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PROCESS AUTOMATION IN PUBLIC ADMINISTRATION IN UKRAINE AND ENSURING LEGALITY OF AI-DRIVEN DECISION-MAKING

The article addresses the issue of ensuring legality in public administration when using AI systems. On the one hand, they showcase remarkable effectiveness in performing various tasks, and on the other hand, they also pose new risks. As automated decision-making processes become more prevalent in Ukraine, the urgency of discussing this issue increases. The author explains that automated decision-making is part of a broader category of automated processes, where decisions are made by an automated system or mean, rather than by a human selecting from available options. The forms of automated decision-making vary depending on the level of autonomy involved. The purpose of the article is to identify and describe the main challenges associated with ensuring legality in the AI-driven automated decision-making practices of public authorities in Ukraine. To achieve this purpose, the author utilizes several methods. Abstraction is used to determine the most essential features of the concept of automated decision-making. Generalization distinguishes the problems which are related to identified challenges. Finally, case method illustrates the examples of the implementation of AI systems in public administration. These examples form an important part of the article and involve address placement algorithm for educational sector from the Ministry of Education and Science of Ukraine, verification of compliance with employment quotas for persons with disabilities by the Fund for Social Protection of Persons with Disabilities, and the issuance of veterinary licenses based on the preliminary analysis of applications by an AI system (the State Service of Ukraine on Food Safety and Consumer Protection). The results of the study indicate that key challenges to maintaining legality include ensuring that public authorities possess the appropriate powers, the rationality of the AI system, compliance with personal data protection rights, the ability to contest decisions, and the oversight of civil servants over automated processes.

Keywords: *automated decision-making; AI-driven decision-making; process automation in public administration; respect for human rights; rationality of a decision; AI systems; personal data protection; human oversight.*

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Автоматизація процесів державного управління в Україні та забезпечення законності прийняття рішень з використанням систем штучного інтелекту.

Стаття присвячена проблемі забезпечення законності у державному управлінні при використанні систем штучного інтелекту. З одного боку вони демонструють унікальну результативність при виконанні різних задач, а з іншого – породжують нову небезпеку. Зі все більш розповсюдженою автоматизацією процесів прийняття рішень в Україні, актуальність порушеної проблеми зростає. Автор пояснює, що автоматизоване прийняття рішень, належачи до загальної групи автоматизованих процесів, позначає ситуацію, коли в результаті застосування автоматизованої системи (або засобу) відбувається прийняття рішень. Будучи свого роду альтернативою до вибору людиною одного з можливих варіантів, автоматизоване прийняття рішень має різні форми, залежно від того, наскільки високим є рівень автономності система штучного інтелекту. Мета статті – виявити та охарактеризувати основні виклики, пов'язані з забезпеченням законності при автоматизованому прийнятті рішень органами державної влади в Україні. Для досягнення мети автор використовує такі методи, як абстрагування, виділяючи найважливіші ознаки поняття автоматизованого прийняття рішень, узагальнення, показуючи проблеми, пов'язані з виявленими викликами, та метод кейсів – коли наводить приклади застосувань штучного інтелекту в діяльності органів державної влади України. Наведені приклади є важливою частиною статті та свідчать про активне впровадження систем штучного інтелекту для прийняття рішень у сфері державного управління, включаючи адресне розміщення у цілях розподілу абітурієнтів від Міністерства освіти і науки України, перевірку виконання нормативу робочих місць для осіб з інвалідністю Фондом соціального захисту осіб з інвалідністю, а також оформлення ветеринарної ліцензії за підсумками попереднього аналізу заявки системою штучного інтелекту (Державна служба України з питань безпечності

харчових продуктів та захисту споживачів). Результати проведеного дослідження показують, що серед викликів забезпеченню законності – наявність відповідних повноважень в органів державної влади, здатність системи штучного інтелекту бути раціональною, дотримання прав щодо захисту персональних даних та гарантування можливості оспорювати прийняті рішення, а також – збереження контролю державних службовців над автоматизованими процесами.

Ключові слова: *автоматизоване прийняття рішень; прийняття рішень з використанням систем штучного інтелекту; автоматизація процесів державного управління; дотримання прав людини; раціональність рішення; системи штучного інтелекту; захист персональних даних; людський нагляд.*

Problem statement. With the widespread availability and extensive functionality of AI systems, which facilitate automate public administration processes and enable public authorities to exercise their powers more effectively, the challenges and risks of ensuring legality in public administration are becoming increasingly relevant. AI-driven decision-making, despite its remarkable effectiveness in performing various tasks, also carries risks. Its unrestricted use, accompanied by a lack of user awareness that borders on irresponsibility, can lead to negative consequences, including human rights violations. This article addresses the issue of ensuring legality in public administration when utilizing AI systems, a concern that is growing in Ukraine as decision-making processes become more automated.

