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Mirjana Dejanović[*]

Faculty of Project and Innovation Management "Prof. dr. Petar Jovanović," Educons University, Belgrade

Anatolijs Krivins[**]

Department of Law, Management Science and Economics, Daugavpils University, Latvia

LEGAL AND FINANCIAL REGULATION OF AI IN SERBIA, LATVIA, AND THE EU

Abstract

Artificial Intelligence (AI) is being rapidly integrated across numerous sectors, with the financial industry at the forefront of technological transformation. It is influencing processes such as credit evaluation, fraud detection, risk modelling, and personalised financial services. This expansion increases the need for coherent legal frameworks, ethical governance, and financial sustainability, particularly regarding user protection, algorithmic transparency, safety, and liability for negative outcomes. This study offers a comprehensive comparative analysis of AI regulatory frameworks in the Republic of Serbia, Latvia, and the European Union (EU). Using a multidisciplinary qualitative methodology that integrates normative legal analysis, economic evaluation, and ethical considerations, the research is investigates Serbia's harmonisation efforts with EU standards, Latvia's implementation of the EU AI Act and complementary financial mechanisms, and the EU's comprehensive regulatory architecture, including the AI Act and GDPR. Key findings identify shared legal challenges such as accountability, transparency,

[*] E-mail: mirjana.dejanovic@pmc.edu.rs; ORCID: 0000-0003-3369-331X
[**] E-mail: anatolijs777@gmail.com; ORCID: 0000-0003-1764-4091

data protection, and the agility of regulatory frameworks in adapting to rapid AI innovation. From a financial perspective, the study identifies compliance costs for small and medium-sized enterprises (SMEs), confusion in liability distribution, and budgetary pressures on supervisory authorities. Regulatory fragmentation presents a significant barrier to cross-border AI innovation and internal market coherence. The paper concludes with policy recommendations focused on enhancing regulatory harmonisation, financial feasibility, and ethical guidance, aiming to foster sustainable AI integration that balances innovation with social protections.

Keywords: Artificial Intelligence, legal regulation, financial regulation, ethics, Serbia, Latvia, European Union

INTRODUCTION

Artificial Intelligence (AI) is rapidly transforming diverse sectors, extending far beyond everyday applications and fundamentally reshaping the financial industry. Its integration into key areas such as credit risk assessment, fraud prevention, algorithmic decision-making, and the provision of personalised financial services signals a paradigm shift in operational efficiency and innovation. Aligned with these advancements are significant legal, ethical, and economic challenges that demand the creation of adaptive and forward-looking regulatory frameworks. These frameworks must strike a balance between encouraging innovation and protecting fundamental rights, ensuring transparency, and preserving financial stability.

This study presents a comparative analysis of AI regulation in the Republic of Serbia, the Republic of Latvia, and the EU. These jurisdictions, while divergent in their legal traditions, institutional architectures, and socio-political contexts, converge in their ambition to address the multifaceted complexities of AI governance. The financial sector in Serbia, Latvia, and the EU faces high compliance costs with AI regulations, which particularly affect small and medium-sized enterprises due to their significantly smaller capacities, making compliance costs (e.g. investments in technology, employee training) much higher compared to large corporations, while General Data Protection Regulation

(GDPR) complicates data collection and processing, requiring greater transparency and user consent.

The primary aim of this research is to critically analyse the legal and financial dimensions of AI regulation across these three jurisdictions, with particular attention to institutional effectiveness, legislative consistency, and long-term economic viability. The central hypothesis is that regulatory alignment, driven by ethical principles and economic logic, enhances the legitimacy, effectiveness, and social faith in AI governance. Methodologically, the research applies a triangulated approach, combining normative-descriptive analysis, comparative legal methods, and financial impact assessment.

HYPOTHESIS, THEORETICAL AND METHODOLOGICAL FRAMEWORK, AND LITERATURE REVIEW

This research is grounded in the assumption that the effective regulation of AI in the financial sector must rest on a harmonised legal and ethical foundation that balances innovation with economic sustainability. The central hypothesis is that jurisdictions, which align their AI regulatory practices with EU standards, are more likely to achieve legal legitimacy, economic efficiency, and public trust. In addition, Serbia and Latvia, though structurally distinct, converge towards a common regulatory trajectory under the influence of EU integration and harmonisation imperatives. This issue requires harmonised regulation at a global, international level, not just within the EU.

