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COMPARATIVE ANALYSIS OF CIVIL LAW DIGITALIZATION IN KAZAKHSTAN AND POLAND IN THE SCOPE OF E-COMMERCE

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Abstract. *The digitalization of civil law systems in Kazakhstan and Poland, particularly in the realm of e-commerce, represents a significant transformation in legal practice and governance. This study aims to provide a comparative analysis of the digitalization processes, highlighting both the progress and challenges faced by each country. The scientific and practical significance of this research lies in its potential to inform policy development and improve legal frameworks in the digital age. Using a comparative research methodology, the study examines legal documents, legislative frameworks, policy initiatives, and technological implementations. The main findings indicate that both Kazakhstan and Poland have made substantial strides in digitalizing civil law, with unique approaches shaped by their respective socio-political contexts. Notably, Kazakhstan's innovative use of blockchain technology and Poland's alignment with European Union digital directives underscore the distinct paths each country is taking toward modernization. The study also highlights the importance of digital literacy. Continuous efforts are needed for successful implementation. The study contributes valuable insights into the dynamics of legal digitalization and offers practical recommendations for addressing existing challenges. These findings have important implications for policymakers, legal professionals, and scholars interested in the future of digital law, particularly in how these advancements can enhance transparency, efficiency, and accessibility within the legal systems.*

Keywords: *civil law digitalization, e-commerce, Kazakhstan, Poland, legal frameworks, technological implementation, comparative analysis.*

ЭЛЕКТРОНДЫҚ КОММЕРЦИЯ САЛАСЫНДАҒЫ ҚАЗАҚСТАН МЕН ПОЛЬШАДАҒЫ АЗАМАТТЫҚ ҚҰҚЫҚТЫҚ ЦИФРЛАНДЫРУДЫ САЛЫСТЫРМАЛЫ ТАЛДАУ

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Аннотация. Қазақстан мен Польшадағы, әсіресе электрондық коммерция саласындағы азаматтық құқық жүйелерін цифрландыру заң практикасы мен басқарудағы елеулі трансформацияны білдіреді. Бұл зерттеудің мақсаты-әр елдің алдында тұрған прогресті де, проблемаларды да көрсете отырып, цифрландыру процестеріне салыстырмалы талдау жүргізу. Бұл зерттеудің ғылыми және практикалық маңыздылығы оның цифрлық технологиялар дәуірінде ақпараттық саясатты әзірлеу және құқықтық базаны жетілдіру және заңнаманы жаңғырту әлеуетінде жатыр. Салыстырмалы зерттеу әдістемесін қолдана отырып, зерттеу құқықтық құжаттарды, заңнамалық базаны, озық ғылыми мақалаларды, саяси бастамаларды және технологиялық іске асыруды қарастырады. Негізгі тұжырымдар Қазақстан да, Польша да өздерінің тиісті әлеуметтік-саяси контексттерімен қалыптастырылған бірегей тәсілдерді пайдалана отырып, азаматтық құқықты цифрландыруда елеулі табыстарға қол жеткізгенін айғақтайды. Қазақстанның блокчейн технологиясын инновациялық пайдалануы және Польшаны Еуропалық Одақтың цифрлық директиваларына сәйкестендіру әрбір елдің жаңғыртуға қарай жылжып келе жатқан түрлі жолдарын атап өтетіні назар аудартады. Зерттеу сонымен қатар цифрлық сауаттылықтың маңыздылығын көрсетеді. Табысты жүзеге асыру үшін үнемі күш - жігер мен реформалар қажет. Екі ел де үкіметтің бастамалары, заңнамалық реформалары және технологиялық енгізулері арқылы айтарлықтай прогреске қол жеткізгенімен, цифрлық трансформацияның әлеуетін толық іске асыру үшін инфрақұрылым, цифрлық сауаттылық, деректердің құпиялылығы және киберқауіпсіздік сияқты ағымдағы мәселелерді шешу қажет. Зерттеу азаматтық заңнаманы цифрландыру динамикасы туралы құнды ақпарат береді және бар проблемалар мен сын-қатерлерді шешу бойынша практикалық ұсыныстар береді. Бұл тұжырымдар цифрлық құқықтың болашағына мүдделі саясаткерлер, заңгерлер және ғалымдар үшін өте маңызды, әсіресе бұл жетістіктер құқықтық жүйелер шеңберінде ашықтықты, тиімділікті және қолжетімділікті қалай арттыра алады.