Analysis of recent studies and publications. In recent years, Ukrainian authors have provided a comprehensive analysis of the application of artificial intelligence in public administration. This topic has been researched by I. Ardelian, O. Bardakh, A. Bohonis, V. Furashev, Yu. Karpenko, I. Korzh, S. Kukhar, S. Kvitka, Yu. Lukianchuk, I. Niniuk, M. Niniuk, N. Novichenko, L. Trebyk, N. Vavdiuk, T. Yarovoi, K. Yesennikov, A. Zemko, and others. It is often raised in the context of such phenomena as the digitalization of public administration, as well as its modernization and transformation.

The issue of ensuring legality has largely been overlooked, with only a few articles addressing it (e.g., [1, 2, 3, 4]). However, the legal frameworks governing the use of artificial intelligence, in general and without specifying the domain of public administration, is a highly popular area of research within Ukrainian legal scholarship.

The phenomenon of automated decision-making-often referred to as «algorithmic decision-making»-in the practices of public authorities has primarily been explored by O. Buhai, particularly in her PhD thesis on the use of AI tools for managerial decision-making related to territorial restoration and development [5]. Other contributors to this scope of research include N. Haletska, E. Laniuk, O. Ostapenko, L. Tereniak, V. Tokareva, O. Voronov, and V. Yatsenko.

Despite these contributions, Ukrainian legal scholarship has yet to explore the relationship between ensuring legality in public administration and the use of AI-driven decision-making.

The purpose of the article is to identify and describe the main challenges associated with ensuring legality in the AI-driven automated decision-making practices of public authorities in Ukraine. An important part of this article demonstrates examples of the implementation of AI systems in public administration.

Main results. Decision-making through AI systems is a specific form of automated decision-making. Generally, automated decision-making refers to situations where automated systems or means are utilized-the term of automated mean is mentioned in the Law of Ukraine «On the Protection of Personal Data» [6]. The use of algorithms is central to this process, which results in decisions being made.

AI-driven decision-making process can be in a range from partially automated to fully. In a partially automated process, a civil servant makes the final decision while artificial intelligence serves as a support tool. Conversely, in a fully automated process, decisions are made entirely by an AI system. Automated decision-making encompasses a diverse range of processes with different levels of automation: assisted, verified, delegated, and autonomous decision-making [7]. It is important to note that not all decisions require analysis regarding their legality; only those that have legal consequences for the individuals affected should be considered, as outlined in the EU General Data Protection Regulation.

We aim to clarify the understanding of automated decision-making in accordance with the documents adopted within the systems of Council of Europe and the EU, along with other interpretations (table 1).

Table 1

Source of origin	Definitions
Committee of Ministers (Council of Europe)	a system that uses automated reasoning to aid or replace a decision-making process that would otherwise be performed by humans [8].
Article 29 Data Protection Working Party (EU)	the ability to make decisions by technological means without human involvement, based on any type of data [9, p. 8].
European Law Institute (NPO)	a (computational) process, including AI techniques and approaches, that, fed by inputs and data received or collected from the environment, can generate, given a set of predefined objectives, outputs in a wide variety of forms (content, ratings, recommendations, decisions, predictions, etc) [10, p. 8].
Legal scholarship	a process or a system where the human decision is supported by or handed over to an algorithm (ADM (commonly used abbreviation. – A.H.) is increasingly used in several sectors of our society and by different actors (both private and public) [11]; the process of digital (electronic) analysis of information inputs and making certain conclusions or decisions based on previously set parameters in a specific computer program (software) [12].

Therefore, automated decision-making is part of a broader category of automated processes, where decisions are made by an automated system or mean, rather than by a human selecting from available options.

Having searched through Google, we conducted an analysis of news reports regarding the use of AI-driven decision-making by public authorities in Ukraine (table 2). Our research revealed several intriguing examples, summarized in a table. In addition to outlining the sectors where AI is applied and the associated purposes, we also examined the legal and regulatory framework that supports such usage (in the reference list we provide laws, decrees and orders that may validate it in the future, although we recognize that they lack supporting provisions at the present).

Notably, one of the examples is set to be fully implemented in the future and focuses on leveraging AI to overcome the devastating consequences of war. In October 2024, information was reported regarding the intentions to develop such a system [13]. In May 2025, it was announced that a new platform was being created [14].

