EXPLORING THE CAPACITY OF AI TECHNOLOGIES TO COMBAT CORRUPTION

ДОСЛІДЖЕННЯ ПОТЕНЦІАЛУ ТЕХНОЛОГІЙ ШТУЧНОГО ІНТЕЛЕКТУ ДЛЯ БОРОТЬБИ З КОРУПЦІЄЮ

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The article is devoted to the exploration of the possibilities of digital technologies with elements of artificial intelligence (AI) as a promising tool for combating corruption-related criminal offenses. It is claimed that digital technologies, incorporating elements of AI, offer a promising and innovative approach for efficiently managing information and optimizing processes across different sectors. The study involved an examination of both national and international legal documents regarding AI and corruption regulation. It reviewed contemporary scholarly research on AI capabilities in fighting corruption-related crimes. The analysis highlighted that Ukraine is in need of an entirely new strategy to address corruption-related criminal activities, especially under the legal conditions of martial law and in anticipation of potential European Union membership. The emphasis is placed on the necessity to implement measures to harmonize the existing legal frameworks for AI regulation in Ukraine with current and developing regulations within the EU. Currently, a research gap in Ukraine restricts the creation of the approaches, limiting AI's full potential in combating corruption. It is concluded that its important to develop an innovative strategy and recommendations for the implementation of AI technologies within Ukraine's anti-corruption framework. The development and implementation of an AI-driven anti-corruption strategy in Ukraine have the potential to bring the transformative outcomes, ranging from the economic growth of the country in the post war renovation period to fostering international collaboration and rebuilding public trust through the mechanisms of transparency. International collaboration mechanisms should be structured to establish a unified concept for transnational corruption prevention using AI. Additionally, there is a need to establish a systematic approach for the integration of universal AI-based anti-corruption tools, to effectively address corruption on a global scale.

Key words: artificial intelligence, corruption, EU integration, international experience, martial law, prevention, criminal offences.

Стаття присвячена дослідженню можливостей цифрових технологій з елементами штучного інтелекту (ШІ) як перспективного інструменту для боротьби з корупційними кримінальними правопорушеннями. Стверджується, що цифрові технології, які включають елементи ШІ, пропонують перспективний та інноваційний підхід для ефективного управління інформацією та оптимізації процесів у різних секторах. Дослідження містить аналіз національної та міжнародної нормативно-правової бази щодо регулювання ШІ та корупції. Розглянуто науковий доробок вчених щодо перспектив ШІ у боротьбі з корупційними правопорушеннями. Акцентовано, що Україна потребує розроблення оновленої стратегії для вирішення проблем, пов'язаних із корупцією, особливо в умовах дії правового режиму воєнного стану та активізації процесів, спрямованих на здобуття членства в Європейському Союзі у перспективі. Наголошується на необхідності впровадження заходів для гармонізації існуючого правового регулювання ШІ в Україні з чинними регуляціями ЄС. Наразі існує прогалина у наукових дослідженнях в Україні, спрямованих на вироблення підходів щодо використання потенціалу ШІ у боротьбі із корупційними зловживаннями. Зроблено висновок, що важливо розробити інноваційну стратегію та рекомендації для впровадження технологій ШІ в антикорупційну політику в Україні. Розробка та впровадження стратегії боротьби з корупцією на основі ШІ в Україні може принести трансформаційні результати, починаючи від економічного зростання країни у період післявоєнної реконструкції до сприяння міжнародній співпраці та відновленню довіри громадськості через механізми прозорості. Механізми міжнародної співпраці повинні бути структуровані таким чином, щоб створити єдину концепцію для транснаціональної превенції корупції за допомогою ШІ. Наголошується на необхідності розроблення системного підхід для інтеграції універсальних антикорупційних інструментів на основі ШІ для ефективної боротися з корупцією на глобальному рівні.

Ключові слова: штучний інтелект, корупція, євроінтеграція, міжнародний досвід, воєнний стан, протидія, кримінальні правопорушення.