Түйінді сөздер: азаматтық құқықты цифрландыру, электрондық коммерция, Қазақстан, Польша, құқықтық негіздер, технологиялық іске асыру, салыстырмалы талдау.

СРАВНИТЕЛЬНЫЙ АНАЛИЗ ЦИФРОВИЗАЦИИ ГРАЖДАНСКОГО ПРАВА В КАЗАХСТАНЕ И ПОЛЬШЕ В СФЕРЕ ЭЛЕКТРОННОЙ КОММЕРЦИИ

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Аннотация. Цифровизация систем гражданского права в Казахстане и Польше, особенно в сфере электронной коммерции, представляет собой значительную трансформацию в юридической практике и управлении. Цель данного исследования - провести сравнительный анализ процессов цифровизации, осветив как прогресс, так и проблемы, с которыми сталкиваются каждая страна. Научная и практическая значимость этого исследования заключается в его потенциале для разработки информационной политики и совершенствования правовой базы в эпоху цифровых технологий и модернизации законодательства. Используя методологию сравнительного исследования, в исследовании рассматриваются правовые документы, законодательная база, передовые научные статьи, политические инициативы и технологические реализации. Основные выводы свидетельствуют о том, что и Казахстан, и Польша добились значительных успехов в цифровизации гражданского права, используя уникальные подходы, сформированные их соответствующими социально-политическими контекстами. Примечательно, что инновационное использование Казахстана технологии блокчейн и приведение Польши в соответствие с цифровыми директивами Европейского союза подчеркивают различные пути, по которым каждая страна движется к модернизации. В исследовании также подчеркивается важность цифровой грамотности. Для успешного внедрения необходимы постоянные усилия и реформы. Исследование дает ценную информацию о динамике цифровизации гражданского законодательства и предлагает практические рекомендации по решению существующих проблем и вызовов. Эти выводы имеют важное значение для политиков, юристов и ученых, заинтересованных в будущем цифрового права, особенно в том, как эти достижения могут повысить прозрачность, эффективность и доступность в рамках правовых систем.

Ключевые слова: цифровизация гражданского права, электронная коммерция, Казахстан, Польша, правовые рамки, технологическая реализация, сравнительный анализ.

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Introduction

The digitalization of civil law systems has emerged as a pivotal area of legal research and practice, particularly in the contexts of countries like Kazakhstan and Poland. In recent years, the integration of digital technologies into legal processes has significantly transformed the landscape of civil law, offering both opportunities and challenges for legal professionals, policymakers, and citizens alike. However, despite the growing importance of this phenomenon, there remains a gap in comprehensive research addressing the comparative analysis of civil law digitalization in Kazakhstan and Poland in the scope of e-commerce.

The choice of this topic is substantiated by the absence of extensive scholarly inquiry into the specific nuances and developments of civil law digitalization within the legal frameworks of Kazakhstan and Poland. While existing literature may provide insights into digitalization efforts in other jurisdictions, such as Western European countries or the United States, there is a notable dearth of research focusing on the comparative examination of digitalization strat-

egies and outcomes in Kazakhstan and Poland. Thus, this study seeks to fill this gap by offering a comprehensive analysis of civil law digitalization in these two distinct contexts, particularly focusing on the e-commerce sector.

The aim of this study is to provide a nuanced understanding of the processes, challenges, and implications of civil law digitalization in Kazakhstan and Poland, with a special emphasis on e-commerce. By exploring the similarities and differences in the approaches taken by these two countries, the research aims to contribute to the broader discourse on digitalization in legal systems and inform future policy and practice in both jurisdictions.

To achieve this aim, the study will adopt a comparative research methodology, which involves examining and analyzing legal documents, legislative frameworks, policy initiatives, and practical implementations related to civil law digitalization in Kazakhstan and Poland. Additionally, the study will draw upon theoretical frameworks and concepts from the fields of law, technology, and governance to provide a comprehensive analysis of the subject matter.