From a theoretical standpoint, the study adopts an interdisciplinary approach, integrating concepts from jurisprudence, regulatory theory, economic analysis of law, and applied ethics. The concept of legal legitimacy, as articulated in modern legal theory, is central to the analysis, particularly in the context of automated decision-making and algorithmic uncertainty. Ethical dimensions are based on discussions about human-centric AI, fairness in automated systems, and risk governance, drawing on prominent theorists in digital ethics (Floridi *et al*. 2018; Floridi 2019).

Methodologically, the research employs a tripartite structure. First, a normative-descriptive method is applied to analyze legal texts, national strategies, and institutional frameworks in Serbia, Latvia, and the EU. This approach provides a deeper understanding of how different

countries implement and adapt their legal systems to align with EU standards in the field of AI.

Existing literature provides a solid foundation for this investigation, with Lilkov (2021) pointing out the institutional and normative challenges of implementing the EU AI Act, cautioning against overregulation and fragmentation across EU member states. AI tools like Lexis+AI, Ask Practical Law AI, and Westlaw AI, while improving research efficiency, struggle with accuracy, especially due to hallucinations that undermine the reliability of legal conclusions. To be trustworthy, AI must resolve these issues and ensure the credibility of legal information (Magesh *et al.* 2025). In public procurement, AI has demonstrated clear advantages, such as increased efficiency and cost savings, but it also raises ethical concerns, including algorithmic bias, data privacy, and transparency, with recommendations for clearer guidelines and professional training (Obinna and Kess-Momoh 2024). The explainability of AI (XAI) is crucial for trust and transparency in the financial sector, though challenges remain with the reliability of explanations and risks from potentially misleading information (Yeo *et al*. 2025). In addition, AI has a transformative impact on traditional accounting practices, enhancing efficiency and accuracy, though concerns over data privacy persist (Odonkor *et al*. 2024). Big data and AI are expected to revolutionize customer interactions, creating new growth opportunities for financial institutions to improve efficiency and offer innovative services (Ahmadi 2024).

Together, this framework provides a robust analytical view through the regulatory dynamics of AI in the financial sector, critically examined across three distinct interrelated legal environments. This offers a better assessment of how different legal frameworks and regulations impact the effectiveness and ethics of AI technology implementation.

AI REGULATION IN SERBIA, LATVIA, AND THE EU

This chapter examines the legal and financial aspects of AI regulation in Serbia, Latvia, and the EU, focusing on the harmonisation of legal norms, risks in the financial sector, and the impact on market participants, legislators, and the economy. The AI Act, which entered into force on 1st August 2024, is the world's first comprehensive legal framework for AI and classifies AI systems based on risk categories (unacceptable, high, limited, and minimal). High-risk systems, especially

those used in finance, law enforcement, or employment, must comply with strict transparency, data governance, and human oversight requirements. Still, the GDPR continues to play a key role in regulating data collection, consent, and privacy in AI operations, while its application significantly transforms the future of capital markets, banking, insurance, and fintech companies by introducing numerous innovations and changes. The AI Act's entry into force marked a significant milestone, setting global standards for the responsible application of AI technologies (EUR-lex 2021; European Commission 2024). In Serbia, Latvia, and the EU, the development of the legal framework for AI applications, especially in the financial domain, is evolving in accordance with the unique characteristics of each jurisdiction while taking into account common European guidelines and national strategies.

AI Regulation in Serbia

In Serbia, the AI legal landscape is shaped by efforts to support digital transformation and align it with EU standards. The country has adopted a Law on Personal Data Protection modelled after the GDPR (Zakon o zaštiti podataka o ličnosti 2018). In practice, many institutions, particularly small and medium-sized enterprises, face challenges in implementing these laws due to a lack of employee training, technical resources, and high compliance costs. The lack of clearly defined responsibilities for supervision and implementation of the laws creates uncertainty and can slow down progress in the application of AI technologies.