Table 2

Examples	Sector	Purpose
Automatic fines for noncompliance with employment standards for individuals with disabilities	Social welfare (Ministry of Social Policy, Family and Unity of Ukraine, Fund for Social Protection of Persons with Disabilities)	Verification of compliance with the standard regarding the employment of persons with disabilities [15]
Address placement algorithm	Education (Ministry of Education and Science of Ukraine)	Providing applicants with recommendations for enrollment in educational programs [16]
Automatic registration of property rights	Construction and real estate (Ministry of Communities and Territories Development, Ministry of Justice, Ministry of Digital Transformation)	Ensuring registration of ownership rights to real estate after construction completion, without the involvement of the State Registrar [17; 18]
Applications for veterinarian license verification by an AI system	Veterinary medicine; economic activity (Ministry of Economy, Environment and Agriculture, Ministry of Digital Transformation; State Service of Ukraine on Food Safety and Consumer Protection)	Verification of the documents submitted for obtaining a veterinary license [19]
Prioritization system in humanitarian demining	Security (Ministry of Economy, Environment and Agriculture)	Prioritizing demining areas based on a number of coefficients

The use of AI-driven decision-making in public administration in Ukraine encounters several challenges. These challenges arise from both the unique characteristics of artificial intelligence, which set AI-based programs apart from others, and the specific features of public administration.

One of the main challenges facing public authorities is the need for appropriate powers and permissions, as defined by applicable law, to carry out specific activities aimed at achieving socially beneficial goals. First, the technical task assigned to an AI system, which involves making a particular decision, must fall within the authority of that public authority. In other words, if an AI system is tasked with assessing compliance with certain standards, a public authority utilizing it must possess the competence to make such assessments.

Second, there is an unwritten rule that allows public servants to use any programs in their work, typically favoring the one that is publicly available and have broad functionality. However, recent trends have shown that higher-level directives are increasingly restricting this unwritten right. Certain programs are now strongly discouraged, along with ambiguous methods of use, particularly those that involve entering personal data. For instance, in Canada, public authorities are required to assess potential risks before implementing a specific AI system. Similarly, in many European countries, the use of the Chinese service Deepseek is advised against in public administration.

Some potential challenges of using AI-based decision-making relate to the principle of respect for human rights, including compliance with personal data protection rights and ensuring the opportunity to contest decisions. Many decisions made by public authorities affect personal data in one way or another and fall under the categories of personal data processing or automated processing when conducted by AI systems. According to established standards in personal data protection, individuals are entitled to enhanced protection against automated processing. For example, the Law of Ukraine «On the Protection of Personal Data» defines protection against automated decisions that have legal consequences for the data subjects as one of their rights [6].

Additionally, it is equally important to ensure that individuals have legal options to contest any decision made, as this aligns with the core principles of a democratic society, including AI-driven decision-making. At the same time, mechanisms for addressing such challenges are currently lacking, and unfortunately, in many cases, the mere use of using artificial intelligence remains undisclosed.

To what extent are artificial intelligence systems capable of making intelligent decisions that determine the optimal option among all available choices? This question is tied to ongoing research into the ability of artificial intelligence to mimic human cognitive abilities, a scope of research that continues to evolve each year. At the same time, the rationality of an AI system depends on several factors considered during its development, as well as the skills of civil servants who use it. The current level of technology demonstrates that high-quality training datasets, including data related to past human decisions, significantly enhance to the ability of AI systems to make decisions by imitating human behavior.

We identified another challenge in our research—maintaining civil servants' control over automated processes. The level of autonomy of such system earlier mentioned reflects the extent to which, or how much humans can intervene in the decision-making process. If an AI system serves as a support tool—where the decision is ultimately made by a civil servant who can use chosen by AI option as a reference—then the issue of accountability is not as critical. However, if the system makes fully automated decisions, the concern becomes more significant. In our view, fully automated decisions should not be a common practice in public administration, especially when they could impact individuals' interests.

Conclusions. The automation of public administration, facilitated by the integration of AI systems into the activities of public authorities, results in an increase in the number of decisions made by automated systems or means. These decisions can range from providing assistance to achieving complete autonomy. We have demonstrated the examples of such applications in Ukrainian practices and have outlined the potential challenges associated with them. These challenges arise from both the unique characteristics of artificial intelligence and the specific features of public administration.

The results of the study indicate that key challenges to maintaining legality include ensuring that public authorities possess the appropriate powers, the rationality of the AI system, compliance with personal data protection rights, the ability to contest decisions, and the oversight of civil servants over automated processes concerning the issue of accountability.