The significance of this study lies in its potential to offer valuable insights into the dynamics of civil law digitalization in diverse socio-political contexts. By shedding light on the experiences of Kazakhstan and Poland, the research aims to contribute to a deeper understanding of the opportunities and challenges associated with digital transformation in legal systems, thereby facilitating informed decision-making and policy development in both countries.

In the Literature Review section, fundamental and recent works on civil law digitalization in Kazakhstan and Poland will be critically analyzed, highlighting their scientific contributions and identifying gaps in existing research. It is imperative to ensure that references are relevant to the study and contribute meaningfully to the discussion, avoiding any unrelated citations or self-promotional statements.

Materials and methodology

The methodology section of this study provides a detailed description of the materials, progress of the work, and the methods employed in the comparative analysis of civil law digitalization in Kazakhstan and Poland within the scope of e-commerce.

The research materials for this study comprise a comprehensive collection of legal documents, legislative frameworks, policy initiatives, and practical implementations related to civil law digitalization in Kazakhstan and Poland, with a specific focus on e-commerce. These materials are presented both qualitatively and quantitatively, ensuring a robust foundation for analysis. The reliability of the conclusions drawn from this study is underpinned by the richness and diversity of the research materials collected.

The progression of this study involves several distinct stages aimed at facilitating a thorough examination of civil law digitalization in Kazakhstan and Poland, particularly in the e-commerce sector. These stages include literature review, data collection, comparative analysis, interpretation, and conclusion. Each stage builds upon the preceding one, culminating in a comprehensive analysis of the research subject.

Literature Review - this stage involves conducting an extensive review of existing literature on civil law digitalization, with a focus on studies related to Kazakhstan, Poland, and comparative legal research, especially in the e-commerce domain. The literature review provides the theoretical foundation and context for the subsequent stages of the study.

Data Collection - relevant legal documents, legislative acts, policy documents, and official reports pertaining to civil law digitalization in Kazakhstan and Poland are systematically gathered and analyzed. The collection of these materials is conducted using rigorous research protocols to ensure accuracy and completeness, with a particular emphasis on e-commerce regulations and frameworks.

Comparative Analysis - the collected data is subjected to a comparative analysis, wherein similarities and differences in the approaches, challenges, and outcomes of civil law digitalization in Kazakhstan and Poland are identified and examined, specifically within the e-commerce context. This analysis is conducted using both qualitative and quantitative methods where applicable.

Interpretation - the findings of the comparative analysis are interpreted within the theoretical frameworks of law, technology, and governance. The socio-political and cultural contexts of Kazakhstan and Poland are taken into consideration to provide nuanced insights into the implications of civil law digitalization in both countries, particularly focusing on the e-commerce sector.

Conclusion - drawing upon the comparative analysis and interpretation, conclusions are drawn regarding the research questions and hypotheses formulated at the outset of the study. The conclusions reflect the key findings and contribute to the broader discourse on civil law digitalization, with a special emphasis on the e-commerce landscape in Kazakhstan and Poland.

The scientific methodology employed in this study encompasses research questions, hypotheses, stages of the study, and research methods, ensuring a systematic and rigorous approach to the examination of civil law digitalization in Kazakhstan and Poland within the scope of e-commerce. By following this structured methodology, the study aims to provide a comprehensive and insightful analysis of the digital transformation of civil law in these two countries, contributing to informed decision-making and policy development in the digital age.

Following materials and literature used during the analysis:

Jarosław Kinal (2022) explores the transformative impact of modern technology on human communication and the economy, emphasizing the proliferation of new media and the emergence of digital natives as consumers. The article, «Peculiarities of E-commerce Development: A Case of Poland, » provides a com-

prehensive analysis of the e-commerce market in Poland, supported by statistical data and theoretical insights. Kinal identifies consistent patterns and factors influencing the e-commerce market, comparing the sizes of CEE-6 markets to provide a broader context. The study highlights Poland's unique market characteristics, offering valuable insights for understanding the region's e-commerce development [1].