Problem statement. According to the Art. 1 of its Constitution, Ukraine is established as a sovereign state that is independent, democratic, social and governed by the rule of law. It aims to adhere to the core principles of legality, justice and the rule of law throughout its territory. Nevertheless, the issue of corruption significantly hampers these objectives, leading to a wide display of negative consequences in various sectors such as the economy, political landscape, social progress, investment initiatives and the country's image on the international stage. Corruption is a wide– spread phenomenon that affects multiple political regimes and levels of economic development, impacting nations around the world. Since gaining its independence, Ukraine has consistently faced corruption as one of its major problems. The digitization of the economy necessitates innovative tools to improve sector performance, reduce abuses and prevent criminal activities. Despite challenges from martial law and infrastructure damage, Ukrainian society continues to function.

The 2019–2021 lockdowns worsened corruption levels, as the COVID-19 pandemic disrupted business operations, closed borders and affected supply chains, increasing corruption risks. However, 2021 demonstrated the economic improvements after the pandemic's downturn. The year 2022 was a period of adaptation for Ukraine, facing internal changes and external threats, notably the full-scale russian invasion on February 24, 2022, threatening national security and territorial integrity. Russian disinformation and ineffective communication strategies regarding anti-corruption measures distort Ukraine's public perception of corruption.

Analysis of recent research. Researchers and practitioners have studied the role of AI in anticorruption efforts. Their focus includes exploring how AI technologies, like machine learning and data analytics, can prevent, detect and combat corruption. Studies often analyze AI tools' applications to provide transparency, automate compliance checks and identify corrupt patterns. Practical implementations and case studies are examined to assess AI's real-world impact in different sectors, revealing both opportunities and challenges in deploying AI as an anticorruption tool. AI is the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings [1]. In the terms of the workshop on "Use of big data

and AI in fighting corruption and misuse of public funds – good practice", ways forward and how to integrate new technology into contemporary control framework, organized by the Policy Department on Budgetary Affairs for the Committee on Budgetary Control of European Parliament, how big data and AI have been used to detect and prevent fraud, corruption, and conflict of interests was discussed. Recent studies underscore the relevance of AI in corruption prevention. *Petr Suchy* [2] highlights big data's influence on corruption risk assessment. *N. Köbis, C. Starke, and I Rahwan* [3] discuss the impact of top-down vs. bottom-up AI implementation on corruption risks. Economists *Michael Kremer and Esther Duflo* [4] link corruption scandals to political instability and declining public trust. *Adobor and Yawson* [5] identify challenges to AI use in anti-corruption efforts. *Albert Sanchez-Graells* [6] emphasizes AI as a complement, not a substitute, to existing anti-corruption methods. *Fernanda Odilla* [7] showcases AI-driven anti-corruption tech in Brazil. While AI enhances public service efficiency, practitioners stress its limitations in understanding emotions. For Ukraine, embracing AI in the post-war period is crucial for effective corruption combat and governance strengthening. In the terms of the martial law, corruption in Ukraine has evolved, **leading to new forms of illicit activities** requiring immediate investigation and criminalization. These **include corruption linked to illegal border crossings by draft-age men and related abuses.** New forms of corruption have emerged, including but not limited to: acquiring documents essential for importing goods and instances of corruption related *to the delivery of military summons or within the provision of humanitarian aid to regions affected by military aggression. Drago Kos* [8], acknowledging the pre-invasion corruption scenario, emphasizes the critical role of the Ukrainian government, backed by the international community, in *revitalizing national anti-corruption agencies and supporting civil society in restoring monitoring functions.* Effectively implementing anti-corruption policies goes beyond mere declarations; it requires practical application. **The purpose** of this article is to develop the arguments for the integration AI technologies in Ukraine's anti-corruption framework.

