The Application and Moral Considerations of Artificial Intelligence Technology in Social Decision Making and Public Management

Haoming Zhang

Nanchang Institute of Technology, Nanchang, China

1543417220@qq.com

Abstract. This article explores the application of artificial intelligence technology in social decision-making and public management, and analyzes the ethical issues and considerations involved. The application of artificial intelligence technology in social decision-making includes data analysis and prediction, as well as intelligent decision support systems. In public management, artificial intelligence applications involve automated processes and robot assistants, as well as data-driven policy formulation. However, artificial intelligence applications have also raised a series of ethical challenges, including privacy and data security issues, as well as issues of inequality and discrimination. To address these challenges, relevant ethical frameworks and guidelines have been proposed, including guidance on ethical principles and values, as well as support from regulatory and legal provisions. Only within a reasonable ethical framework can artificial intelligence technology better provide value for social decision-making and public management, and promote social justice and sustainable development.

Keywords: artificial intelligence; Social decision-making; public administration

1 Introduction

In today's digital age, artificial intelligence technology is rapidly developing and widely applied in various fields, including social decision-making and public management. Artificial intelligence technology, with its characteristics of efficiency, precision, and automation, provides powerful tools and support for decision-makers and managers, helping them cope with complex problems and challenges. However, with the continuous expansion of the application of artificial intelligence technology, a series of ethical issues and considerations have arisen.

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2 The application of artificial intelligence technology in social decision-making and public management

2.1 Application of artificial intelligence in social decision-making

(1)Data analysis and prediction

Through artificial intelligence algorithms and technical tools, decision-makers can conduct in-depth analysis and mining of large-scale social data to reveal hidden patterns, trends, and correlation relationships, as shown in Table 1. These data can include demographic information, economic indicators, environmental data, social media data, and other aspects. Through the analysis and prediction of these data, policymakers can gain in-depth understanding of Social phenomenon, trends and problems, and provide scientific basis for formulating reasonable and effective policies [1].

Table 1. Social Data Analysis of Artificial Intelligence

data type	application area	Analysis purpose	Results and insights
demographics	city planning	Predict population growth trends and plan infrastructure construction	Predicting future population distribution and optimizing urban development planning
Economic indicators	Economic decision-making	Analyze economic growth mode and Prediction market trend	Identify potential growth areas and formulate policy measures to promote economic development
Environmental data	environmental protection	Analyze environmental pollution status and predict environmental change trends	Identify key areas of environmental protection, develop resource management and emission reduction measures
Social media data	marketing management	Analyze user interests and behavior patterns, and accurately push advertisements	Identify target user groups and improve marketing accuracy
Education data	Education Policy and Planning	Analyze students' learning situation and evaluate the quality of education	Optimize the allocation of educational resources, improve educational policies and curriculum settings
health data	public health	Monitor the spread of diseases and predict the development of the epidemic	Develop epidemic prevention and control measures, strengthen public health management

(2)Intelligent Decision Support System

The application range of intelligent decision support systems in social decision-making and public management is extensive, as shown in Table 2. In government decision-making, this system can help government officials evaluate the impact of policies, predict social benefits, and provide decision-making recommendations. For example, in Transportation planning, the intelligent decision support system can provide decision-making suggestions for the government to formulate Transportation planning and urban development plans by analyzing traffic flow, population distribution and other data. In crisis management and emergency response, intelligent decision support systems can provide decision-makers with the best solution for crisis management and resource allocation based on real-time data and model predictions [2].

