety. In public safety activities, AI has also employed where it is used to improve in public monitoring and policing, emergency response, and disaster management. Machine learning algorithms are developed to offer analysis of large volumes of surveillance data, to help municipalities detecting patterns of criminal behavior, traffic violations, or public disturbances. AI-based facial recognition systems are being tested for identifying suspects and tracking criminal activity in urban environments [12].

Additionally, AI has proven useful in emergency response systems. Through the occurrence of natural disasters or accidents, AI systems can process real-time data from several sensors, such as weather stations and traffic cameras, to offer early warnings and guide emergency crews to critical areas more efficiently [13, 14]. These systems can reduce response times and improve coordination, ultimately saving lives.

Optimizing traffic flow, reducing congestion, and improving public transportation systems, are services that are categorized as urban mobility. These services are significantly influencing by adopting AI techniques. Self-driven autonomous vehicles, traffic management systems, and predictive direction-finding and routing applications all rely on AI technologies [15]. Smart traffic management systems, powered by AI, analyze traffic patterns in real-time and adjust signal timings to minimize congestion [16, 17]. AI is also being utilized in public transportation to predict passenger demand and optimize bus or train schedules.

The incorporation of AI into mobility-as-a-service (MaaS) platforms, has provided integrated transportation solutions, to enable citizens to plan their journeys using a single application. Such platforms leverage AI to offer dynamic routing, reducing commute times, and enhancing the overall user experience [18,19].

These AI applications not only improve service efficiency but also free up municipal employees to focus on more complex tasks. Furthermore, AI systems are being used in regulatory services, such as monitoring environmental compliance or managing tax collections. By automating routine tasks, AI can significantly reduce operational costs and enhance service quality [20].

4. THE ROLE OF ARTIFICIAL INTELLIGENCE (AI) IN WASTE MANAGEMENT

One of the key facets of any city lies in the provision of waste management services, as any urban accumulations can be a source of critical environmental pollution. With the help of efficient AI technologies, cities have been able to improve their waste collection processes, while also reducing some of the harm that such activities could potentially cause the environment. For instance, Schwab in [21] says that there has been an increasing use for smart bins which are equipped with sensors and algorithms. For examples, in Singapore, the National Environment Agency (NEA) has deployed AI-powered smart bins in high-traffic areas such as Orchard Road and Marina Bay. These bins use sensors to monitor waste levels and optimize collection routes, reducing operational costs by 20% and improving waste collection efficiency by 30% [22, 23]. Another example about this smart application is the city of Barcelona, which has implemented AI-driven waste management systems, including smart bins, leading to a 15% reduction in waste collection costs and a 25% decrease in carbon emissions [23]. In these two examples, and others that are similar, the AI mechanisms will help to determine when the waste bins are full and how often they need to be emptied, hence avoiding spillage and facilitating timely collection.

Also, AI based route optimization technologies utilized with garbage trucks can conserve fuel, which in turn lessens carbon emissions [24].

For waste recycling, machine learning algorithms can assist in sorting of recyclable materials. In particular, Koch in [25] explains that AI can be utilized in robotic arms within recycling facilities to sort and recycle plastics, glass, and metals with greater precision and faster speeds than human workers [26]. AI-powered robots, which use sensors and cameras, can sort waste with precision and speed, reducing contamination in recycling streams [27].

AI also contributes to the optimization of waste collection routes, where AI algorithms analyze data to determine the most efficient routes for waste collection trucks [28]. This will save fuel and reduce greenhouse gas emissions. A study by Liu et al. [29] demonstrated that AI-optimized collection routes could reduce operational costs by up to 30%.

Applying predictive analytics enables municipalities and private sector companies to plan waste management strategies proactively. For example, AI models can predict increased waste during holiday seasons or major events, allowing for timely resource allocation [30, 31].

5. THE ROLE OF ARTIFICIAL INTELLIGENCE (AI) IN TRAFFIC AND TRANSPORTATION MANAGEMENT

Traffic congestion is a persistent problem in many cities worldwide. AI can improve traffic management by optimizing traffic flow, reducing congestion, and enhancing public transportation systems [32]. AI-powered traffic lights can adapt in real-time to changes in traffic volume, minimizing wait times and reducing fuel consumption. For example, the City of Los Angeles implemented an AI-powered system that adjusts traffic signal timings based on real-time traffic data, which has been shown to reduce travel times by up to 12% [33]. Moreover, AI is central to the development of autonomous, self-driving cars and buses. These cars can communicate with each other and the city's infrastructure to avoid accidents, reduce traffic jams, and optimize routes. Applying this technology is promising, where results show a reduction in traffic-related injuries and increasing mobility [34]. Analysis of real-time traffic data collected from sensors, cameras, and GPS devices can be performed using machine learning algorithms. This will help in adjusting traffic signals dynamically, reducing congestion and travel time [35]. For example, adaptive traffic signal control systems like SCOOT (Split Cycle Offset Optimization Technique) use AI to modify signal timings based on current traffic conditions [36]. Machine learning models are also helpful in predicting potential equipment failures, by analyzing historical and real-time data allowing for appropriate interventions and reducing downtime [37]. This approach is mostly useful for railway systems, where disruptions can have widespread economic impacts [38]. AI enhances public transportation systems by improving route planning and demand forecasting. Optimizing schedules and predict demand spikes, ensuring resource efficiency, can be achieved by applying suitable AI models [39]. Car parking systems relying on AI algorithms to process data from IoT devices, cameras, and sensors installed in parking lots, are finding a wide adoption. These systems improve city traffic by guiding drivers to available parking spaces, leading to a time reduction spent searching for parking and mitigating traffic congestion [40,41].

