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Women's Research in Law and Digital Technologies

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Guest Editor:
Yulia Kharitonova, LL.D.

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Special Edition Guest Editor's Note

Women's Research in Law and Digital Technologies

Dear readers,

I am pleased to greet you on the pages of our journal!

This time, the editorial board dedicates a special issue to women and men discussing women's issues from a legal perspective. This is to support women's research, to provide a platform for colleagues to speak out, and to show what can be achieved in science and law. My colleagues from different countries are presenting their research in different areas of law on the most challenging issues.

I confess that until now I had not thought about how many women can advance the legal profession. Sure, I see lawyers on a daily basis, but it didn't become the focus of my attention. Now I have done some research, and I can say that I have a sense of parity between women and men in the legal profession, thanks to my employer.

The study of the issues of the correlation between the quantitative representation of women and men in the legal profession, as well as the peculiarities of their cultural competences, is not only of keen interest to representatives of the legal profession but also stems from general questions about the gender situation in various fields of human activity.

Vivian López Núñez, one of the authors of this special issue, shows that in Paraguay, the judicial system is dominated by men. In Russia, the situation is somewhat different. According to judicial statistics, the proportion of women in the Russian judiciary is 66%.[1] Moreover, today the Supreme Court is headed by a woman, Irina Podnosova. Women predominate among notaries in Russia. More than 80 per cent of Russian notaries are women.[2] Women also dominate legal education. According to 2021 data, more women than men are involved in the scientific and educational spheres in the Russian Federation. Overall, in higher education institutions, more than 80% of women are involved in education and pedagogical sciences. While in the humanities, the share of women is more than 65%[3].

The unequal representation of men and women in the legal profession is due to various factors, primarily historical, economic and socio-cultural reasons. Although legal work has long been the prerogative of men, the granting of full rights to women has enabled them to become involved in legal work.

For example, Soviet Russia was one of the first countries to legalize gender equality in the early 20th century. After the October Revolution of 1917, women had access to vocational education, jobs, legal

[1] Researchers have studied the gender composition of the Russian judiciary - 66% of seats are occupied by women, https://pravo.ru/news/view/125831/?ysclid=m6v3czd9o5378745282

[2] Information of the notary of Russia, https://minjust.gov.ru/ru/pages/svedeniya-o-notariate-v-rossijskoj-federacii-za-2021-god/

[3] The Ministry of Education and Science told about the ratio of women and men in education, https://ria.ru/20211014/obrazovanie-1754596757.html

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abortion and easy divorce. In the 1990s, Russia also paid a lot of attention to this issue.[4] Of course, there is always room for improvement. Summarizing foreign and Russian experience, N. Shvedova notes, "social practice has revealed the limited, illusory nature of equality and has come into conflict with life itself. The idea of gender equality has not become an organic part of either the culture of society, human rights, or real state policy."[5]

Magdalena Łągiewska's remark that "currently, there is a global stereotype on arbitrators such as 'male, pale and stale'" was very interesting. As far as I can tell, there has been no specific research on how women and men make judgments as judges. This suggests that the design of e-judge algorithms should not take into account how much softer or harsher a judgment should be, as it might seem at first glance. Freeing the AI in court from gender-specific features offers a chance to get a completely impartial judgement in strict accordance with the law.

This discussion is actively initiated by William Manga Mokofe, who, in an article in this special issue, shows the importance of addressing gender disparities and promoting inclusivity in the design and implementation of legal and technological systems.

My personal experience at the Faculty of Law of Lomonosov Moscow State University, as well as academic research, shows that the number of trained female legal professionals is growing faster than that of male lawyers. The growing supply of lawyers, and consequently, the face of the legal profession, is gradually changing.

This allows us to lead projects related to digital jurisprudence (Gergana Varbanova, Elizaveta Zainutdinova), global investment projects (Anna Belitskaya, Yulia Kharitonova), and criminal law assessment in the area of illegal trafficking and use of weapons (Elona Abasalieva).

I thank our authors for supporting the editorial call and sharing their relevant research, and I wish our readers a productive and inspiring reading experience and new ideas!

Best Wishes,

Yulia Kharitonova, LL.D.

[4] For example, Presidential Decree No. 337 of 4 March 1993 on the priority tasks of State policy with regard to women was adopted.
[5] Shvedova, N. A. (2020). Celebrating the anniversary: gender equality issues in UN priorities. Woman in Russian Society, (3), 16-29.