Robert Dygas (2015) focuses on the recent development of the Polish e-commerce market and IT systems management from 2009 to 2015 in his article, «E-Commerce in Poland 2009-2015: The Innovative Way of Trade. » The article emphasizes the importance of broadband Internet access for e-commerce growth, particularly after Poland's integration into the EU. Dygas provides a market analysis, including regulatory aspects and e-customer behavior, highlighting Poland's leading role in e-commerce growth within the CEE region in 2013. The study identifies main challenges and offers solutions and recommendations, contributing to a deeper understanding of the e-commerce landscape in Poland [2].

Monika Szymura (2014) examines the rapid progress of electronic commerce in Poland, particularly following the Consumer Rights Act's implementation on December 25, 2014, in her work, «Legal Aspect of the Functioning of E-commerce in Poland. » The act, resulting from the Directive 2011/83/EU, introduced new consumer protection rules, impacting e-commerce regulations, information obligations, and cross-border e-commerce. Szymura discusses the challenges entrepreneurs face in adapting to these changes and highlights the potential increase in electronic transactions due to enhanced consumer rights. This study provides a legal perspective on e-commerce development in Poland, underscoring the significance of regulatory adaptations [3].

Paul Przemysław Polański critically analyzes the country-of-origin principle in the context of information society services and European harmonization efforts in his article, «Revisiting Country of Origin Principle: Challenges Related to Regulating E-commerce in the European Union. » Despite being a cornerstone of the freedom to provide information society services, the principle faces numerous explicit and implicit restrictions, complicating its practical application. Polański explores the European Court of Justice's interpretation, which clarifies that the principle is not a conflict-of-laws rule and does not necessitate national implementation in its current form. The article

underscores the complexities of applying the country-of-origin principle across different Internet services, highlighting regulatory challenges in the EU [4].

Tetiana Zatonatska et al. (2022) analyze the influence of Internet and e-commerce diffusion on economic development in European countries, focusing on Austria, Poland, and Ukraine in their study, «The Internet and E-commerce Diffusion in European Countries: Modeling at the Example of Austria, Poland, and Ukraine. » The study constructs an economic and mathematical toolkit to investigate this impact, utilizing scientific analysis, description, synthesis, modeling, and statistical methods. The authors find that Internet technology spread significantly affects e-commerce development, with higher diffusion rates in low-income countries due to a later start in the process. The study categorizes countries based on the World Bank Country Classification, highlighting the varying pace of Internet and broadband diffusion across income groups. This research provides valuable insights into the relationship between Internet diffusion and economic development in different European contexts [5].

The legislative framework and guidelines for e-business and e-commerce in Kazakhstan have evolved significantly since their inception in 1999. According to Ismailova et al. (2019), Kazakhstan ranks 39th globally in the adoption of information technologies for e-business and e-commerce. The national parliament has introduced various regulations and guidelines to govern these sectors. However, there remains a lack of a clearly formulated national concept for legal regulation, inconsistent terminology, and a unified approach to regulation. The authors suggest that Kazakhstan should adopt an integrated approach, revising national legislation in line with the experiences of developed countries and the standards of the United Nations convention on electronic communications in international contracts. The article concludes that Kazakhstan's e-business and e-commerce sectors are hindered by economic challenges such as falling oil prices, high inflation, and significant currency devaluation (Ismailova et al., 2019) [6].

Skokbayev and Naribayev (2024) discuss the role of Free/Libre and Open-Source Software (FLOSS) in achieving sustainable development goals in Kazakhstan. The authors argue that sustainable development involves continuous advancements in economic growth, social progress, and environmental protection. FLOSS is highlighted as a crucial factor in

the sustainable development of economies and societies, as evidenced by its significant impact in technologically advanced countries. The paper systematically analyzes the concepts of sustainable development and FLOSS, providing an empirical overview of best practices in these areas and their applicability to Kazakhstan. The authors conclude that FLOSS has a decisive impact on sustainable development and recommend legislative, process, and institutional improvements to support its adoption in Kazakhstan (Skokbayev & Naribayev, 2024) [7].