The main material. Wartime transformations pose new risks, enabling corrupt practices. Ukraine's anti-corruption mechanisms have shown effectiveness in holding public officials accountable to so extent. Investigating the potential use of AI for the prevention of corruption in Ukraine is a timely and significant effort. Ukraine is still in the process of establishing an effective anti-corruption system, proper state affairs and property management, honesty, incorruptibility and active public. The adoption of AI mechanisms in Ukraine's anti-corruption efforts as an innovative tool, could contribute to the efficiency, transparency and effectiveness of preventive measures. The implementation of AI technologies can be an effective alternative for the prevention of corruption in Ukraine, making them potentially more effective than traditional methods. While traditional methods such as legal frameworks, regulatory measures and law enforcement are essential components of an anti-corruption strategy, AI technologies offer a complementary and powerful toolset that can make positively affect the prevention efforts in a rapidly changing technological landscape. Some measures to combat corruption with the help of AI are gradually being implemented in Ukraine. The National Agency for the Prevention of Corruption (NACP) has changed its approach to checking the declarations of civil servants. From now on, AI will be involved in it. Priority was given to the declarations of the President, ministers, people's deputies, judges of the Constitutional and Supreme Courts. Because of this, more than 99 % of the declarations were not covered by system control – checks of employees of other positions were carried out only at the request of citizens, materials of journalistic investigations or within the framework

of cooperation with law enforcement agencies [9]. It's essential to emphasize that the inspection of high-ranking officials' declarations should be systematic. Combatting political corruption and grand corruption goes beyond mere declaration checks. The primary focus should be on proactively preventing corruption crimes throughout various stages of the professional activities of these individuals. The Corruption Perceptions Index 2022 for the Eastern Europe and Central Asia, compiled by Transparency International [10], a global anti-corruption organization, identifies that before the invasion of russia, Ukraine was making progress in anti-corruption reforms. Despite the international armed conflict, the country maintained a commitment to the proper reforms, evident in the adoption of the National Anti-Corruption Strategy in June 2022 [11]. It is also crucial to emphasize that the legal framework of martial law necessitates the adoption of measures specifically crafted to mitigate the impact of military actions and address external threats. The enactment of the relevant law on July 10, 2022, following the 2021 Anti-Corruption Strategy, prompts concerns about the somewhat controversial process of its adoption. The Anti-Corruption Strategy for 2021–2025 focuses on taking substantial steps in preventing and combating corruption. Its objective is to establish a cohesive and systematic approach to anti-corruption efforts across all state authorities and local self-government bodies in Ukraine [11]. The successful implementation of this strategy is realistically achievable only after the termination of the legal regime of martial law, considering the expected modifications in social relations. The following endorsement of the 2023–2025 State Anti-Corruption Program aligns with one of the core principles of digitally transforming the execution of authority by governmental and local self-governing entities [12]. Implementation of the Program should contribute to further work on Ukraine's acquisition of membership in the EU, the North Atlantic Alliance (NATO), and the Organization for Economic Cooperation and Development (OECD).

It worth to mention that in 2023 Ukraine scored 36 points out of 100 in the 2023 Corruption Perceptions Index (CPI). Currently the country ranks 104th out of 180 countries. Ukraine's growth by 3 points is one of the best results over the past year in the world. Ukraine is also one of the 17 countries in 2023 year's CPI that have shown their best performance ever [13]. An important observation is Ukraine's substantial advancement in the battle against corruption, reflected in a 3-point increase in the Index this year. This rising trajectory, evident since 2014, signifies a creditable achievement in the terms of wartime in Ukraine. The impressive feat emphasizes the unbendable efforts of both the government and civil society to reduce the level of corruption [14].

Ukraine can gain invaluable experience in combating corruption by drawing on the strategies of other countries, especially those within the European Union (EU). Corruption is a cross-border phenomenon that impacts societies and economies universally. Nevertheless, EU has demonstrated successful anti-corruption strategies and mechanisms that have contributed to reducing corruption levels in its member states. Adopting and adapting these strategies could provide Ukraine with proven methods for tackling corruption effectively. Ukraine makes the efforts to align itself with European standards and values, incorporating EU anti-corruption practices. Furthermore, EU experience provides valuable recommendations into addressing corruption within diverse socio-political contexts. Understanding how different EU member states have developed and adapted their approaches to combat corruption can offer Ukraine a range of the innovative strategies. Drawing on the EU anti-corruption experience is essential for Ukraine to benefit from proven methodologies, align with international standards. *T. Becker and B. Eichengreen* (2022) suggest that utilizing international aid, coupled with the prospect of EU membership, can position Ukraine as

an attractive destination for foreign direct investment. This, in turn, would expedite the country's recovery and deepen its integration into the global economy. The authors argue that EU accession is essential for implementing institutional reforms aimed at addressing chronic issues such as corruption, weak governance, and concentration of economic power [15].

