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USE OF BIG DATA AND ARTIFICIAL INTELLIGENCE IN SOCIAL POLICY: THE EXPERIENCE OF DEVELOPED COUNTRIES

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Abstract. *The increasing complexity of social challenges in the 21st century demands more dynamic and intelligent policy responses. As societies face growing inequality, demographic change, and demands for transparency, traditional mechanisms of social governance often prove inadequate. In this context, the integration of big data and artificial intelligence into social policy represents a promising frontier. The aim of this study is to explore how the application of advanced data-driven technologies can enhance the effectiveness, responsiveness, and inclusivity of social programs, while also identifying the institutional, technical, and ethical preconditions required for their successful implementation. The relevance of this topic is particularly high for countries undergoing digital transformation, where strategic innovations must be aligned with democratic governance and citizen needs. To investigate these issues, a mixed-methods research design was applied, combining theoretical and empirical components. The study employed a comparative analytical framework to examine global approaches to data-driven social policy. Simultaneously, a large-scale online survey was conducted to assess public attitudes, levels of awareness, and trust in digital innovations in the social sphere. The sample included various social groups, ensuring a representative distribution of experiences and perspectives. Statistical tools were used to process and interpret the responses, while qualitative insights helped reveal deeper patterns of perception and concern among different population segments. The results demonstrate a dual reality: while there is clear demand for more efficient, personalized, and accessible digital services, public confidence in algorithmic decision-making remains fragile. Many respondents support the use of technology in social service delivery, but only under conditions of transparency, fairness, and accountability. Key obstacles include insufficient institutional capacity, limited digital skills, and uncertainty about the ethical implications of automated systems. Nevertheless, the population shows considerable motivation to engage with digital platforms, provided they deliver real benefits in everyday life. These findings underscore the need for a holistic approach that links technological progress with social responsibility. The study offers insights for policymakers seeking to build inclusive, secure, and human-centered digital ecosystems in the social sector.*

Keywords*: social policy; Big Data; Artificial Intelligence; digital transformation; algorithmic ethics; public administration; innovative services.*

JEL Classification: I38, J80, H83, M15, O15
Formulas: 0; fig.: 6; table: 2; bibl.: 7

Introduction. In the context of ongoing digital transformation, the use of big data and artificial intelligence (AI) technologies in the management of the social sector is becoming increasingly relevant. Developed countries have demonstrated successful implementation of innovative solutions aimed at enhancing the effectiveness of social policies, improving the accuracy of needs assessment, and supporting evidence-based decision-making. At the same time, these advancements give rise to new challenges related to ethical considerations, data security, and the risks of algorithmic discrimination. Consequently, there is a growing need for a comprehensive analysis of international practices to identify the potential for their adaptation to the Ukrainian context.

Literature review. Contemporary scholarly and analytical literature on the use of artificial intelligence (AI) and big data in public policy emphasizes an interdisciplinary approach that integrates technical capabilities with ethical, legal, and social challenges. One of the leading frameworks for assessing the impact of digital technologies on human rights and social justice is the concept of social, ethical, and legal impact assessment, as proposed by Mantelero (2018). In his work, Mantelero advocates for an integrated evaluation model for the use of AI and big data, grounded in fundamental rights, algorithmic transparency, and safeguards against discrimination. This approach is especially relevant in the context of social policy concerning vulnerable population groups.

The practical dimension of digital transformation in the social sector is explored in the study by Omar, Weerakkody, and Sivarajah (2017), which analyzes the United Kingdom's implementation of the Universal Credit digital service. The authors highlight both the benefits—such as reduced administrative burden and improved citizen convenience—and the challenges, including digital inequality, technical failures, and lack of trust in automated decisions. Their research reveals the complexities of implementing policies in which digital tools intersect with the vulnerabilities of the population.

Benoit (2024) provides a concise overview of the potential of AI and data science in public administration. He argues that AI can enhance governmental decision-making capabilities, but only under conditions of appropriate competencies, algorithmic transparency, and continuous monitoring of social impacts.

An illustrative example of the real-world implementation of digital solutions in public policy is Estonia, where nearly 100% of government services are provided online (e-Estonia, n.d., 2025). This case demonstrates how a state can build a digital ecosystem based on openness, trust, and data protection, while ensuring service accessibility for all citizens. Estonia's experience is frequently cited as a benchmark of a digital state in the context of developing inclusive and transparent social policy.

The role of big data and AI in public governance is discussed in the mini-review by Supriyanto and Saputra (2022), who argue that these technologies can significantly enhance policy efficiency, risk predictability, and the informedness of decision-makers. At the same time, the authors warn of ethical dilemmas and the need for cross-sectoral collaboration among IT specialists, analysts, and social workers.