Serbia also has a National Strategy for the Development of Artificial Intelligence, which includes goals such as promoting AI innovation, building human capacities, and ensuring the ethical use of AI (Government of the Republic of Serbia 2024). A key element of this strategy is the introduction of a regulatory sandbox designed to facilitate the experimental validation of innovative AI solutions in a controlled environment without the requirement for prior registration or licensing. This regulatory innovation has significantly contributed to the accelerated development and rigorous evaluation of novel business models, especially in the field of payment services. Smart cities in Serbia increasingly integrate AI to enhance the efficiency and sustainability of urban infrastructure. Belgrade uses AI for traffic optimisation and air quality monitoring, while Novi Sad utilises AI

in the management of public transport and parking systems. Niš has implemented intelligent lighting and AI-supported security systems. A new Strategy for the Development of AI for the period 2025–2030 focuses on the legislative framework, expanding educational capacities, advancing digital infrastructure, and promoting the integration of AI technologies into the public sector (Vlada Republike Srbije 2025). Additionally, Serbia is a member of the Global Partnership on Artificial Intelligence (GPAI), underscoring its strategic commitment and active engagement in the global discourse on AI development and application. Lilkov warns that AI can also be weaponized in hybrid warfare and influence operations, making robust EU coordination essential (Lilkov 2021). Countries worldwide invest in AI development, while Serbia is working on strategies for the responsible application of this technology, emphasising the need for international cooperation to establish norms and avoid undesirable effects (Luknar 2025). As Hildebrandt emphasises, legal frameworks must evolve together with emerging technologies to preserve fundamental rights and democratic principles (Hildebrandt 2015).

The development of technical infrastructure, alongside continuous education and the engagement of highly qualified professionals, forms the foundation for the operational implementation of AI solutions. Interdisciplinary approaches that combine regulatory, technological, and financial aspects are crucial for the successful implementation of AI in Serbia. Strengthening the judiciary and inspection bodies is key to protecting rights, ensuring fiscal stability, and boosting AI investment.

The Government of the Republic of Serbia's Strategy for the Development of Artificial Intelligence for the period 2025–2030 explicitly emphasises the need for continuous evaluation of the economic and social effects of AI technology implementation, thereby ensuring the sustainability and functionality of AI systems in line with global development trends (Vlada Republike Srbije 2025). This approach confirms Serbia's commitment to developing an AI sector grounded in legality, efficiency, and transparency, which are fundamental prerequisites for long-term social and economic prosperity. Ethical aspects of the development and application of AI have been further emphasised through the official document "Ethical guidelines for the development, application, and use of trustworthy and responsible artificial intelligence" (Government of the Republic of Serbia 2023). Serbia established a working group for drafting the AI Act, systematically preparing to align

with the EU regulatory framework while simultaneously considering the specificities of the domestic legal and economic context (Nacionalna platforma za veštačku inteligenciju 2024).

AI Regulation in Latvia

The issue of artificial intelligence has been in the sights of Latvian society and the Latvian government for several years. Undoubtedly, over time, the focus of attention of Latvian political leaders is being refined in accordance with current developments. If initially the emphasis was placed on smart technologies in order to convince a wide number of Latvian residents that they have not only become necessary in the world of today and tomorrow, but that they are even a desirable tool for the development of human abilities, then later attention was paid to practical solutions and regulatory frameworks (Levits 2019). When preparing the planning document "Digital Transformation Guidelines for 2021–2028," Latvia identified the implementation of AI solutions as one of the priorities of public administration. Latvia's national regulation in the field of AI, in the context of EU regulation, is mainly focused on managing potential risks as stated in the Latvian information report "On the development of artificial intelligence solutions" (Republic of Latvia 2020). The growth of AI systems will create several new challenges in the area of legal regulation. In the future, AI systems will make increasingly complex and responsible decisions (Likumi.lv 2023). This means that a fundamental issue of AI legal regulation in Latvia is liability for incorrect, harmful, or illegal actions (actions or inactions) performed by an AI-driven system in a process where no human was involved. For example, if a train derails during a journey and people suffer, then the owner of the train or tracks is liable, depending on where the technical failure occurred. In the case of AI-driven systems, there will be disagreements about who is liable, because the owner receives an already trained system from the manufacturer and is not always competent in the technical complexities of AI. On the other hand, AI systems are often "trained" continuously; the owner of the AI system himself continues to "train" the system and adapt it to specific conditions. Service companies can also make changes to the AI system. If an AI-driven car causes damage, then improvements to the regulatory framework may be necessary to determine who is at fault, whether it is the manufacturer, service provider, owner, or user, depending on the

degree of autonomy of the car. The more neural layers an AI system has and the larger the data set from which the system is trained, the more impossible it is to determine why the AI system has made one decision or another. There are situations when accidents cannot be avoided; the only question is: who becomes the victim? For example, while trying to avoid a collision with a person running down the street, a car can drive into a ditch and cause harm to the passengers.