6. THE ROLE OF ARTIFICIAL INTELLIGENCE (AI) IN PUBLIC SAFETY AND HEALTHCARE

AI technologies are making municipalities safer by enhancing law enforcement and emergency response systems. Predictive policing, powered by AI algorithms, analyzes crime data to forecast where and when crimes are likely to occur, enabling law enforcement agencies to deploy resources more effectively. This approach, already implemented in cities like Chicago and Los Angeles, has been credited with reducing crime rates in certain neighborhoods [42, 43]. The PredPol system utilize machine learning algorithms to assist law enforcement agencies in allocating resources to high-risk areas [44]. AI also improves emergency response systems by enabling faster and more accurate incident detection and response [45]. Additionally, natural language processing (NLP) enhances 911 call centers by transcribing and analyzing calls to prioritize responses effectively.

In disaster scenarios, AI aids in predicting and mitigating risks. AI-driven models can analyze weather patterns and geological data to predict natural disasters like hurricanes and earthquakes [46]. Post-disaster, AI-powered drones and robots support search-and-rescue missions by navigating hazardous environments and identifying survivors [47].

In terms of public health, AI is aiding municipalities in managing healthcare resources and predicting epidemics or outbreaks. For instance, AI can analyze trends in hospital admissions and emergency room visits to predict potential surges in demand, allowing municipalities to allocate resources more efficiently [48]. AI is also used to track occurrences of certain diseases and monitor public health, enabling cities to respond more rapidly to health crises such as the COVID-19 pandemic [49].

7. THE ROLE OF ARTIFICIAL INTELLIGENCE (AI) IN CITIZEN ENGAGEMENT AND GOVERNANCE

By improving the responsiveness and accessibility of municipal services, AI is transforming public participation. Municipal governments are increasingly using AI-powered chatbots and virtual assistants to respond to inquiries from the public and offer details on a range of services. Residents can access government services around-the-clock through these systems, which are accessible via websites and mobile applications. These lower wait times and raise citizens' satisfaction [50].

AI systems are also improving municipal governance's decision-making procedures. AI can help politicians better understand community needs and objectives by analyzing massive datasets and offering insights into public mood. For instance, cities can make better judgments by using AI algorithms to evaluate social media data to determine public opinion on regional issues and regulations [51]. If municipalities make questionaries and ask for feedback, then analysis of citizen

feedback from social media or public forums can be analyzed by AI. In municipality offices, help of AI technologies can be attempted for detection of suspensions or irregularities in financial transactions or procurement processes. This will reduce corruption and ensure accountability [52].

However, despite all the services and advantages that can be obtained from considering AI technologies in municipality services, AI systems may unintentionally disseminate biases present in their training data, leading to unfair outcomes [53]. Concerns are also raised about data protection and potential misuse of citizens while collecting and processing their data [54]. Also, people engagement may not be equal to access AI based systems resulting unfair differences [55]. For example, AI systems used in predictive policing have been criticized for disseminating racial biases, as seen in the case of the PredPol system in Los Angeles, where crime predictions unreasonably targeted minority neighborhoods [56]. Another reported case is the implementation of AI in London's traffic monitoring system, that has raised debates about the balance between public safety and individual privacy [57]. Policymakers need to make sure of equitable deployment to municipal services integrating AI, as underserved communities may lack access to such technologies.

8. CONCLUSION

By 2030, the Sustainable Development Goals (SDGs) of the UN symbolize a global commitment to a more prosperous, sustainable, and equal world. Despite this vision, a number of obstacles and challenges, such as pandemics, geopolitical tensions, a lack of money, and the effects of climate change, have made it difficult to go forward with achieving these goals. As essential components of human welfare, municipal services are crucial in tackling many of these issues and directly promoting a number of SDGs. An effective tool, artificial intelligence (AI) has the potential to improve municipal services and accelerate the achievement of the Sustainable Development Goals (SDGs) of the UN. This article demonstrates the enormous potential of AI technologies like machine learning, natural language processing, and predictive analytics to increase productivity, lower expenses, and promote creativity. The integration of AI to municipal operations offers practical solutions to the multiple and interrelated challenges preventing the advancement of the SDGs, including the need for effective governance, resource limitations, and the effects of climate change. However, resolving ethical issues, reducing biases, protecting data privacy, and fostering fair access to AI-driven services are all necessary for the effective deployment of AI technologies. Because they have a direct influence on citizens' daily lives, municipalities are leading in the worldwide effort to fulfill the SDGs. Municipal governments may improve quality of life and promote sustainable urban settings by emphasizing the use of AI in their services and coordinating these efforts with the SDGs. In order to optimize the advantages of artificial intelligence, governments, stakeholders, and local leaders must work together and embrace innovative, ethical, and dynamic approaches. AI has the potential to be a crucial instrument in closing the gap between present advancements and the ambitious 2030 Agenda with sustained investment, global collaboration, and adaptive governance. This study highlights how urgent it is to use AI's potential in municipal services, providing a means of achieving more resilient, inclusive, and sustainable urban governance. Municipalities can turn global goals into tangible outcomes.

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No conflicts of interest have been identified by the authors, according to their disclosure statement.

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