Particular attention to the ethical and regulatory challenges of algorithmic use in healthcare is given by the U.S. Department of Health & Human Services (2019). The report underscores that even technically neutral algorithms may yield discriminatory outcomes, especially affecting vulnerable social groups. As a result, it recommends establishing accountability mechanisms at all stages of digital solution development and implementation in healthcare—a recommendation equally relevant to broader social policy.

In the Ukrainian context, an important document is the White Paper on AI Regulation, published by the Ministry of Digital Transformation of Ukraine (Cabinet of Ministers of Ukraine, 2024). This document outlines the core principles of a legal approach to AI deployment, including risk-based governance, personal data protection, human rights compliance, and institutional accountability. It provides a foundation for a normative environment where digital technologies can be integrated into public policy without societal risks.

Supriyanto and Saputra (2022) also examine how big data and AI are employed in Indonesia's policy formation processes. They emphasize that big data—characterized by volume, velocity, and variety—enables deep insights and evidence-based decisions, while AI facilitates data analysis, trend forecasting, and automation. The authors highlight the transformative potential of these technologies in improving the effectiveness of social policy.

Their findings are especially valuable given Indonesia's transitional economic status, similar to Ukraine. This demonstrates that such technologies can be successfully adapted not only in developed countries but also in those undergoing digital transformation. Indonesia's experience offers promising lessons for Ukraine.

Benoit (2024) identifies several key benefits of AI and big data in social policy:

- personalization of services through the analysis of large datasets to address individual citizen needs;
- forecasting social trends using AI to detect patterns and anticipate challenges;
- resource optimization to improve allocation of budgetary and other resources.

Agreeing with Benoit's conclusions, it is evident that AI and big data open a new era in social policy, prioritizing not only the scale but also the quality, targeting, and timeliness of service provision. Personalizing social assistance through data analytics can significantly reduce the "social blindness" of the state, where resources are distributed through generalized mechanisms without considering individual needs.

Of particular value is AI's ability to detect hidden trends—such as emerging risks of unemployment or regional tensions—long before they are evident in official statistics, enabling preventive actions rather than reactive ones. However, it is crucial to maintain ethical safeguards: algorithms are not always neutral, and datasets may be incomplete or biased. Automated models must be supported by human oversight and a clear regulatory framework protecting citizens' rights.

In the United States, big data and AI are actively used to analyze socioeconomic data for forecasting public needs and optimizing social programs. For example, the U.S. Department of Health and Human Services (2019) employs data analytics to identify healthcare trends and enhance service delivery. While recognizing the value

of these technologies, HHS stresses the need for ethical vigilance and regulatory guidance. According to the department, AI-based automation reduced the average processing time for social service requests from 45 to 12 days in some states, including California and Illinois.

The UK experience, particularly through the Universal Credit program, shows how digital technologies can transform social policy. Omar, Weerakkody, and Sivarajah (2017) note that the UK Department for Work and Pensions actively integrates AI to improve the efficiency and accuracy of social programs, especially in detecting fraud. This not only enhances financial discipline but also contributes to a data-driven public governance paradigm.

Estonia is a global leader in digital governance, integrating AI and big data into social service provision. The e-Estonia system allows citizens to access all government services online. Notable achievements include:

- 100% of public services available 24/7 online;
- 85% of birth registrations and 56% of marriage applications submitted electronically;
- 99% of residents possess electronic ID cards, with 70% using them regularly;
- Over 1,400 work-years saved annually due to digitalization;
- 6.6% of the workforce employed in ICT;
- More than 1,600 startups and 10 unicorns;
- Top 6 in OECD's 2023 Digital Government Index;
- 3rd globally in the 2020 UN E-Government Development Index;
- 1st globally in the 2020 UN E-Participation Index (e-Estonia, 2025).

These results highlight Estonia's success in embedding digital tools into governance, enhancing transparency, accessibility, and effectiveness.

The integration of big data and AI into social policy in developed countries demonstrates considerable potential for improving program efficiency and targeting. However, it also raises ethical and legal issues, especially regarding algorithmic transparency and personal data protection. Mantelero (2018) outlines the key challenges:

- Data privacy and protection in processing vast datasets;
- Algorithmic bias, risking discrimination due to flawed or incomplete data;
- Transparency and accountability, ensuring decision-making processes remain understandable.

Thus, the digital transformation of social governance is not merely technological but foundational—it reshapes the principles of state-citizen interaction, shifting toward more proactive, adaptive, and needs-driven governance. International experiences confirm that such tools enable optimized service delivery, efficient budgeting, and responsive policymaking in dynamic social environments.

Yet, as Mantelero (2018) rightly notes, technological progress in social policy is inseparable from ethical and legal dilemmas. Algorithmic bias and privacy risks threaten to exacerbate social inequalities, especially for vulnerable populations. The lack of algorithmic transparency may erode public trust in institutions.