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TECHNOLOGY, AN ALLY TO THE 21ST CENTURY WOMEN: AN ESSAY

Vivian López Núñez
Civil First Instance Judge, Paraguay

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ABSTRACT | 摘要 | RESUMEN

This essay explores how digital technology serves as a powerful ally for women's empowerment in Paraguay, particularly in the legal field. Drawing from the author's experience as the country's first judge to lead a fully digital court process, the text shows how technological tools help women reconcile professional and domestic responsibilities, while promoting greater access, security, and transparency in the justice system. It also highlights the persistent gender inequalities in Paraguay and argues that, while technology is not a cure-all, it can significantly reduce barriers to real equality—if implemented thoughtfully. The essay uses qualitative reflection to underscore how virtual hearings, remote work, and safety-enhancing tools like panic apps or monitoring bracelets offer concrete benefits to women. However, it also warns that unregulated algorithms risk reinforcing discrimination. The essay concludes with a call for responsible use and regulation of technology to ensure it contributes to lasting change for women in all spheres of life.

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1. INTRODUCTION

> "*A vast and powerful new language is being developed for the future use of analysis, into which its principles can be introduced in order to have a more rapid and accurate practical application in the service of mankind*".
>
> Ada Lovelace[1]

2. BEING A WOMAN IN PARAGUAY

I am a woman, I am a judge, I am from Paraguay. We are a little more than six million inhabitants. Exactly half of the population is women, with an average age of 30. We are a young country. In the Supreme Court today, out of 9 members, only one woman represents us. We went backwards; we occupied three places in the past.

In the First Instance – where I belong – we occupy 50% of the seats. And in the Peace Courts, which are all over the country and have exclusive jurisdiction in cases of domestic violence, women are in the majority.

What happens in all the countries of the world, with some notable exceptions, is that women are not the rule in judicial or political decision-making positions; we are still a striking "exception"[2]. Why am I telling you this? First, because I come from a country with a long history of authoritarianism and unequal treatment of its women in all areas from the home, where education continues to relegate women to household matters and men are prevented from learning to manage it, where the traditional role

[1] Augusta Ada King, Countess of Lovelace better known as Ada de Lovelace, was born in London on December 10, 1815, and died on November 27, 1852 at the age of 36. She was the daughter of the poet Lord Byron and his spouse Lady Byron, who separated shortly after their only daughter (Ada) was born. Given her social position, Ada received an exquisite education in music, languages and mathematics. During the years of 1842 and 1843, he devoted himself to translating an article by the Italian military engineer Luigi Menebrea, entitled: The Analytical Machine. But the value of his work is not in the translation itself, but in the notes, he left on it, in which the first algorithm processed by a machine can be found. https://portalfrases.com/frases-de-ada-lovelace/

[2] At this moment in Argentina, they run the risk of not having any female Justice for the next ten or more years, the current president Milei has nominated two men for the next vacancies. Watch AMJA (Argentinian women judges) campaign "More women, more justice" https://www.facebook.com/share/r/THqqgTCeViTW1eQa/

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is still reproduced, that if women work outside the home, they should not neglect their main mission which is to raise children and take care of the home.

Statistics do not lie. There is a huge gap in access to education, which has been dragging on since the 1980s and has not been formally closed. Although today in the universities women are better students and occupy more than 50% of the classrooms, in public and private decision-making positions they remain a minority or nonexistent.

In numbers, 78.5% of women aged 18 and over have suffered some type of gender-based violence at least once in their lifetime. Violence against women is higher among young people between 18 and 29 years of age (86.5%). In the public sphere (work, education and community), sexual violence is the most common type of violence, ranging from the mildest to the most serious forms, such as sexual coercion. Around 63.1% suffered some type of violence in the public sphere throughout their lives.[3]

A country where every year more than 50 women are murdered by their partners, where sexual abuse is almost 75% of girls and where violence, machismo and discrimination are part of everyday life.

Our history can be summarized in two international wars in less than a hundred years - the first one in 1870, which left us only women, children and old people - ten years of foreign occupation, coups d'état, revolutions and autocratic governments are our genetic heritage, being this hostile and harmful scenario for women to get ahead on a par with men, recognized and respected in our rights and capabilities. Even so, we have moved forward, with everything against us, Paraguay exists thanks to its women.[4]

However, despite these sacrifices recognized in literature, in poems and songs honoring women, that is, on paper Paraguayan women had to wait until 1954 to have the right to vote and 1963 for the regulation of their civil rights to administer their own patrimony and marriage, even in a condition of inequality with men.

So with the weight of the history of inequality that we bear, achieving these percentages in the justice system has not been easy. Previous generations have started a long and difficult struggle to achieve

[3] Paraguayan National Institute of Statistics link https://www.ine.gov.py/

[4] ***Residentas*** were the women who, after the war against Paraguay in 1870, oversaw populating the country, giving birth to children of different fathers because the country needed them, working in the fields and in the city of a country in which only children and old people survived.

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legal equality. I firmly believe that only by occupying public and private decision-making positions on an equal basis will we be able to achieve real equality[5]. Only in this way will we be able to guarantee equal access to public and private employment opportunities, achieving a quality of life that guarantees respect for the human rights of all women living in Paraguay.

Today, we are fighting for genuine equality. And how can we achieve it? In many ways and from many fronts. But I am convinced that technology is a great ally of working women. Many times, the good can become bad, and the use of technology can also harm us, but learning to incorporate this tool in our favor is crucial for the advancement of women on equal terms with men in all areas.

