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SUSTAINABLE AI INTEGRATION IN LOCAL GOVERNANCE: HUMAN RIGHTS, ECONOMIC SUSTAINABILITY AND OVERCOMING DONOR DEPENDENCY

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Abstract. This article examines the interaction between artificial intelligence (AI) governance, donor dependency, human rights protection and economic sustainability in Ukrainian local self-government. The research employs doctrinal analysis, an institutional approach, a comparative legal methodology and an exploration of EU regulatory and policy documents concerning AI governance and digital transformation. Although donor-supported AI initiatives have generated important short-term benefits for local self-government bodies, crisis management and public services, many projects remain institutionally fragile and economically unsustainable once external funding cycles expire. The study shows that excessive reliance on donor financing can lead to a 'donor dependency trap', characterised by fragmented digital infrastructure, insufficient local administrative capacity, weak institutional integration and limited long-term financial sustainability. Meanwhile, the rapid introduction of AI technologies in local self-government raises serious human rights issues, especially concerning privacy protection, algorithmic discrimination, the transparency of automated decision-making processes, and the lack of effective oversight and appeal mechanisms. The article argues that the sustainable integration of AI in local self-government should not be viewed merely as a technological modernisation process, but as a broader constitutional and institutional transformation that complies with European standards of trustworthy AI governance. This requires stable domestic financing mechanisms, transparent procurement procedures, meaningful human oversight, unified interoperability standards and comprehensive legal safeguards that are consistent with the EU Artificial Intelligence Act and broader European human rights principles. The study concludes that Ukraine's successful European integration and post-war reconstruction depend not only on accelerating digital innovation, but also on embedding AI technologies within sustainable democratic, legal and economic institutions that can ensure long-term resilience, accountability and the protection of human rights.

Keywords: Artificial Intelligence, economic sustainability, regulatory frameworks, human rights, local self-government, donor dependency, sustainable development, economic development.

JEL Classification: K23, K38, O33, H70

1. Introduction

The integration of artificial intelligence (AI) into public administration is one of the most dynamic trends in the digital transformation of governance worldwide. For Ukraine, which is simultaneously undergoing the war, the ongoing reconstruction of the damage and preparing for EU membership, effectively and sustainably utilising AI at a local level is particularly important.

However, the majority of AI initiatives implemented in Ukrainian cities and towns still rely heavily on international donor funding and technical assistance. This creates a structural vulnerability: while many promising digital projects demonstrate positive results during the period of donor support, they often stop functioning or significantly decrease in quality once external financing ends. Such 'donor-driven' projects often fail to develop sustainable economic models,

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institutional capacity or long-term integration into local self-government. Consequently, valuable public resources are allocated ineffectively, and opportunities for authentic digital transformation are missed.

This reflects a broader structural challenge frequently observed in transition states: the emergence of a 'dependency trap' in digital governance, where short-term technological gains mask the absence of sustainable institutional and economic foundations. At the same time, the rapid implementation of AI systems raises serious concerns regarding human rights, particularly with regard to the protection of personal data, the prevention of algorithmic discrimination, the transparency of automated decisions and the right to meaningful human oversight. These issues are particularly critical at the local level, where AI technologies directly impact citizens' daily lives and their ability to exercise their constitutional rights.

The European Union has recognised these challenges and adopted a comprehensive regulatory framework, most notably the Artificial Intelligence Act. This Act emphasises a risk-based approach and the protection of fundamental rights. For candidate countries such as Ukraine, complying with EU standards in AI governance is becoming a technical requirement and a test of a country's ability to ensure sustainable digital development while upholding democratic values and the rule of law.

This article examines the complex interplay between AI, human rights, economic sustainability and donor dependency in the context of Ukrainian local self-government. Adopting a human rights-based approach and the doctrinal concept of constitutional freedom, this study analyses the influence of donor-driven AI projects on local self-government, and the regulatory, economic and institutional mechanisms necessary for their long-term viability and rights-respecting implementation.

The central research question is how Ukraine can achieve sustainable AI integration in local self-government that protects human rights, reduces dependency on donors, and contributes to long-term economic resilience. To address this question, the article pursues three objectives: (1) conceptualising the relationship between sustainable AI integration, human rights protection and economic sustainability; (2) assessing the scale, outcomes and risks of donor-funded AI projects in Ukrainian local self-government; and (3) identifying practical regulatory and economic pathways for overcoming donor dependency while maintaining a strong human rights focus.

2. Conceptual Framework: Sustainable AI Integration, Human Rights and Economic Sustainability

The sustainable integration of AI in local self-governance can be defined as the long-term implementation of AI technologies in municipal administration that respects human rights, is economically sustainable, and is institutionally grounded. This concept goes beyond the simple introduction of digital tools. It also requires the development of such governance models, that can sustain AI systems/tools even after external donor support ends.