Consequently, the effective use of big data and AI in social policy requires both technological and institutional support. In this regard, the Ukrainian Ministry of Digital Transformation is actively promoting AI and big data in social governance. In June 2024, the Ministry released its *White Paper on AI Regulation in Ukraine* (Cabinet of Ministers of Ukraine, 2024), which outlines preparatory steps for future legislation and promotes responsible AI use, including media guidelines emphasizing transparency and the human factor.

These initiatives signal Ukraine's commitment to integrating advanced digital tools into social policy, drawing on global experiences while adapting them to national realities. The reviewed literature and practices collectively suggest that the successful implementation of AI and big data in social policy depends not only on technical capacity but also on achieving an ethical balance, regulatory clarity, and sensitivity to social context.

Aims. The aim of this study is to analyze the experience of using big data and artificial intelligence in the social policies of developed countries, with the goal of identifying effective practices, key challenges, and potential opportunities for their application in enhancing the effectiveness of social governance in Ukraine.

Methodology. This study employed a comprehensive set of scientific methods to ensure an interdisciplinary approach to the analysis, integrating both quantitative and qualitative aspects.

At the theoretical level, a comparative analysis method was used to examine the practices of using big data and AI in the social policy of developed countries, including the United States, the United Kingdom, Estonia, and Indonesia. This approach allowed for the identification of universal patterns and specific features that may be applicable in the Ukrainian context. In addition, content analysis was applied to scientific, legal, and analytical literature, as well as official sources from national and international organizations. This helped to outline key trends, risks, and opportunities associated with the digital transformation of the social sector.

At the empirical level, the primary research tool was a structured online survey, which captured citizens' perceptions, levels of awareness, motivational factors, and trust in digital social services. Descriptive statistics were used to summarize the survey results in the form of tables, charts, and graphs. To interpret the data, structural-functional analysis was employed to determine the role of the state in the digital transformation of the social sector, along with sociological interpretation techniques to identify key barriers, needs, and expectations among various social groups.

The use of a systems approach ensured the study's comprehensiveness by examining the interconnections among technological, social, ethical, institutional, and regulatory components of AI and big data implementation. Additionally, a forecasting method was applied to outline possible scenarios for the development of digital social policy in Ukraine based on empirical data and international experience.

This combination of quantitative and qualitative methods, analytical tools, and comparative approaches enabled the formation of a deep, multidimensional understanding of the topic and led to the formulation of practical recommendations for improving social governance in the context of digital transformation.

To assess public awareness of international practices in the application of big data and AI in social policy, evaluate the feasibility of adopting similar solutions in Ukraine, and measure levels of trust in innovative digital services, a sociological online survey was conducted.

A total of 1,512 respondents participated in the study. The sample was stratified and quota-based. The target respondent categories included:

- Public sector employees and municipal officials – 187 individuals;
- Students (specializing in humanities, social sciences, public administration, and IT) – 243 individuals;
- IT professionals, data analysts, and social researchers – 301 individuals;
- Citizens who are users of social services – 781 individuals.

Sampling was conducted via social media (Facebook, Telegram), professional communities and digital platforms (e.g., Data UA, GovTech Ukraine, Digital Inclusion), collaboration with higher education institutions (Kyiv National Economic University, Ivan Franko Lviv National University, Kyiv Polytechnic Institute, State University of Telecommunications, Ukrainian Catholic University), and with the support of public authorities involved in digital transformation.

As a result, 1,512 fully completed questionnaires were collected. The representative sample included 1,512 respondents from four key target groups: citizens using social services (51.7%), students (16.1%), government employees (12.4%), and professionals in Big Data and IT (19.9%). The gender distribution was relatively balanced, with 55.9% female and 44.1% male participants. In terms of age, the largest groups were individuals aged 25–34 (31.2%) and 35–44 (28.7%). Geographically, respondents represented both urban and rural areas, with the majority residing in cities of over 100,000 inhabitants.

Question 1: "Are you aware of any examples of the use of artificial intelligence or big data in social policy in other countries?" This question was addressed to all respondent categories without exception. A total of 1,498 responses were received. The distribution of responses is presented in Figure 1.

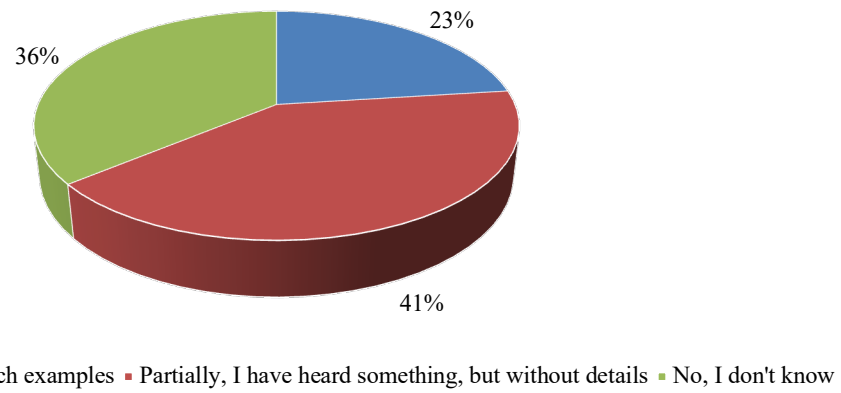

Figure 1. Respondents' awareness of the use of Big Data and AI in social policy in other countries