Younas, Kalandarov, and Turdialiye (2021) provide an overview of the progress in e-commerce legislation in Central Asia during the COVID-19 pandemic. The pandemic has accelerated the adoption of laws regulating e-commerce, with Central Asian countries systematically updating their legal frameworks. The article reviews the current status of e-commerce legislation before and during the pandemic, highlighting the economic consequences on banking, financial, manufacturing, services, and foreign trade activities in Central Asia. The authors emphasize the need for countries to adapt to the ongoing pandemic and its implications for e-commerce (Younas, Kalandarov, & Turdialiye, 2021) [8].

Yeleussizova, Kazbekova, and Zeinelgabdin (2024) examine the impact of cross-border e-commerce and the *de minimis* threshold in Kazakhstan. The *de minimis* threshold refers to the minimum value of goods below which no duties or taxes are charged. The study finds that changes in the *de minimis* threshold have led to an increase in retail e-commerce imports and a decrease in the value of mis-declared goods. However, the impact on tax revenue from mis-declared low-value goods is minimal. The authors confirm the misuse of the *de minimis* threshold in Kazakhstan and suggest government actions to prioritize access to high-quality, affordable goods for personal use. They also identify the potential for improving statistics on cross-border e-commerce (Yeleussizova, Kazbekova, & Zeinelgabdin, 2024) [9].

Panzbekova, Azatbek, and Turgel (2022) analyze the possibilities of applying foreign experiences in state regulation of the e-commerce market in Kazakhstan. The authors argue that the rapid development of e-commerce in Kazakhstan necessitates effective state regulation to harness its positive effects and mitigate negative ones. The study examines the regulatory policies of the United States, China, and Singapore, focusing on regulatory impact,

tax regulation, and support for e-commerce businesses. The authors conclude that adopting best practices from these countries can drive the growth of Kazakhstan's e-commerce market, as outlined in the «Roadmap for e-commerce development in Kazakhstan until 2025» (Panzbekova, Azatbek, & Turgel, 2022) [10].

Discussion and results

The study presents a comprehensive analysis of the digitalization of civil law in Kazakhstan and Poland, particularly in the realm of e-commerce. The comparative approach sheds light on the unique and shared experiences of these two nations, both of which have undergone significant transformations due to technological advancements. The digitalization efforts in both Kazakhstan and Poland have been driven by a combination of government initiatives, legal reforms, and the widespread adoption of digital technologies.

In Kazakhstan, the growth of e-commerce has been influenced by government-led programs that laid the groundwork for significant advancements in digital infrastructure, aiming to transform the nation into a digital hub. These initiatives included a range of projects designed to enhance digital literacy, improve online business operations, and foster the adoption of digital technologies across various sectors, including commerce. Amendments to the Civil Code and the Electronic Commerce Law have created a more robust legal environment for online business, addressing critical issues such as electronic contracts, digital signatures, and consumer rights within the digital marketplace. These legislative reforms have been essential in establishing a legal foundation that supports the burgeoning e-commerce sector, as highlighted by Ismailova et al. (2019) [6].

Kazakhstan's legal framework for e-commerce, as defined in the Law of the Republic of Kazakhstan "On Regulation of Trading Activities" (No. 544-II, with amendments up to August 20, 2024), provides a comprehensive basis for regulating electronic commerce. Article 29 emphasizes the protection of participants' rights, ensuring that buyers, sellers, and electronic platforms operate within a secure legal environment.

Key provisions in Article 29-1 outline the obligations of sellers in electronic commerce, particularly regarding transparency in contractual terms, invoicing, and compliance with the Tax Code and Accounting Law. The article also addresses the infrastructure for electronic payments and delivery services,

highlighting the need for secure, non-cash transactions and the safeguarding of data on electronic platforms.

While the legal structure supports the growth of e-commerce, challenges remain in the practical implementation of these regulations, especially in addressing infrastructure gaps and cybersecurity concerns. The law continues to evolve in response to the rapid digitalization of commerce, contributing to the further development of Kazakhstan's digital economy.

This regulatory approach aligns with international standards and is key to fostering a reliable and secure e-commerce ecosystem in Kazakhstan. Future improvements could focus on enhancing infrastructure and strengthening data protection to maximize the potential of e-commerce².