The AI system will also have to decide on the least harm, for example, in the case of rescue drones, when the system will have to decide which of the drowning people to save first, taking into account that the others may drown. One of the evaluation criteria could be the chance of a drowning person surviving. In public services, AI tools will also make more and more decisions that could lead to direct losses for private individuals. For example, AI may refuse a construction permit for a formal reason, although a person would never have made such a decision. In such processes, at least initially, it is mandatory for a person to be involved in verifying the answer. The main requirements regarding the safety of goods and services and liability for their defects in Latvia are stipulated in the Law on the Safety of Goods and Services and the Law "On Liability for Defects in Goods and Services" (Likumi.lv 2004).

At the national scale, it has been assessed that Latvia is unlikely to rival major global powers such as the United States or China in the broad development of artificial intelligence. Nevertheless, Latvia holds the potential to excel as a frontrunner in particular AI applications. The country's principal competitive edge resides in its capacity to swiftly deploy AI solutions within both the private sector and governmental institutions, enabling more rapid innovation and implementation. Therefore, AI skills should be acquired not only by ICT specialists, but also by a wider range of users and managers (Likumi.lv 2023).

AI development strategies in Latvia impact sectors like defense, crime prevention, culture, traffic, justice, finance, construction, agriculture, and environmental protection. AI aids in social network monitoring, accident prevention, criminal identification, resocialization, research, and analysis. It also supports investment planning, combats disinformation, and improves business and government processes. A key priority is promoting the Latvian language and cultural data in AI solutions. The Latvian National Terminology Portal, developed by the State Language Centre, the Terminology Commission, and the Centre for Cultural Information Systems, provides sector-specific terminology to

support AI implementation and capacity building in public administration (Likumi.lv 2023).

The goal of Latvia's AI Development Law is to integrate the Latvian language into AI, create an AI ecosystem, and establish a legal framework for collaboration between the public sector, private sector, and universities. It aims to foster innovation, promote AI initiatives aligned with national interests, ensure equal access to AI, and ensure ethical, responsible, and human rights-respecting AI use (Government of Latvia 2025). AI provides the opportunity to learn from users' experience in communicating with public administration and predict what services, in what order (including services provided by different institutions) may be needed by a particular person or company, depending on their socioeconomic profile and life situation.

Within the framework of the project "Development of a Virtual Assistant Platform," Latvia continues to develop a virtual assistant platform, which can be used and integrated into its solutions by any public administration institution, where information and other services are provided to individuals and legal entities. For some objects, for example, structures with great cultural and historical value, state and municipal objects, mandatory submission of documents in machine-readable format may be established.

In Latvia, AI is increasingly being used in law firms. Significant issues related to artificial intelligence arise in the areas of intellectual property and copyright, freedom of expression, scientific and artistic creativity, freedom of information, and freedom of the press. For several years now, the world's largest media outlets have been using artificial intelligence to create their content, and this has recently been happening in Latvia as well.

On May 16, 2024, the E-Case Supervisory Council decided to integrate the Competition Council, Insolvency Control Service, and Corruption Prevention Bureau into a unified E-Case system, improving investigation and judicial processes in Latvia (Jurista Vārds 2024). This project is part of the EU Recovery Fund Plan, which supports green and digital economy transitions and crisis recovery. AI is already being used in Latvia's anonymization tool to speed up document processing and reduce manual work (Jurista Vārds 2024). Latvia's role in implementing the EU AI Act and accessing EU funding mechanisms the EU Artificial Intelligence Act is designed to safeguard fundamental rights, democratic principles, the rule of law, and environmental sustainability against the

risks posed by high-risk AI systems. Simultaneously, it seeks to foster innovation and position Europe as a global leader in the development and regulation of artificial intelligence technologies (European Parliament 2023). Latvia's role in the implementation of the Act is mainly related to putting the solutions envisaged in the Act into practice (prohibited uses; exceptions for law enforcement; obligations regarding high-risk AI systems; transparency requirements; measures to support innovation and SMEs, etc.).

AI can provide significant competitive advantages and drive positive outcomes for society and the environment. In addition, AI drives innovation, and its application increases productivity. Focusing on AI will deliver economic benefits and solutions in healthcare, education, public safety, national defence, etc. (Anotācija – Valsts kanceleja 2024).