Source: compiled by the authors based on the results of a survey

As illustrated in Figure 1, only one in four respondents reported being genuinely familiar with international examples of AI implementation in social policy. The majority (77%) were either poorly informed or entirely unfamiliar with the topic. This indicates a significant need for public awareness campaigns and the promotion of successful case studies—such as the Estonian experience—as part of efforts to increase digital literacy and policy innovation readiness.

Question 2: "In your opinion, how realistic is the implementation of such solutions in Ukraine within the next five years?" A total of 1,505 responses were collected. The distribution of responses is shown in Figure 2.

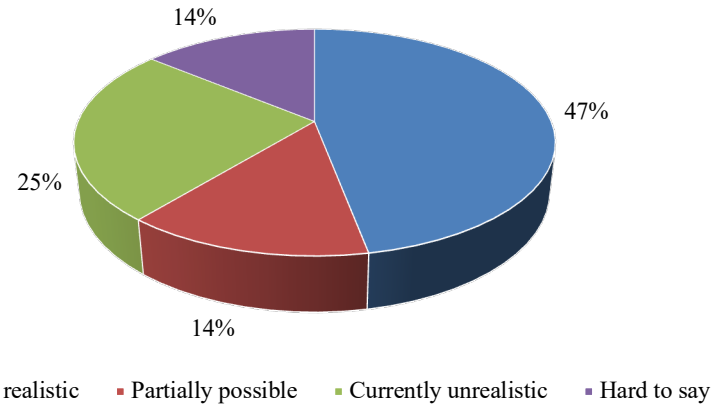

Figure 2. Perceived prospects for the implementation of AI/Big Data in Ukraine's social policy

Source: compiled by the authors based on the results of a survey

According to Figure 2, only 14% of respondents expressed optimism regarding the rapid implementation of digital solutions in Ukraine's social policy. Nearly half of the respondents indicated cautious optimism, suggesting conditional support depending on improvements in systemic conditions. At the same time, approximately one-quarter of participants believed that such implementation is currently unrealistic. The most frequently cited barriers included the lack of necessary resources such as funding, qualified personnel, infrastructure, and political will.

Question 3: "Do you trust automated decisions based on big data/AI in the field of social welfare?" This question received 1,483 responses. The distribution of answers is presented in Figure 3.

As illustrated in Figure 3, the level of unconditional trust in automated decisions remains low—only about one in six respondents expressed full trust. The majority (46%) indicated conditional trust, which largely depends on the specific area of application, such as healthcare, welfare benefits, or education. The relatively high level of skepticism among respondents underscores the need for transparent and explainable algorithms within digital public services to ensure accountability and user confidence.

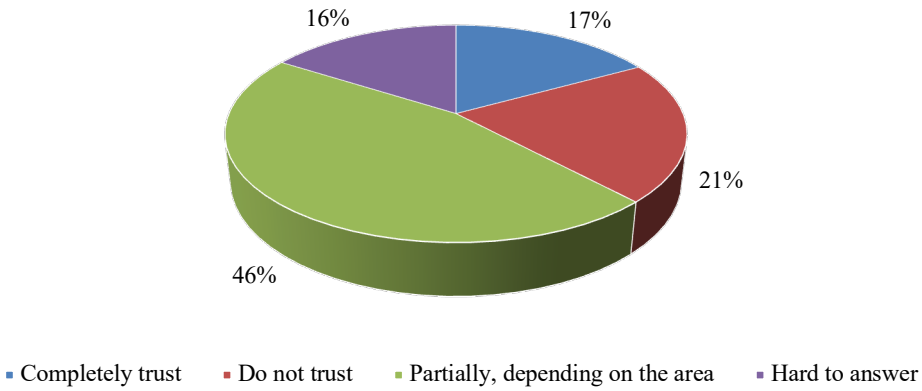

Figure 3. Level of trust in automated decision-making in the social sector
Source: compiled by the authors based on the results of a survey

Question 4: "In your opinion, which factors most hinder the implementation of Big Data and AI in Ukraine's social policy?" Respondents were allowed to select up to three options. In total, 4,443 selections were made by 1,512 participants. According to the results, 68% identified insufficient funding as the main barrier, followed by a lack of qualified personnel (61%), distrust of technology (42%), absence of a legal framework (38%), low digital literacy among citizens (35%), and ethical risks (22%). The distribution of responses is shown in Figure 4.