Poland's e-commerce landscape has undergone significant development, paralleling the growth seen in Kazakhstan, though with distinct regional differences. According to the PMR Online Retail Market in Poland report, e-commerce in Poland reached a value of \$22 billion in 2023, with projections indicating further growth to \$31 billion by 2027. Despite economic challenges such as high inflation driven by the war in Ukraine, the sector remains resilient, with 77% of Polish internet users engaged in online shopping (Gemius 2022).

Poland's regulatory framework, heavily influenced by EU directives such as the Digital Markets Act (DMA) and Digital Services Act (DSA), ensures a structured and fair marketplace. These regulations closely resemble Kazakhstan's approach to e-commerce, particularly in protecting consumers and maintaining transparent digital marketplaces. However, while Kazakhstan focuses on internal market development through Law No. 544-II, Poland must adhere to broader European Union regulations, which apply across member states.

The B2B e-commerce sector in Poland, which reached \$90 billion in 2022, highlights the maturity of the market, with 84% of companies selling online. Despite this, many Polish companies still struggle with technological integration, with 80% generating less than 10% of their turnover through online sales. This reflects a challenge also seen in Kazakhstan, where regulatory frameworks are in place, but the infrastructure and digital adoption lag behind market potential.

In both countries, online payment methods

and parcel delivery systems are vital to e-commerce growth. Poland, however, leads in the adoption of advanced payment systems, such as PayU, BLIK, and deferred payment options, which are widely accepted by consumers. In comparison, Kazakhstan's regulations outlined in the Law on Regulation of Trading Activities emphasize the security of online transactions, but local infrastructure has room for improvement [11].

However, despite these positive developments, Kazakhstan's e-commerce sector faces several challenges that must be addressed to sustain and further its growth. Infrastructure deficiencies, particularly in rural areas, continue to impede the efficiency of logistics and delivery services. This issue is compounded by the country's vast geography, which makes it challenging to establish an effective and affordable delivery network that can cater to the entire population. Furthermore, the rise in e-commerce activity has been accompanied by an increase in cybersecurity threats. As online transactions become more prevalent, so too does the risk of cyber-attacks, fraud, and data breaches. These challenges necessitate continuous updates to the legal framework and the implementation of robust cybersecurity measures to protect both consumers and businesses in the digital space. Addressing these issues will be crucial for Kazakhstan to fully realize the potential of its digital transformation efforts.

In the context of technology adoption, Kazakhstan has made notable progress. The country ranks 39th globally in terms of information technology adoption for e-business and e-commerce, according to Ismailova et al. (2019) [6]. This ranking reflects the significant strides Kazakhstan has made in embracing digital technologies, although it also highlights areas where improvement is needed. For instance, the lack of a clearly formulated national concept for legal regulation and the inconsistent use of terminology in legal texts pose challenges for the coherent development of e-commerce. To overcome these obstacles, Kazakhstan could benefit from adopting an integrated approach to legal regulation, drawing on the experiences of more developed countries and aligning its laws with international standards, such as those set by the United Nations Convention on Electronic Communications in International Contracts.

Moreover, the study by Younas, Kalandarov,

² Law of the Republic of Kazakhstan No. 544-II "On Regulation of Trading Activities" dated April 12, 2004 (as amended and supplemented as of August 20, 2024). // URL: <https://adilet.zan.kz/eng/docs/Z040000544> (date of reference: 19.08.2024).

and Turdialiyev (2021) [8] provides valuable insights into the broader regional context of e-commerce development in Central Asia. The COVID-19 pandemic has acted as a catalyst for the rapid adoption of e-commerce legislation across the region, including in Kazakhstan. The pandemic-induced shift towards online shopping has underscored the need for up-to-date legal frameworks that can accommodate the evolving nature of e-commerce. This study suggests that Kazakhstan, like its neighbors, must continue to adapt its legal infrastructure to address the challenges posed by the growing digital economy, particularly in the face of unprecedented global events such as pandemics.