References

1. Zemko, A. M., Vavdiiuk, N. S., Lukianchuk, Yu. A. (2025). Shtuchnyi intelekt u publichnomu sektori: etychni pryntsypy, standarty bezpeky ta vidpovidalnist derzhavnykh sluzhbovtsiv [Artificial Intelligence in the Public Sector: Ethical Principles, Security Standards and Responsibility of Public Servants]. *Aktualni problemy staloho rozvytku – Actual problems of sustainable development, 2*(3), 151-156 [In Ukrainian].
2. Karpenko, Yu. V. (2019). Etychni pryntsypy zastosuvannia shtuchnoho intelektu v publichnomu upravlinni [Ethical Principles of Artificial Intellectual Application in Public Administration]. *Visnyk Natsionalnoi akademii derzhavnoho upravlinnia pry Prezydentovi Ukrainy. Seriia : Derzhavne upravlinnia - Bulletin of the National Academy of Public Administration under the President of Ukraine. Series : Public Administration, 4* , 93-97 [In Ukrainian].

3. Nyniuk, I. I. (2024). Vyklyky pravovoho rehuliuvannia shtuchnoho intelektu v derzhavnomu upravlinni Ukrainy [Challenges of Legal Regulation of Artificial Intelligence in Public Administration of Ukraine]. *Natsionalni interesy Ukrainy – National Interests of Ukraine, 5*(5), 523–533 [In Ukrainian].
4. Furashev, V.M., Korzh, I.F. (2025). Shtuchnyi intelekt ta administratyvna (kontrolna) diialnist publichnoi vlady: yevropeiskyi pohliad [Artificial Intelligence and Administrative (Control) Activities of Public Authorities: A European Perspective]. *Informatsiia i pravo - Information and Law, 1*(52), 51-61 [In Ukrainian].
5. Buhai, O.V. (2024). Instrumentarii shtuchnoho intelektu u protsesakh pryiniattia upravlinskykh rishen schodo terytorialnoho vidnovlennia ta rozvytku : dys. ... d-ra filos. : 281 «Publichne upravlinnia ta administruvannia» [Artificial intelligence tools in management decision-making processes for territorial restoration and development: dissertation ... PhD: 281 «Public Management and Administration»]. Kyiv, 2024. 249 s. [In Ukrainian].
6. Zakon Ukrainy «Pro zakhyst personalnykh danykh» vid 1 chervnia 2010 r. #2297-VI [Law of Ukraine "On the Protection of Personal Data" dated June 1, 2010, No. 2297-VI]. *Ofitsiinyi portal Verkhovnoi Rady Ukrainy - Verkhovna Rada of Ukraine Official Portal.* Retrieved from: https://zakon.rada.gov.ua/laws/show/2297-17#Text (data zvernennia: 20.09.2025) [In Ukrainian].
7. Recommendation CM/Rec(2021)8 of the Committee of Ministers to member States on the protection of individuals with regard to automatic processing of personal data in the context of profiling. Council of *Europe's Committee of Ministers.* Retrieved from://rm.coe.int/0900001680a46147 [In English].
8. Alam T. The Four Levels of AI Decision-Making: From Assistance to Autonomy. *ApplyData AI.* Retrieved from: https://applydataai.com/artificial-intelligence/the-four-levels-of-ai-decision-making-from-assistance-to-autonomy/ [In English].
9. Guidelines on Automated individual decision-making and Profiling for the purposes of Regulation 2016/679. *European Commission.* Retrieved from: https://ec.europa.eu/newsroom/article29/items/612053 [In English].
10. Guiding Principles for Automated Decision-Making in the EU. *European Law Institute.* Retrieved from: https://www.europeanlawinstitute.eu/fileadmin/user_upload/p_ eli/Publications/ELI_Innovation_Paper_on_ Guiding_Principles_for_ADM_in_the_EU.pdf [In English].
11. Ducato, R. (2021). Automated Decision Making. *Glossary of Platform Law and Policy Terms / ed. by L. Belli, N. Zingales, Y. Curzi.* FGV Direito Rio. Retrieved from: https://platformglossary.info/automated-decision-making/ [In English].
12. Jovanovic, Z., Andonovic, S. (2021). Automated decision making in administrative procedure: Myth or reality? *Nauka bezbednost policija - Safety lessons police*, 25(3), 59-69 [In English].
13. Ihor Bezkaravainyi predstavyv kontseptsiiu systemy priorytezatsii dlia humanitarnoho rozminuvannia [Ihor Bezkaravayny presented the concept of a prioritization system for humanitarian demining]. *Ministerstvo ekonomiky, dovkillia ta silskoho hospodarstva Ukrainy - Ministry of Economy, Environment, and Agriculture of Ukraine.* Retrieved from: https://me.gov.ua/News/Detail/5fe779bf-4c7c-4bcc-ab99-85fd692ec25c?lang=uk-UA&title=IgorBezkaravainiiPredstavivKontseptsiiuSistemiPrioritezatsiiDliaGumanitarnogoRozminuvannia [In Ukrainian].
14. Priorytezatsiia v humanitarnomu rozminuvanni: ukrainski rozrobnyky stvoryly platformu iz ponad 100 naboramy danykh [Prioritization in humanitarian demining: Ukrainian developers have created a platform with over 100 data sets]. *Ministerstvo ekonomiky, dovkillia ta silskoho hospodarstva Ukrainy - Ministry of Economy, Environment and Agriculture of Ukraine.* Retrieved from: https://me.gov.ua/News/Detail/1207658b-0ef1-4648-910a-e9eedc9e45b0?lang= uk-UA&title=PrioritezatsiiaVGumanitarnomuRozminuvanni-Ukrainski RozrobnikiStvoriliPlatformuIzPonad100-NaboramiDanikh [In Ukrainian].
15. Postanova Kabinetu Ministriv Ukrainy vid 31.01.2007 r. «Deiaki pytannia realizatsii norm Zakoniv Ukrainy "Pro osnovy sotsialnoi zakhyschenosti osib z invalidnistiu v Ukraini" ta "Pro zainiatist naselennia"» [Decree issued by the Cabinet of Ministers of Ukraine on January 31, 2007, regarding the implementation of both: The Law of Ukraine «On the Fundamentals of Social Protection of Persons with Disabilities in Ukraine» and the Law of Ukraine «On Employment of the Population»]. *Ofitsiinyi portal Verkhovnoi Rady Ukrainy - Verkhovna Rada of Ukraine Official Portal.* Retrieved from: https://zakon.rada.gov.ua/laws/show/70-2007-%D0%BF#Text [In Ukrainian].
16. Nakaz Ministerstva nauky i osvity Ukrainy vid 10.02.2025 «Pro zatverdzhennia Poriadku pryiomu na navchannia dlia zdobuttia vyschoi osvity v 2025 rotsi» [Order of the Ministry of Science and Education of Ukraine dated February 10, 2025, on the approval of the Procedure for admission to higher education for the year 2025]. *Ofitsiinyi portal Verkhovnoi Rady Ukrainy - Verkhovna Rada of Ukraine Official Portal.* Retrieved from: https://zakon.rada.gov.ua/laws/show/z0312-25#Text [In Ukrainian].