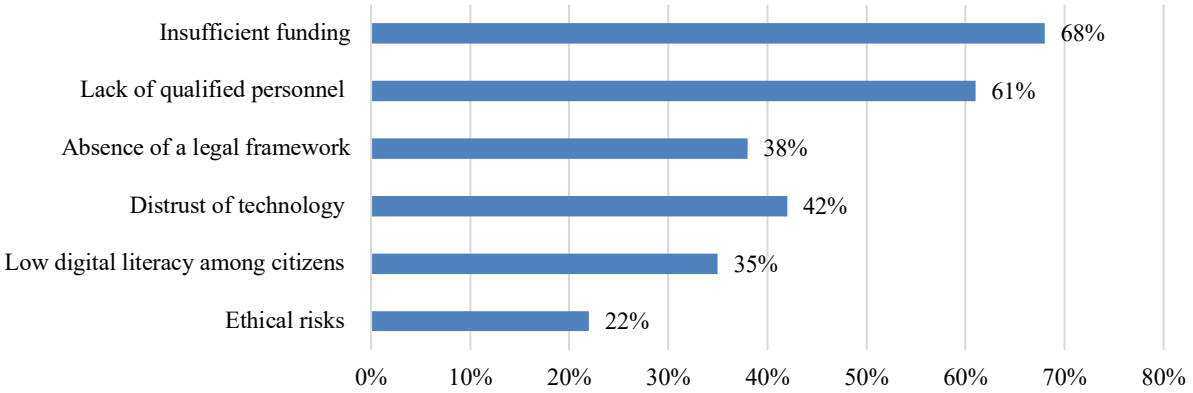

Figure 4. Key barriers to implementing Big Data and AI in Ukraine's social sector
Source: compiled by the authors based on the results of a survey

cording to Figure 4, respondents identified funding and human capital as the most significant barriers. The shortage of qualified personnel was highlighted as a challenge both within public administration and in analytical and technical fields. Additionally, respondents pointed to trust-related barriers—psychological, ethical, and legal in nature. These findings suggest that digital transformation in the social sector must be accompanied by systemic support measures, including staff training, legal modernization, and proactive communication strategies aimed at building public confidence and institutional readiness.

Question 5: "What motivates you to use digital social services?" Respondents were allowed to select up to three motivating factors. A total of 1,501 people answered

this question, resulting in 4,398 selected options. The distribution of responses is presented in Figure 5.

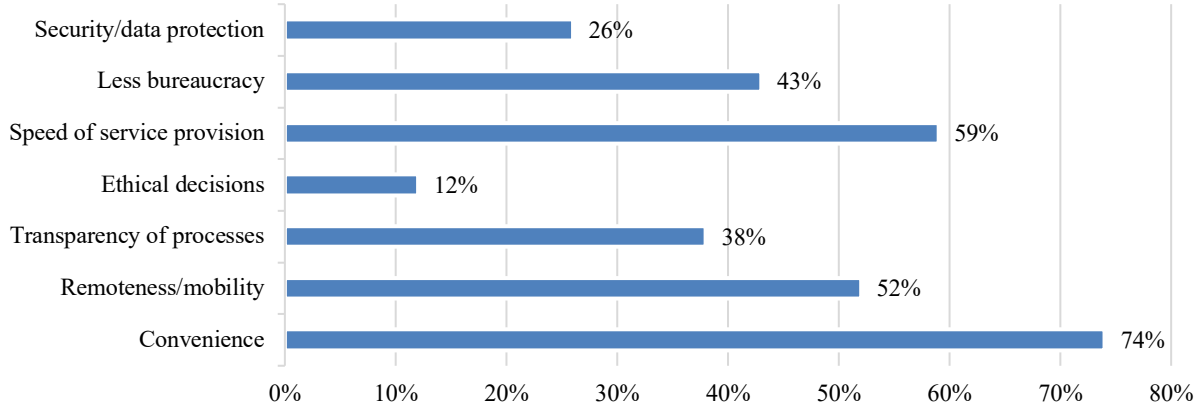

Figure 5. Motivational factors for using digital social services

Source: compiled by the authors based on the results of a survey

As shown in Figure 5, respondents are primarily guided by practical considerations—namely convenience, speed, and accessibility. These utilitarian motivations were especially prevalent among younger users. In contrast, concerns about data security and ethical issues were not prioritized, indicating a predominantly functional approach to digital innovations. However, this trend also highlights the need to foster critical digital literacy and awareness of broader implications related to privacy, accountability, and algorithmic decision-making.

Question 6: "What role should public administration play in the implementation of AI and Big Data technologies in social policy?" Respondents could choose up to two answers, which resulted in a total of 2,935 responses from 1,512 participants. The distribution of responses is displayed in Figure 6.