On the 17th of June 2022, the European Commission recommended granting Ukraine the status of a candidate for EU membership, and on 23 June 2022, the European Parliament adopted a resolution on the immediate granting of EU candidate status to Ukraine [16]. Requirements were defined as prerequisites for Ukraine's accession to the EU in the future. Among the three key criteria provided by the Copenhagen criteria [17], the second one – the economic criterion– provides for the effective market economy of the country and the ability to resist competition and market forces [18] which will contribute to the fulfillment of Ukraine's obligations under international treaties, according to the Association Agreement between Ukraine and the EU. In addition, on 23 February 2023, Ukraine approved draft law No. 0187, "On the ratification of the Agreement between Ukraine and the European Union on the Participation of Ukraine in the European Union Program", "Digital Europe" (2021–2027) [19], which involves the development of projects in the following areas: supercomputer, AI, cyber security, digital skills, as well as ensuring the wide use of digital technologies in the economy and society. It is obvious that joining the Program will have a positive effect on the implementation of digital projects in Ukraine and cooperation with international partners within the framework of projects implemented based on the principles of EU digital legislation. In addition to the above, Ukraine is a member of the Special Committee on AI of the Council of Europe. Back in October 2019, the country joined the recommendations of the Organization for Economic Cooperation and Development on AI [20]. Hence, the recovery project by the National Council for Ukraine's post-war restoration, outlined within the "Digitalization" working group materials, encapsulates a roster of primary issues and objectives imperative for resolution within the designated recovery plan [21]. The modernization stage "Structural modernization and full integration into the EU" within the framework of strategic tasks for the period 2026–2032 provides for the introduction of AI technologies in the provision of public services, the implementation of which is entrusted to the Ministry of Digital Transformation in Ukraine. Along with this, the Program proposes the creation of access to European instruments for grant funding of projects within the framework of the EU program "Digital Europe" through relevant performance indicators. In the context of the task "Ukraine is an international leader in the field of fighting corruption, development of civil society institutions and openness of public information", the full implementation of the European legislation on the free movement of non-personal data to Ukraine and the dissemination of knowledge in the field of open data (open data literacy) through educational programs and portal "Diia" Open Data [22]. Restoration of the damaged digital infrastructure of Ukraine is a priority task in the sector of digital services.

The European Council granted Ukraine EU candidacy, emphasizing the need for enhanced anti-corruption efforts. Addressing corruption challenges is vital in Ukraine's societal reform, given its obstructive impact on reforms within the state apparatus. Corruption in **the field of justice** is one of the widespread types of corruption in Ukraine, negatively influencing the process of administration of justice. For example, in May 2023, the head of the Supreme Court of Ukraine and the intermediary lawyer, who was exposed the day before together with the judge, were informed of the suspicion of receiving a bribe of 2.7 million dollars. Before that, on May 15, they were detained by the National Anti-Corruption Bureau (NABU). According to NABU, the bribe was taken for making