17. Postanova Kabinetu Ministriv Ukrainy vid 26.10.2011 r. «Pro zatverdzhennia Poriadku vedennia Derzhavnoho reiestru rechovykh prav na nerukhome maino» [Decree issued by the Cabinet of Ministers of Ukraine on October 26, 2011, on the approval of the Procedure for maintaining the State Register of property rights to real estate]. *Ofitsiinyi portal Verkhovnoi Rady Ukrainy - Verkhovna Rada of Ukraine Official Portal.* Retrieved from: https://zakon.rada.gov.ua/laws/show/1141-2011-%D0%BF#Text [In Ukrainian].
18. Postanova Kabinetu Ministriv Ukrainy vid 23.06.2021 r. «Deiaki pytannia zabezpechennia funktsionuvannia Yedynoi derzhavnoi elektronnoi systemy u sferi budivnytstva» [Decree of the Cabinet of Ministers of Ukraine dated June 23, 2021, regarding certain issues related to the functioning of the Unified State Electronic System in the construction sector]. *Ofitsiinyi portal Verkhovnoi Rady Ukrainy - Verkhovna Rada of Ukraine Official Portal.* Retrieved from: https://zakon.rada.gov.ua/laws/show/681-2021-%D0%BF [In Ukrainian].
19. Postanova Kabinetu Ministriv Ukrainy vid 04.11.2015 r. «Pro zatverdzhennia Litsenziinykh umov provadzhennia hospodarskoi diialnosti z veterynarnoi praktyky» [Decree of the Cabinet of Ministers of Ukraine dated November 4, 2015, on the approval of the licensing conditions for conducting veterinary practice business activities]. *Ofitsiinyi portal Verkhovnoi Rady Ukrainy - Verkhovna Rada of Ukraine Official Portal.* Retrieved from: https://zakon.rada.gov.ua/laws/show/896-2015-%D0%BF#Text [In Ukrainian].

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