The Law on the Artificial Intelligence Center in Latvia, effective March 20, 2025, aims to establish an AI ecosystem and a legal framework for cooperation between the public and private sectors, as well as universities. It defines the purpose, structure, tasks, rights, financing, and fund usage of the "Artificial Intelligence Center" foundation (Likumi.lv 2025). The Artificial Intelligence Centre promotes AI use across sectors, coordinates projects, and secures funding. It identifies AI security risks, advises on AI in elections, raises awareness on AI skills, and addresses human rights and democracy risks. The Centre supports Latvian language inclusion, organizes training data, and ensures a regulatory environment for AI development. Latvia places strategic importance on accessing EU funding mechanisms, particularly under the 2021–2027 programming period. The digitalization of higher education institutions is being assessed in line with the Common Provisions Regulation governing ERDF, ESF+, the Cohesion Fund, EMFAF, and other internal security and migration instruments. Targeted funding is essential for pilot projects testing innovative e-governance solutions. Cross-border data harmonisation and exchange are essential for effective AI training due to limited national data. Additional funding could support the development of tools to detect systemic corruption, such as repeated procurement victories by politically connected firms.

AI Regulation in the EU

In 2024, the European Union adopted Regulation (EU) 2024/1689, commonly referred to as the Artificial Intelligence Act (AI Act), thereby establishing the world's first comprehensive legal framework for regulating AI systems (Regulation 2024/1689). There is a high importance in regulation that stimulates digital transformation while simultaneously taking into account ethical and social aspects (Dejanović 2024a). High-risk AI systems, including those used in medical devices, education, employment, and law enforcement, must comply with stringent standards encompassing risk assessment, data quality, human oversight, and cybersecurity measures. The regulation explicitly prohibits unacceptable-risk AI systems, such as social scoring technologies and those designed for behavioral manipulation. The European Artificial Intelligence Office oversees enforcement, with penalties up to €35 million or 7% of global turnover (White & Case 2025).

In March 2025, the third draft of the Code of Good Practice for General-Purpose AI models was published, providing guidelines on transparency, copyright, and risk mitigation. The AI Act applies extraterritorially across all sectors (European Commission 2025a). On 9 April 2025, the European Commission introduced the "European AI Action Plan," focusing on infrastructure, data access, sectoral AI promotion, skill development, and streamlined regulation through a new AI Act Support Office. The regulation also introduces specific standards for general-purpose AI systems to ensure safe deployment. The AI Act is part of a broader regulatory framework, including the Digital Operational Resilience Act (DORA) and the Markets in Crypto-Assets Regulation (MiCA), which enhance digital and financial sector resilience. The European Central Bank highlights risks like herd behaviour and cyber-attacks, calling for continuous supervision. The Act has phased implementation, running from 2025 to 2027, with countries like Latvia and Serbia actively aligning their national strategies (European Commission 2025b).

Gstrein, Haleem, and Zwitter criticise the Act for its lack of clarity and inadequate regulatory mechanisms for managing powerful AI models. They suggest more defined transparency and risk protocols, converting the AI Office into an independent entity, consolidating advisory bodies, and enhancing coordination within the EU. They warn that the Act risks being symbolic without these improvements

and suggest embedding adaptive governance mechanisms to address emerging challenges (Gstrein, Haleem, and Zwitter 2024).

The AI Act aims to balance innovation, safety, and fundamental rights protection. Its success depends on clear definitions, consistent enforcement, adaptive governance, and ongoing stakeholder collaboration. At the European Systemic Risk Board (ESRB) conference in Brussels (March 2025), regulators emphasised the importance of robust AI oversight in finance, acknowledging AI's efficiency benefits but also its systemic risks. The adoption of AI and ICT in SMEs is very important because it significantly boosts competitiveness and economic growth (Dejanović 2024b). The conference called for joint efforts among regulators, banks, and tech firms to develop standards for AI risk management, particularly in automated decision-making and algorithmic trading. Transparency, accountability, and AI professional training were also stressed to minimize negative impacts (Lagarde 2025).

LEGAL AND FINANCIAL CHALLENGES IN AI REGULATION

Artificial intelligence drives economic growth by optimising processes and enabling innovation across sectors (Dejanović 2023). However, the increasing autonomy of AI systems raises unresolved legal questions, particularly around liability. Traditional frameworks based on human accountability are insufficient, prompting calls for new legal models that distribute responsibility across developers, manufacturers, and users to ensure legal clarity and accountability. Effective regulation demands institutional adaptation, including the establishment of specialised bodies such as AI offices, regulatory boards, and expert panels at both national and EU levels (Novelli *et al.* 2024). Transparency and explainability are becoming critical components of regulatory design, given the opacity of complex algorithms. In the financial sector, the S.A.F.E. framework focusing on sustainability, accuracy, fairness, and explainability has been proposed to assess the reliability of AI models (Giudici and Raffinetti 2023).