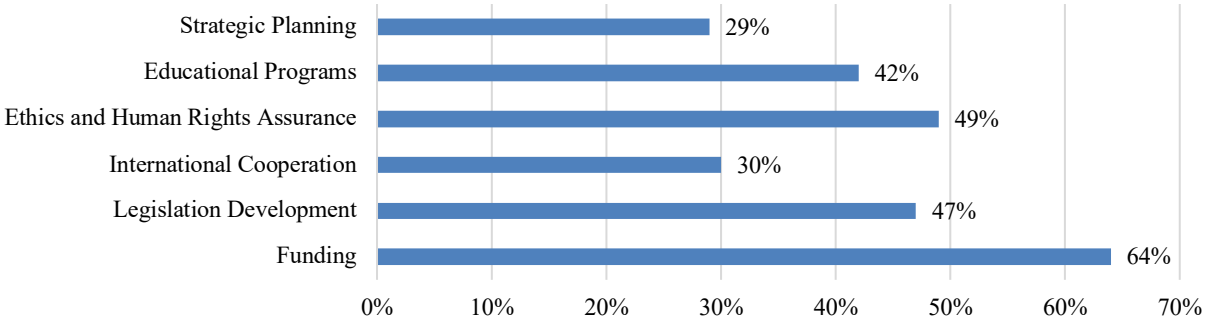

Figure 6. The role of the state in the digital transformation of social policy

Source: compiled by the authors based on the results of a survey

As shown in Figure 6, respondents overwhelmingly identified the state as a key guarantor in the digital transformation of social policy—financially, legally, and ethically. There is an expectation of active, rather than symbolic, state involvement. The prevailing paradigm expressed by respondents is “the state as regulator and

partner." In addition, many emphasized the need for digital education for both civil servants and the general public.

Results. The survey revealed several critical trends and challenges that merit attention from public administrators, academic researchers, and civil society (Table 1).

Table 1. Critical trends and challenges in social policy digitalization

Category	Critical Trends and Challenges
Public Awareness	Only 23% of respondents are familiar with international examples of AI in social policy, indicating a gap between global trends and national discourse.
Trust in AI Systems	Only 17% fully trust AI-based automated decisions; most show conditional trust depending on sector, indicating skepticism rooted in lack of transparency and explainability.
Motivational Factors	Primary motivations include convenience, speed, and remote access; security and ethics are lower priorities, especially among youth, suggesting a utilitarian mindset and need for critical digital literacy.
Implementation Barriers	Top barriers include insufficient funding (68%), shortage of qualified personnel (61%), lack of legal framework (38%), distrust in technologies (42%), and low digital literacy (35%).
State Role Expectations	Respondents expect the state to be an active leader in digital reforms, with emphasis on regulation, infrastructure, digital education, and ethical standards.
Digital Inequality	Older adults and rural residents face higher levels of digital exclusion due to lack of skills, infrastructure, and confidence, pointing to a need for inclusive transformation strategies.

Source: systematized by the author

Despite growing global discourse on digital transformation, the use of big data and AI in social policy remains largely unfamiliar to the majority of Ukrainian citizens. Only one in four respondents demonstrated clear awareness of international practices, such as the automated distribution of social assistance in the United States or the use of data analytics to forecast social risks in the United Kingdom. This limited awareness suggests a disconnect between global digital trends and Ukraine's public discourse, which in turn may hinder public support for innovation-driven reforms.

Moreover, artificial intelligence in the social policy domain is met with cautious attitudes. Only 17% of respondents expressed full trust in automated decision-making, while the majority reported conditional or partial trust depending on the specific area of application. This cautious stance is understandable in a society where historical distrust in public institutions prevails and where the tradition of transparent algorithmic governance is largely absent. The primary challenge is not only technological capacity but also the establishment of robust ethical and regulatory safeguards. The lack of algorithmic explainability, fear of errors, and concerns about potential violations of human rights contribute to public skepticism toward AI adoption in sensitive social domains.

Respondents' motivation to use digital services was found to be predominantly utilitarian. Convenience, speed, and remote access were the main drivers. This pragmatic approach indicates openness to innovation—provided it delivers tangible improvements to users' daily experiences. This was especially evident among younger respondents, who valued functional benefits but were less concerned with data protection or ethical considerations. This observation highlights a dual reality: while there is an opportunity to popularize digital tools, there is also a pressing need to promote critical digital thinking and ethical awareness.

In terms of perceived barriers to implementation, respondents most frequently cited insufficient state funding, a shortage of qualified personnel, the lack of a legislative framework, and general distrust of digital innovation. These factors combine to create a complex landscape in which the potential of AI and big data remains largely unrealized. A comprehensive national strategy for digital transformation in the social sphere is clearly needed—one that is grounded in principles of transparency, ethics, legal clarity, and institutional sustainability.