The concept is based on three interdependent pillars. The first pillar is a human rights-based approach, demanding that AI systems used by public authorities comply with transparency, non-discrimination, privacy protection, accountability and meaningful human oversight principles. The second is economic sustainability, which is defined as the ability of AI projects to generate long-term value while maintaining financial viability and avoiding permanent reliance on external funding. The third pillar is institutional resilience – the ability of local self-government bodies to integrate, regulate and continuously adapt AI technologies within their administrative and decision-making processes.

Donor dependency poses a significant problem for this triad. This occurs when AI initiatives are designed and implemented primarily around the priorities, timelines and funding cycles of international donors, rather than the actual needs and absorption local capacity. This frequently results in technologically institutionally and economically unsustainable projects that cease to function once donor financing ends – a phenomenon that is becoming increasingly referred to as the 'donor dependency trap' in digital governance.

This study builds on several strands of academic research. Institutional economics provides a useful framework through which to understand the impact of governance structures on long-term economic outcomes. North's (1990) theory of institutions as 'rules of the game' and Acemoglu and Robinson's (2005) distinction between inclusive and extractive institutions are particularly relevant here. Rodrik (2018) further emphasises that institutional quality is a primary factor in economic performance, particularly in environments of rapid technological change. In the context of AI, weak institutional frameworks and donor-driven implementation can lead to new forms of technological exclusion and policy unpredictability (Acemoglu & Restrepo, 2020).

Alongside institutional economics, the study also incorporates a constitutional and human rights dimension as set out in Ukrainian constitutional doctrine (see Kantor et al., 2024). Rather than being viewed as an abstract philosophical category, constitutional freedom is understood as a concrete legal and factual condition in which the individual is protected from arbitrary interference by public authorities, including through algorithmic systems.

The economic sustainability of AI integration requires a movement away from short-term donor

projects towards hybrid financing models, public-private partnerships and the development of local, revenue-generating mechanisms. As Brynjolfsson et al. (2021) demonstrate in their analysis of the productivity J-curve, the economic benefits of general-purpose technologies such as AI only materialise after significant complementary investments in organisational change, skills, and institutional adaptation have been made. Without such mechanisms, AI risks becoming another short-term technological cycle followed by institutional stagnation and inefficient use of public resources.

The relationship between these concepts forms a complex analytical triangle: for sustainable AI integration, it is necessary to simultaneously satisfy human rights standards, demonstrate economic viability, and strengthen local institutional capacity rather than undermine it. For Ukraine, the situation is further complicated by martial law and the accelerated process of European integration. Although donor support has accelerated digitalisation, it has also created structural dependencies that endanger the protection of constitutional freedoms and the long-term economic resilience at the local level.

The framework provides an analytical basis for examining the practical manifestations of donor-driven AI projects in Ukraine, their human rights implications, and the regulatory and economic pathways necessary for achieving sustainable development.

3. EU Standards and International Benchmarks for AI Governance in Public Administration

The European Union has developed one of the world's most advanced regulatory frameworks for AI, positioning AI governance at the intersection of technological innovation, the protection of human rights, and democratic accountability. The adoption of the Artificial Intelligence Act (Regulation (EU) 2024/1689) established the first comprehensive supranational legal regime to govern the development and deployment of AI systems, using a risk-based regulatory model. The Act imposes particularly stringent obligations on high-risk AI systems, including those used in public administration, public service delivery, law enforcement and administrative decision-making processes that affect individuals' rights and legal status.

For EU candidate countries, approximation to the AI Act and the broader *EU digital acquis* is becoming an essential component of the accession process, particularly within the framework of Chapters 23 (Judiciary and Fundamental Rights) and 10 (Information Society and Media). Therefore, compliance requires not only formal legislative harmonisation, but also the establishment of effective institutional safeguards to ensure transparency, accountability, human oversight, cybersecurity, and protection against algorithmic discrimination.

The EU's approach to AI governance is grounded in a human-centric regulatory philosophy. Alongside the AI Act, the European Declaration on Digital Rights and Principles for the Digital Decade (2022) emphasises that digital technologies must be consistent with human dignity, democracy, equality and the rule of law. These principles are particularly significant in the context of local self-government, where AI systems are being used more and more for tasks such as resource allocation, social assistance administration, urban management, predictive analytics, and citizen interaction. Under emerging European standards, local self-government bodies using AI technologies must ensure that they are legal, proportionate, non-discriminatory, compliant with data protection regulations, explainable, and allow for human intervention in decisions affecting individuals. At the same time, compliance with these standards requires not only appropriate legal regulation but also sufficient institutional and financial capacity to maintain digital infrastructures over the long term.