Table 2. Application of Intelligent Decision Support System in Social Decision and Public Management

application area	Analyze data	Decision Support Purpose	Decision suggestions provided
Transportation Planning	Traffic flow, population distribution, etc.	Formulate Transportation planning and urban development plan	Provide traffic optimization solutions to improve traffic mobility and reduce traffic congestion
Crisis Management and Emergency Response	Real time data, model prediction	Handle crisis events and allocate resources	Provide crisis management plans, optimize resource allocation and rescue operations
Public health management	Disease transmission data and medical resources	Predict the development trend of the epidemic and optimize the allocation of medical resources	Provide epidemic prevention and control plans, support medical resource allocation and risk assessment
Education Policy and Planning	Student learning situation and educational quality indicators	Improve educational policies and optimize the allocation of educational resources	Provide educational reform suggestions, optimize educational curriculum and support for student development
environmental protection	Environmental monitoring data and pollution source analysis	Assess environmental impacts and develop environmental protection policies	Provide environmental governance plans to reduce pollution sources and improve environmental quality
economic development	Economic indicators, Market trend	Promote economic development and optimize resource allocation	Provide economic growth strategies, guide investment and industrial upgrading

2.2 Automated processes and robot assistants

Public management involves a large number of processes and tasks, including document processing, data collection, approval processes, etc. Artificial intelligence can improve the efficiency and accuracy of public management through automated processes and robot assistants [3].

Firstly, automated processes refer to the process of using artificial intelligence technology to automate the execution of tedious and repetitive tasks. For example, in the field of public services, artificial intelligence can automate tasks such as processing files, organizing data, and generating reports, reducing the need for manual intervention and improving processing efficiency. Through automated processes, public management institutions can better utilize human resources, freeing personnel from heavy mechanical work and focusing on higher-level decision-making and strategic planning. Secondly, a robot assistant is a virtual assistant or robot based on artificial intelligence that can simulate human communication and decision-making abilities, providing support and assistance for public management. Robot assistants can communicate with users, answer questions, provide information, etc. through Natural language processing and machine learning algorithms [4].

3 Ethical considerations of artificial intelligence technology in social decision-making and public management

3.1 Privacy and Data Security

Firstly, privacy protection is the primary ethical challenge in artificial intelligence applications. Large scale data collection and analysis may involve sensitive personal information, such as personal identity, health status, social activities, etc. The government and relevant institutions must adhere to strict privacy protection principles when collecting and using this data, such as data minimization principles, purpose restriction principles, and legal compliance principles [5].

Secondly, data security is also a key ethical challenge. Artificial intelligence systems face security risks in the process of data transmission, storage, and processing. Threats such as hacker attacks, Data breach and system vulnerabilities may lead to the violation of personal privacy or be used for improper purposes. The government and relevant institutions need to establish strong security protection mechanisms, including data encryption, access control, vulnerability repair, etc., to ensure the security and integrity of data [6].

3.2 Ethical principles and values

Firstly, ethical principles play an important guiding role in the application of artificial intelligence. Common ethical principles include fairness, rights protection, privacy protection, transparency, and accountability. The principle of fairness requires artifi-

cial intelligence systems to make decisions without discrimination, favoritism, and treat all groups equally [7]. The principle of rights protection emphasizes the protection of personal and social interests in the decision-making process, avoiding harm to individuals or specific groups. The principle of privacy protection requires the reasonable collection and use of personal data, and ensures the security and confidentiality of the data. The principle of transparency emphasizes the interpretability and comprehensibility of the system's decision-making process, enabling people to understand the decision-making logic and basis of the system [8]. The principle of responsibility requires developers and users to be responsible for the decision-making of artificial intelligence systems and bear corresponding moral and legal responsibilities [9].

Secondly, values play an important role in formulating ethical frameworks. Different cultures and societies have different values that have an impact on the development and application of artificial intelligence systems. For example, values such as human rights, fairness, freedom, human dignity, and social justice all play important roles in decision-making and management. Integrating these values into the design and application process of artificial intelligence systems can ensure that system decisions are consistent with social value goals, thereby promoting social justice and development [10].

4 Conclusion

In summary, artificial intelligence technology has the potential to be widely applied in social decision-making and public management, but at the same time, moral issues need to be carefully considered. Only within a reasonable ethical framework and guidelines, supported by regulatory and legal provisions, can artificial intelligence technology better provide value for social decision-making and public management, promote social progress and sustainable development. Therefore, it is necessary to continuously strengthen moral awareness and the construction of laws and regulations while developing technology, to ensure that the application of artificial intelligence meets ethical requirements and truly benefits human society.

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