Respondents also articulated clear expectations regarding the role of the state in guiding digital reforms. These expectations go beyond technical infrastructure and include the need for ethical regulation, legislative development, and the introduction of digital literacy programs for both social sector professionals and service users. Thus, the state must not merely accompany the process of innovation—it must lead it, acting as a guarantor of safety, fairness, and inclusivity.

The issue of digital inequality also emerged as a significant concern. This inequality manifests both geographically—between rural and urban areas—and demographically, especially among older populations. Seniors were less familiar with digital tools, had more limited access to technology, and faced psychological barriers in adopting new services. Therefore, digital transformation must be inclusive, with an emphasis on education, support for vulnerable groups, and the creation of universal access to social services.

Overall, the findings indicate that while public attitudes toward AI and big data in social policy remain cautious, there is strong potential for digital evolution in Ukraine. A substantial portion of respondents already use digital services or are willing to do so, provided that they are convenient and secure. The successful implementation of AI and big data in Ukraine's social sector requires a systemic approach that combines state institutional responsibility, access to knowledge and services for citizens, and inspiration from international best practices—not through mechanical replication, but through thoughtful adaptation.

To ensure the effective implementation of big data and artificial intelligence tools in Ukraine's social policy, a comprehensive set of practical measures is required (Table 2).

First and foremost, it is essential to develop and adopt a national strategy for the digital transformation of the social sector. Such a strategy should incorporate data analytics and AI algorithms into social service delivery, decision-making, and evidence-based policy planning. This strategy must be grounded in the principles of ethics, transparency, and accountability, ensuring public oversight of algorithmic processes and maintaining citizens' trust.

At the same time, it is necessary to intensify public education efforts regarding international experiences, potential benefits, and risks associated with the digitalization of the social domain. Awareness-raising campaigns, public case studies, policy briefs, and interactive formats can significantly increase public understanding—especially in communities where digital services have not yet been introduced. Bridging the information gap is a key prerequisite for fostering citizen engagement and building support for technological reforms.

Table 2. Practical measures for implementing Ai and Big Data in social policy

Key Area	Practical Measures
Strategic Planning	Develop and adopt a national strategy for digital transformation in the social sector, incorporating data analytics and AI in service delivery, decision-making, and policy planning based on ethics, transparency, and accountability.
Public Education and Awareness	Implement awareness-raising campaigns, public case studies, policy briefs, and interactive educational formats to increase understanding of digitalization benefits and risks, particularly in underserved communities.
Human Capital Development	Introduce structured training and reskilling programs for professionals and public managers; promote digital literacy among citizens, especially vulnerable groups such as older adults, people with limited mobility, and rural populations.
Regulatory Framework	Update and clarify legislation to define the scope of AI and big data use, assign accountability in case of errors or bias, and ensure data protection and algorithmic transparency.
Government Leadership and Partnerships	Ensure proactive government leadership in innovation; foster partnerships with the IT sector, universities, think tanks, and international organizations for secure and sustainable digital solutions.
Future-Oriented Policy Design	Create a new model of social policy where AI and big data facilitate early risk detection, adaptive resource allocation, and personalized services, while maintaining a human-centered approach.
Contextual Adaptation and Trust-Building	Analyze national needs, engage stakeholders, and build public trust in technology through transparent, effective, and socially responsible governance practices.

Source: systematized by the author

A critical condition for successful digital transformation is the development of human capital. This includes the implementation of structured training and reskilling programs for professionals working in social protection, healthcare, and education, as well as for public managers at all levels of governance. Equally important is the promotion of digital literacy among citizens, with a particular focus on vulnerable groups - such as older adults, persons with limited mobility, and rural residents. Inclusion, therefore, must be a central value in the digitalization process.

From a regulatory perspective, there is an urgent need to update existing legislation on the use of AI and big data in the public sector. A clear legal framework must be established to define the boundaries of technological application, outline responsibilities in cases of error or discrimination, and ensure the protection of personal data and algorithmic transparency. Normative clarity is essential for reducing risks and strengthening institutional accountability.

The state must play a proactive role in leading innovation, not only as a policy implementer but as a catalyst for infrastructure development and educational reform. Partnerships with the IT sector, academic institutions, think tanks, and international organizations can serve as the foundation for building sustainable, secure, and effective digital solutions in the social sphere.

In the long term, there is a need to develop a new model of social policy in which big data and AI not only automate routine administrative functions but also contribute to the early detection of social risks, the adaptive allocation of resources, and personalized service delivery. This future-oriented model should strike a balance between technological innovation and human-centered values, ensuring that individuals remain at the core of digital governance and that technologies serve as tools for enhancing well-being and protecting rights.

Therefore, the integration of international experience into Ukraine's social policy landscape is only possible through a thorough analysis of the national context, the involvement of key stakeholders, and the cultivation of public trust in digital solutions. This trust can be built through openness, efficiency, and transparency in government actions, enabling a meaningful transformation that is both innovative and socially responsible.