However, international experience shows that implementing digital governance reforms in transition states often faces structural sustainability challenges. A recurring weakness is the excessive dependence of digital transformation initiatives on external donor financing. Several donor-funded civic technology and digital democracy projects implemented in the Western Balkans illustrate this pattern. For instance, initiatives such as the *Initiative for Digital Democratic Action and the Participatory Capital Investment Programme* in Kavaja, Albania, which were widely promoted through international participatory governance platforms, subsequently lost operational capacity after donor support expired. Similar experiences have been observed in North Macedonia and Bosnia and Herzegovina, where multiple digital participation projects launched during the mid-2010s stopped working after externally funded project cycles were completed.

These examples illustrate a broader structural problem characteristic of many transition democracies. Although donor financing can enable the introduction of innovative digital tools, the long-term sustainability of these tools is often addressed insufficiently. The absence of stable domestic financing mechanisms, weak institutional integration, limited administrative capacity and inadequate local involvement often prevents digital initiatives from becoming lasting components of public governance systems. Consequently, technologically advanced pilot projects frequently fail to produce durable institutional transformation.

The European Commission's Enlargement Reports consistently emphasise the importance of institutional resilience, administrative capacity and local ownership in digital governance reforms (European Commission, 2024). Candidate states are expected to demonstrate

not only the ability to formally transpose EU legislation, but also the capacity to independently maintain, finance, supervise and further develop digital infrastructures without external assistance. Accordingly, overreliance on donor funding, insufficient medium-term budgetary planning and fragmented institutional coordination are regularly identified as significant risks to the sustainability of governance reforms.

For Ukraine, these European experiences are particularly important. It is simultaneously pursuing large-scale digital transformation, implementing AI-related governance initiatives and advancing towards EU membership, all under the exceptionally difficult conditions of wartime and post-war reconstruction. In this context, integrating AI into local self-government cannot be viewed as only a technological modernisation process. Rather, it forms part of a broader constitutional and institutional transformation associated with European integration, democratic resilience and reconstruction governance.

Consequently, public resources are often allocated inefficiently, while opportunities for sustainable digital transformation remain unrealised. Meaningful human oversight, transparent procurement procedures, data protection guarantees, anti-discrimination safeguards and sustainable financing models for digital infrastructure are essential for establishing alignment with the European legal framework.

4. Donor-Driven AI Projects in Ukrainian Local Governance: Scale, Benefits and the Dependency Trap

Between 2020 and 2025, Ukrainian local self-government bodies implemented a wide range of digital governance and artificial intelligence solutions, receiving substantial support from international donors such as the European Union, the United Nations Development Programme (UNDP), USAID and the World Bank, as well as various donor programmes. These initiatives formed part of the broader digital transformation agenda pursued during decentralisation reform and subsequently under wartime governance conditions. Examples of projects implemented by local self-government bodies include AI-assisted video surveillance systems as part of "Safe City" programmes; together with the state bodies – predictive analytics tools for distributing social assistance and humanitarian aid to internally displaced persons (IDPs), digital risk assessment systems and facial recognition technologies for security and public order purposes.

Many of these initiatives produced short-term administrative benefits. AI-supported systems improved the speed of municipal service delivery, strengthened emergency response coordination, facilitated wartime urban monitoring and enabled the more efficient allocation of limited social assistance resources in situations of large-scale internal displacement. In the context of the full-scale Russian invasion, digital governance technologies became an important element of local self-government resilience and crisis management.

At the same time, the rapid deployment of AI systems in local self-governance has raised significant legal, ethical and human rights concerns. AI-based video surveillance systems, implemented as part of 'Safe City' initiatives in major Ukrainian cities such as Kyiv, Lviv, Dnipro, have triggered extensive public and expert debate regarding the proportionality of surveillance measures, the protection of privacy rights and the risks associated with large-scale biometric monitoring. Many of these systems incorporate facial recognition technologies capable of real-time identification and behavioural tracking, and frequently operate in the absence of comprehensive legal regulation, independent oversight mechanisms or transparent procedures governing data collection, retention and processing.

Comparable concerns have emerged regarding algorithmic systems used to allocate social benefits and humanitarian assistance to internally displaced persons (IDPs) and other vulnerable groups. Although these systems were introduced to improve administrative efficiency and prioritisation in emergency situations, they have been criticised for their opaque decision-making procedures, the limited explainability of their outputs, the potential for discriminatory bias in risk-scoring models and the lack of effective appeal mechanisms for those affected. Consequently, these technologies may conflict with fundamental legal principles such as equality, non-discrimination, due process, transparency and the right to social protection.[1]

Beyond human rights considerations, the Ukrainian experience demonstrates the significant structural vulnerabilities associated with donor-driven digital transformation. A considerable number of local self-government AI projects encountered serious sustainability issues once external funding cycles had expired. Often, local self-government bodies lacked the budgetary resources necessary to maintain, modernise or provide technical support for newly introduced digital infrastructures. Local self-government bodies often remained dependent on external contractors, donor expertise and temporary grant financing, while their internal administrative and technical capacities for long-term system management remained underdeveloped.