a judgement in favor of one of the highest state officials [23]. The crucial point of anti-corruption endeavors **centers around international organizations.** Ukraine directs its efforts against corruption by entering into conventions and agreements, coupled with implementing recommendations embedded in diverse provisions aimed at enhancing anti-corruption measures effectively. This includes adherence to universal conventions like the UN Convention against Corruption [24] and conventions originating from the Council of Europe, such as the Criminal Convention on Combating Corruption [25], Civil Law Convention on Corruption [26], Council of Europe Convention on the Manipulation of Sports Competitions [27], and the Additional Protocol to the Criminal Law Convention on Corruption [28]. Additionally, Ukraine aligns with the resolutions and recommendations of the Group of States against Corruption (GRECO), notably, Resolution (97) 24 from the Committee of Members of the Council of Europe, which outlines Twenty Guiding Principles for the Fight against Corruption [29]. Moreover, considering Ukraine's path toward European integration, significant importance is attributed to the Association Agreement between the European Union and its Member States on one side and Ukraine on the other [30] and European Union Anti-Corruption Initiative in Ukraine (EUACI) [31], which consolidates efforts aimed at promoting anti-corruption reforms in Ukraine. The mentioned above indicates that the implementation of our proposed idea on countering corruption through AI will have significant importance not only at the national level but also in the context of international collaboration to combat transnational corruption. The anti-corruption expert Sophie Lemaitre argues, that different countries must form the platforms to exchange on corruption prevention actions can help identify and learn from successes and challenges [32]. Acknowledging the existing deficiencies in the anti-corruption framework across member states, the European Commission proposed a Directive on May 3, 2023 [33] (further after – Directive) aimed at enhancing and harmonizing anti-corruption measures. The proposed framework aims to standardize definitions and penalties for corruption offenses, ensuring robust criminal law tools are uniformly applied across all 27 EU member states. The objective is to strengthen the prevention and enforcement of anti-corruption measures, addressing the full spectrum of corruption offenses [34]. From the point of view of Francesco Clementucci and Adrianna Miekina the objectives of the proposed anti-corruption directive are threefold: 1) consolidating the existing anti-corruption rules into one single legal act; 2) building up an effective integrity system through awareness-raising campaigns as well as research and education programs in order to mitigate incentives for corruption; 3) facilitating the effective investigation and prosecution of corruption cases by ensuring sufficient resources as regards staff and dedicated investigative tools [35]. In our opinion the document lacks proportionality in addressing both preventive and repressive measures. **Along with the repressive measures, utilizing AI technologies to combat corruption abuses can be considered as an alternative and innovative tool for corruption prevention in the global context.** There are currently all the reasons for this. The legal regulation regarding the use of AI in EU is in the process of development, and the state policy in the field of AI in Ukraine is uncoordinated. This complicates the preparation of sectoral legal framework for the use of AI systems in the particular fields. The draft law on the AI regulation [36] was proposed by the European Commission on 21 April 2021. The draft law on AI of the EU defines the general mandatory requirements for the design and development of AI systems before they are placed on the market, which will be put into effect through harmonized technical standards. However, only on the 14th of June 2023, the European Parliament adopted a compromise text of the EU Law on AI with relevant additions. The EU Law on AI, after its adoption, will become the first international act regulating the use of AI systems. In connection

with the European integration processes strengthening in Ukraine, the EU Law on AI, after its adoption, will also become the basis (model law) for the development of relevant legislation at the domestic level. It is obvious that the EU Law on AI will have a unified character for EU states. The post-war recovery of Ukrainian economy will require significant investment in the field of financial technologies and AI, which can only be ensured if the relevant technologies function within the framework of the AI law developed and adopted at the state level [37].

Conclusions. Development of scientific approaches concerning the legal aspects of implementing AI technologies across diverse societal sectors at the national level holds significant relevance. The international experience plays a crucial role in formation the concept around AI and anti-corruption measures. Several countries, including EU members, have initiated efforts to integrate AI technologies into their anti-corruption frameworks**.** Ukraine needs international support not only to end the war and address wartime crimes but also for post-war rehabilitation. This includes a crucial overhaul of the anti-corruption policy, emphasizing practical and effective implementation. Post-hostilities Ukraine's reconstruction demands targeted, systematic and proactive anti-corruption efforts. Unlike external challenges, internal corruption poses a unique threat that must be addressed to prevent it from worsening post-war difficulties. Corruption poses a threat to national interests, sustainable development and European integration. Legislative shortcomings, systemic imperfections and unclear law-making procedures contribute to the displays of corruption despite substantial efforts by the state and international institutions to combat it. Harmonizing existing legal frameworks for AI regulation in Ukraine with EU standards necessitates a continuous review and adaptation of Ukrainian legislative provisions. This includes considerations for technological advancements and legal developments, allowing for the development of amendments to Ukraine's anticorruption legislation in line with the emergence of new types of corruption.

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