Discussion. The integration of big data and artificial intelligence into social policy presents both a compelling opportunity and a complex challenge for modern public administration systems. As revealed by this study, developed countries have taken significant steps toward embedding data-driven technologies in the design, implementation, and evaluation of social services. These innovations have the potential to improve the precision of needs assessments, enhance the speed and personalization of service delivery, and enable more proactive and preventive models of social governance. However, the Ukrainian context illustrates that the path toward such transformation requires a deliberate, inclusive, and ethically grounded approach.

The empirical findings underscore a paradoxical situation: while there is strong public demand for more accessible, efficient, and user-friendly digital services, awareness of successful international practices remains limited. This gap suggests that innovation alone is not enough—strategic communication and educational outreach are essential to build societal readiness for digital transformation. The results also reveal that the majority of citizens maintain only conditional trust in automated decision-making systems. This skepticism stems from concerns over the transparency and fairness of algorithmic processes, as well as fears of data misuse or biased outcomes. Such attitudes are shaped not only by a lack of digital literacy, but also by historically low trust in public institutions.

Respondents' motivations for using digital services are largely practical—centered around convenience, speed, and ease of access. These utilitarian drivers create fertile ground for broader digital adoption, particularly among younger populations. Yet, the lower prioritization of ethical and security concerns signals the need to embed critical digital thinking into public discourse. Without informed users and robust governance mechanisms, even the most technically advanced solutions risk reinforcing inequalities or generating resistance.

Importantly, the study identifies several systemic barriers that continue to hinder progress. These include insufficient funding, a shortage of trained personnel, and the absence of a cohesive legal framework for AI and big data application in the public sector. These challenges are not unique to Ukraine, but their persistence threatens to stall momentum at a critical juncture of reform. Addressing them will require sustained political will, cross-sectoral collaboration, and targeted investments in both infrastructure and human capital.

The role of the state emerges as a central theme across the responses. Citizens expect the government not merely to permit innovation, but to actively lead and regulate it. This includes ensuring legal accountability, upholding ethical standards, and promoting inclusive digital education. Such expectations reflect a growing

recognition that digital transformation is not only a technical or managerial task, but a governance issue with deep social implications.

Another dimension that cannot be overlooked is digital inequality. The study highlights that older individuals and rural populations face significantly more barriers in accessing and benefiting from digital services. As such, any digital strategy must incorporate inclusive policies that address disparities in access, skills, and confidence. Without such considerations, digital reforms risk exacerbating the very social divides they aim to bridge.

In light of these findings, the discussion points to a broader conclusion: the successful use of AI and big data in social policy cannot rely on technology alone. It must be grounded in trust, transparency, and citizen-centered design. Ukraine's path forward should not involve copying foreign models wholesale, but thoughtfully adapting global best practices to its own institutional context, societal values, and developmental stage. With the right balance of innovation and responsibility, digital tools can serve not only to modernize social services, but to strengthen the social contract between the state and its citizens.

Conclusions. This study highlights the considerable potential of big data and artificial intelligence (AI) to transform social policy by enhancing its efficiency, targeting, and responsiveness. Through a comprehensive literature review and empirical research involving 1,512 respondents, the findings confirm that while international examples of AI implementation in the social sector offer valuable lessons, public awareness in Ukraine remains limited. Only 23% of respondents reported familiarity with such practices, signaling the need for broader dissemination of global case studies and their relevance to national reform.

The results also reveal a cautious public attitude toward AI-driven decision-making in social welfare. Only 17% of participants expressed full trust in such technologies, while a majority showed conditional acceptance based on the context of application. This skepticism is rooted in concerns about transparency, data security, and the risk of algorithmic discrimination. Addressing these concerns will require strong legal frameworks, ethical oversight, and mechanisms for algorithmic accountability.

Despite the identified barriers—such as insufficient funding, lack of qualified personnel, low digital literacy, and legislative gaps—respondents showed high motivation to use digital social services, especially when they are convenient, fast, and accessible. These findings suggest that the Ukrainian population is open to innovation, provided that the benefits are clear and services are user-centered.

A key expectation expressed by respondents is that the state should play an active leadership role in the digital transformation of the social sector. This includes not only infrastructure development and regulation but also capacity building, public education, and inclusive outreach efforts. There is also an urgent need to address digital inequality, particularly among older populations and rural residents, by promoting universal digital access and tailored support programs.

Ultimately, the successful integration of AI and big data into Ukraine's social policy depends on a systemic and coordinated approach that combines technological

advancement with institutional reform. This includes developing a national digital strategy for the social sector, updating legislation, enhancing digital competencies across stakeholder groups, and fostering public trust through transparent, ethical, and inclusive implementation. When guided by these principles, AI and big data can become powerful tools for building a more effective, fair, and responsive system of social governance.

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