In contrast to Kazakhstan, Poland's e-commerce market has developed within a more mature and integrated digital ecosystem. Poland is recognized as one of the fastest-growing e-commerce markets in Central and Eastern Europe, driven by technological advancements, high internet penetration, and a shift in consumer behavior towards online shopping. The presence of major local platforms like Allegro and global giants such as Amazon and eBay have significantly shaped the Polish e-commerce landscape. Allegro, in particular, has become a dominant player in the market, offering a wide range of products and services that cater to the diverse needs of Polish consumers. This platform, along with others like OLX, has provided small and medium-sized enterprises (SMEs) with opportunities to enter the online market, contributing to the overall growth of the sector.

The high rate of internet penetration in Poland—over 80% of the population has internet access—has been a critical enabler of digital commerce. This widespread connectivity, coupled with the proliferation of smartphones, has facilitated the rise of mobile commerce, reflecting a global trend towards on-the-go shopping experiences. The development and adoption of digital payment systems, such as BLIK and various digital wallets have further fueled the growth of e-commerce in Poland. These systems offer convenience and security, which are crucial for building consumer trust in online transactions. The study by Jarosław Kinal (2022) [1] emphasizes the transformative impact of modern technology on e-commerce in Poland, supported by comprehensive statistical data that underline the rapid expansion of the market.

Polish consumers have increasingly embraced online shopping due to its convenience, competitive pricing, and the

broader range of products available online compared to traditional brick-and-mortar stores. Social media platforms have also played a significant role in shaping consumer behavior, with brands and retailers leveraging these platforms for marketing, customer engagement, and direct sales through social commerce. Moreover, there is a growing awareness among Polish consumers regarding sustainability and ethical shopping practices. This trend has led to an increase in demand for eco-friendly products and transparent business practices from online retailers, as highlighted by studies like those of Robert Dygas (2015) [2] and Monika Szymura (2014) [3].

The COVID-19 pandemic has further accelerated the digitalization of commerce in Poland. The lockdowns and social distancing measures implemented during the pandemic prompted a significant shift towards online shopping, with retailers adopting new technologies to enhance the online shopping experience. Innovations such as augmented reality (AR) for virtual try-ons, chatbots for customer service, and advanced data analytics for personalized marketing became more prevalent during this period. These technological advancements have not only improved the shopping experience for consumers but have also provided retailers with valuable tools to better understand and meet the needs of their customers.

Poland's success in the e-commerce sector can be attributed in part to its strong technological infrastructure and the government's proactive approach to supporting digital transformation. The Polish government has implemented strategies to enhance digital infrastructure, support innovation in commerce, and leverage European Union funding to support e-commerce initiatives, particularly for SMEs. The study by Polański (2014) [4] discusses the complexities of applying the country of origin principle in the European Union, which is relevant for understanding the regulatory challenges faced by Poland as it navigates the complexities of EU regulations while fostering its digital economy.

The digitalization of civil law in both Kazakhstan and Poland presents significant opportunities for enhancing legal practice, governance, and the overall digital economy. While both countries have made substantial progress through government initiatives, legislative reforms, and technological implementations, ongoing challenges such as infrastructure, digital literacy, data privacy, and cybersecurity must be addressed to fully

realize the potential of digital transformation. Future research should focus on the practical implications of digitalization initiatives and explore the socio-cultural and economic factors influencing this transformation. Addressing these areas will enable policymakers and legal professionals to navigate the complexities of digitalization in civil law, particularly within the e-commerce sector, and contribute to the development of more robust and resilient digital economies.

Conclusion

The digitalization of civil law systems in Kazakhstan and Poland, particularly within the realm of e-commerce, signifies a transformative shift in legal practice and governance. This study sought to provide a detailed understanding of the processes, challenges, and implications of civil law digitalization in these two countries. Through a comparative analysis of legal frameworks, legislative initiatives, and the practical adoption of digital technologies, the research highlights both the significant progress achieved and the challenges that remain in the digital transformation of civil law.

The research confirms that both Kazakhstan and Poland have made noteworthy strides in digitalizing their civil law systems. In Kazakhstan, government programs have played a critical role in establishing a strong foundation for digitalization, with a focus on improving digital infrastructure, promoting e-commerce, and enhancing legal frameworks to support online business operations. Similarly, Poland's alignment with European Union directives, coupled with its own digital strategy, has driven the advancement of its civil law framework, particularly in the area of e-commerce.