[1] OECD, Modernising Access to Social Protection for the Challenges Ahead (OECD Publishing, 2023), emphasising that automated welfare decision-making systems require transparency, explainability, human oversight, and accessible appeal mechanisms for individuals adversely affected by algorithmic decisions.

This phenomenon reflects a broader 'donor dependency trap' that is characteristic of digital governance reforms in many transition states. Under these conditions, local self-government bodies gain access to advanced technological solutions without developing the necessary institutional, financial and human resource capacities for sustainable operation. Consequently, technologically sophisticated pilot initiatives often fail to evolve into stable components of local self-government bodies once external support diminishes.

The economic consequences of this dependency model are substantial. Public resources are often allocated to fragmented pilot projects that fail to generate long-lasting institutional value. This results in inefficient expenditure, duplication of digital infrastructure and inconsistent technological standards across territorial communities. Furthermore, repeatedly introducing new donor-funded initiatives while previously established systems deteriorate or become non-operational undermines public confidence in digital transformation policies and weakens trust in local self-government institutions.

This fragmentation may also complicate Ukraine's approximation to the EU *digital acquis* and emerging European standards on trustworthy AI. The absence of unified interoperability standards, long-term procurement strategies and coordinated national oversight leads to the development of isolated technological ecosystems which are difficult to integrate into a coherent state digital 'architecture'. In the context of Ukraine's European integration process, such fragmentation could make it more difficult to comply with EU standards on AI governance, cybersecurity, personal data protection, algorithmic accountability and digital public administration in the future.

The Ukrainian experience therefore shows that the success of integrating AI into local self-government depends on more than just technological innovation or donor support; it also requires institutional sustainability, democratic accountability and strategic public financing. Long-term success requires a gradual transition from externally driven pilot experimentation to the implementation of digital governance models that are structurally integrated and supported by stable domestic financing, qualified personnel, transparent procurement procedures and effective legal oversight mechanisms that are consistent with the emerging European standards of reliable AI governance.

5. Conclusion

Integrating artificial intelligence into local self-government is one of the most significant aspects of Ukraine's digital transformation today. However, the Ukrainian experience shows that the effectiveness of AI governance cannot be judged by technological innovation or short-term administrative efficiency alone. Rather, sustainable AI integration requires the simultaneous fulfilment of three interconnected conditions: the protection of human rights, institutional resilience and long-term economic sustainability.

This study has shown that AI initiatives supported by donors and implemented in Ukrainian local self-government bodies between 2020 and 2025 produced important short-term benefits, particularly in wartime. AI-assisted systems contributed to crisis management, municipal coordination, security monitoring and the distribution of social assistance to vulnerable populations. However, the research also revealed significant structural vulnerabilities associated with donor-driven digital transformation models. Excessive reliance on external funding, weak institutional integration, inadequate domestic budgetary planning and limited local technical capacity often undermined the long-term sustainability of local self-government AI projects.

The article also found that the rapid introduction of AI technologies in local self-government raises human rights issues. AI-assisted surveillance systems, facial recognition technologies and algorithmic decision-making mechanisms in the social sphere, in particular, may pose risks relating to privacy violations, algorithmic discrimination, opaque decision-making procedures and inadequate procedural safeguards. Without comprehensive legal regulation and effective oversight mechanisms in place, these technologies may conflict with European standards regarding transparency, accountability, proportionality and meaningful human control over automated administrative processes.

A comparative analysis of EU standards shows that approximation to the European *digital acquis* requires more than just formal legislative harmonisation. Candidate countries must also demonstrate their institutional and financial capacity to independently maintain trustworthy digital infrastructures, without relying on external donor support. Consequently, sustainable AI governance should be understood as a long-term institutional process rather than a series of isolated technological projects.

These findings are particularly important for Ukraine in the context of European integration and post-war reconstruction. Transitioning from donor-dependent digital experimentation to sustainable, rights-based AI governance requires stable domestic financing mechanisms, transparent procurement systems, qualified administrative personnel, unified interoperability standards and effective legal safeguards that are consistent with the EU Artificial Intelligence Act and broader European human rights standards.

Ultimately, the Ukrainian case illustrates a broader challenge faced by many transition democracies: while digital transformation can accelerate institutional modernisation, without sustainable governance

structures it can also create new dependencies and institutional fragility. Therefore, the long-term success of AI integration in local self-government depends not only on technological capacity, but also on the state's ability to embed digital innovation within stable democratic, legal and economic institutions.

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