The EU AI Act frames AI as a cross-sectoral technology, which complicates its regulatory enforcement. Aligning horizontal technical standards with sector-specific responsibilities remains a challenge, particularly regarding fundamental rights protection. Given the pace of technological change, regulatory learning must be continuous. The

concept of a "regulatory learning space" where regulators, industry, and academia exchange knowledge is emerging as a core principle for adaptive governance. Open data initiatives at the EU level can further support transparency and informed oversight (Lewis *et al.* 2025).

Financially, the cost of compliance is significant, especially for SMEs. Obligations related to transparency, risk assessment, and rights protection increase operational burdens (Dejanović 2025). Thus, flexible legal tools such as regulatory sandboxes, adaptive clauses, and ethical guidelines like the OECD AI Principles are essential to balance innovation with safeguards. Finally, legal certainty, interdisciplinary collaboration, and international coordination are key to addressing the legal and financial risks posed by AI. Programs such as the EU's AI Literacy initiative aim to enhance public understanding, while scholars emphasise the urgent need for robust compensation mechanisms and transparent liability structures in high-risk sectors like finance (Mirishli 2025).

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Мирјана Дејановић*

Факултет за пројектни и иновациони менаџмент „Проф. др Петар Јовановић”, Универзитет Едуконс, Београд

Анатолијс Кривинс**

Одељење за право, науку о менаџменту и економију, Универзитет Даугавпилс, Летонија

ПРАВНА И ФИНАНСИЈСКА РЕГУЛАТИВА ВЕШТАЧКЕ ИНТЕЛИГЕНЦИЈЕ У СРБИЈИ, ЛЕТОНИЈИ И ЕУ

Резиме

Вештачка интелигенција (ВИ) све више постаје интегрални део различитих привредних сектора, с посебним фокусом на финансијску индустрију која предводи технолошке трансформације кроз примену ВИ у процесима као што су оцена кредитне способности, откривање превара, моделовање ризика и пружање персонализованих финансијских услуга. Овај тренд намеће потребу за успостављањем робусних правних оквира, етичких стандарда и финансијске одрживости, нарочито у погледу заштите корисника, транспарентности алгоритама, сигурности и одговорности за штетне последице. У овом раду се пружа детаљна компаративна анализа регулаторних оквира за вештачку интелигенцију у Републици Србији, Летонији и Европској унији (ЕУ), са циљем оцене њихове ефикасности, идентификације заједничких изазова и разматрања стратешких одговора у оквиру различитих правних, институционалних и социоекономских оквира. Применом мултидисциплинарне квалитативне методологије која обједињује нормативно-правну анализу, економску оцену и етичке димензије омогућена је свеобухватна анализа кључних елемената у процесу усклађивања регулаторног оквира Републике Србије са стандардима Европске уније, анализа имплементације регулативе о вештачкој интелигенцији у

* Имејл: mirjana.dejanovic@pmc.edu.rs; ORCID: 0000-0003-3369-331X
** Имејл: anatolijs777@gmail.com; ORCID: 0000-0003-1764-4091

Републици Летонији, као и разумевање шире правне архитектуре ЕУ, која обухвата Закон о вештачкој интелигенцији (*AI Act*) и Општу уредбу о заштити података (*GDPR*). Главни резултати истраживања указују на заједничке правне изазове, попут питања одговорности, транспарентности, заштите података и флексибилности регулаторних оквира у условима убрзаног развоја ВИ технологија. Са финансијског аспекта, посебно се истичу изазови везани за трошкове усклађивања које сносе мала и средња предузећа, сложеност расподеле одговорности и фискални притисак на надзорне институције. Фрагментација регулативе представља значајну препреку за прекограничне иновације и функционалну тржишну интеграцију. Закључци рада садрже препоруке за унапређење регулаторне хармонизације, финансијске одрживости и етичког надзора, са циљем подстицања одрживе интеграције ВИ технологија која омогућава уравнотежен иновативни развој и заштиту друштвених интереса на глобалном нивоу.

Кључне речи: вештачка интелигенција, правна регулатива, финансијска регулација, етика, Србија, Летонија, Европска унија

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