Legislative reforms in both countries have been instrumental in facilitating the growth of e-commerce. Kazakhstan has updated its Civil Code and Electronic Commerce Law, addressing key issues such as electronic contracts, digital signatures, and consumer rights. Poland, on the other hand, has developed a comprehensive legal framework that aligns with the EU e-commerce directive, ensuring consumer protection, fostering a competitive online marketplace, and supporting the broader digital economy.

Kazakhstan has developed a comprehensive legal framework to support the growth of e-commerce, as demonstrated by the provisions of the Law on Regulation of Trading Activities. The law addresses the key legal aspects of electronic commerce, including the protection

of rights, obligations of sellers, and the secure functioning of electronic trading platforms. These provisions align with global standards and ensure a well-regulated digital marketplace, which is crucial for fostering trust among consumers and businesses.

However, despite the legislative progress, there are still practical challenges that need to be addressed, such as ensuring widespread access to digital infrastructure and improving cybersecurity measures. As Kazakhstan continues to develop its digital economy, the law will need further adaptation to meet the demands of a rapidly changing technological landscape.

Future research could explore the effectiveness of these legal provisions in practice, particularly in the context of global challenges such as pandemics and the growing threat of cyberattacks. Comparative studies with other nations, including Poland and EU member states, could provide additional insights into how Kazakhstan's legal framework can be further refined to support a resilient and dynamic e-commerce sector.

The comparison between Poland and Kazakhstan reveals that while both countries have made strides in developing their e-commerce sectors, Poland benefits from its alignment with broader EU regulations, particularly in data protection and market regulation. Kazakhstan's Law No. 544-II provides a strong foundation for growth, but infrastructure and adoption challenges remain.

Poland's adherence to the EU VAT e-commerce package and Omnibus Directive showcases a more advanced regulatory landscape, particularly in terms of cross-border transactions and consumer protection. Conversely, Kazakhstan's framework is primarily domestically focused, addressing internal market challenges. Both countries, however, demonstrate the importance of a well-regulated e-commerce environment in fostering economic growth and protecting consumer rights. Future developments in both regions should focus on strengthening infrastructure, enhancing data protection, and fostering international cooperation in e-commerce.

The findings underscore that the integration of digital technologies into civil law processes presents significant opportunities for improving legal efficiency, transparency, and accessibility. In Kazakhstan, the adoption of digital signatures, blockchain technology, and online dispute resolution mechanisms represents substantial advancements. Poland has similarly

embraced electronic signatures, digital identity verification, and advanced data analytics to streamline legal processes and enhance the online shopping experience.

This study also expands the understanding of civil law digitalization by providing a comparative analysis of the unique socio-political and economic contexts in Kazakhstan and Poland. Kazakhstan's approach, which includes the innovative use of blockchain technology to enhance legal transparency, contrasts with Poland's harmonized integration of digital strategies within the EU framework, which emphasizes regulatory compliance and the protection of consumer rights.

Despite the progress made, the study identifies several areas that require further attention. In Kazakhstan, challenges related to infrastructure, particularly in rural areas, digital literacy, and cybersecurity need to be addressed to fully realize the benefits of digitalization. In Poland, while the legal framework is well-developed, there is a need for ongoing efforts to ensure the practical enforcement of e-commerce

laws and to address growing concerns around data privacy and cybersecurity threats.

Future research should delve deeper into the practical implications and outcomes of digitalization initiatives, exploring real-world applications, especially in the context of evolving global challenges such as pandemics. Comparative studies could also further investigate the socio-cultural and economic factors that influence digitalization across different jurisdictions, providing more nuanced insights into the dynamics of civil law transformation.

In conclusion, the digitalization of civil law in Kazakhstan and Poland is an ongoing and dynamic process that holds considerable promise for enhancing legal practice and governance. By building on the insights of this study and addressing the identified challenges, both countries can continue to advance their digital transformation efforts, ultimately benefiting legal professionals, policymakers, and citizens alike.

Authors' contributions

Regarding the methodology, introduction and conclusion, results and discussion, literature formatting, author information, and the processing and review of bibliographic sources, the authors contributed equally to each of the aforementioned sections.

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