Let me tell you my personal experience and how technology was of vital importance in my life and career.

First digital judge

In October 2016, Paraguay implemented the first digital -zero paper- file in the history of Paraguayan Justice. The pilot plan was in the hands of a female judge, the one who speaks to you, and this has changed the way processes are handled, has made them transparent, streamlined and secure.

That old fear of the virtual in the courts, today and even more so after the COVID-19 pandemic, is beginning to be a thing of the past. But why a woman judge? Well, the answer is simple, because as you have seen, women occupy 50% of the positions of judges of first instance in the civil jurisdiction, which increased the chances that a woman would carry out this ambitious project, and thanks to that, I had the honor and the high responsibility to carry it forward and with prudent auspicious success until today.

So, how, you may ask, can this help us achieve real equality? Technology breaks down boundaries and paves paths. As women, we know well what it means to have to concentrate on handling a case and at the same time managing our household, all while using WhatsApp, Telegram, or any other type of instant messaging, and remembering to buy the birthday gift that our son must take to school. We are multiple. We are still fulfilling those roles in the 21st century despite being 50% of the global workforce, and we can do it today, better than our mothers, thanks to technology.

[5] In Paraguay even unpaid domestic and care work is still the responsibility of 92% of women compared to 72% according to data extracted from the report "Uses of time and inequalities in Paraguay" published by the Center for Documentation and Studies in June 2019.

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The electronic docket has allowed me to work from home, whatever time it is, from our phone if necessary and eradicates that obligation - which puts us at a tremendous disadvantage[6] - to be physically at the courthouse for day-to-day paperwork. In my case, the face-to-face hearings, despite the pandemic, found the legitimacy they needed to become virtual, thus transforming the courts into what they should always be: a service, not just a place [2].

The electronic file gives us security, in many ways, since we can control our judicial offices and ensure that our signatures will not be adulterated. Security in that the files, as they were before, cannot be stolen, burned or adulterated.

This helps us to compete on equal terms, or at least it relieves us of the domestic and family burden that most women carry because of social and cultural imposition. We already know that we always have more housework than our male colleagues. For "let's be" honest, whether we are mothers or not, we are still wives, girlfriends, daughters, sisters, aunts or grandmothers and we have more domestic and unpaid care responsibilities than our male colleagues who can close the door of their homes and forget about those obligations that are still not equally shared.

Here I share with you some numbers that tell us in numbers what I have been telling you. This survey was conducted among women lawyers who litigate in courts, and they were asked if virtual hearings had helped them in their task of reconciling work and home life. Over 70% have responded affirmatively and this gives us the guideline that without realizing it, technology in all its expressions, from reading newspapers and keeping us informed to tools for work as meeting platforms, as today we are connecting and seeing each other, has smoothed the path of distance, time, borders, economic cost and helps us to participate in daily life and work on equal terms.

In Paraguay, being a woman and getting ahead is a (real) challenge[7]. I am sure that not only in Paraguay. As I said at the beginning, we move forward and we also move backwards, let's not take our rights or our conquests for granted. Speaking in public is forbidden in Afghanistan right now, where women, just a few years ago, were able to become lawyers and judges and convicted criminals. Today we

[6] As statistics show that women assume the role of caring for other family members (parents, elderly, children, etc.) and domestic work in greater proportion than men.

[7] We have not elected a woman president or a woman president of the congress even in the 21st century when in our region Argentina, Brazil, Bolivia, Chile, Mexico have already achieved it.

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learn about this brutal regression and violation of rights thanks to technology. Let's keep moving forward, even if we are forced to go backwards.

A Spanish saying goes: *"he who fights is not dead".* So, we keep going.

3. CONCLUSION

Let us not be careless, let us learn the lessons of history, and since we live in a world still governed by the patriarchal model, let us use technology with the care and responsibility it deserves. For although technology frees us and cooperates us to break down those standards, as I shared with you my experience with the digital file, it has helped me to be a woman, judge, boss, mother, wife, daughter and friend at the same time, without neglecting any of the roles that we continue to exercise, let's be aware that gender bias and discrimination will not end with technology or AI [3], on the contrary, they will remain in force and very solidly incorporated in the algorithms [1] that today determine what we consume in social networks and even in the not too distant future, how we will decide the judges in courts. We have time to change these patterns and that the technology of the future does not replicate these behaviors of discrimination towards half of the population, but that does not depend on it, it depends on all of us, so that new generations of women continue to move forward thanks to technology and not in spite of it, as has happened so many times in the history of mankind.

The great Víctor Hugo said that the 18th century proclaimed the rights of man, and the 19th century would proclaim those of women. Víctor Hugo was a century wrong because of excessive optimism, but I dare to say that the 21st century belongs to women, and this is largely thanks to our great ally, technology. The technological revolution, like the industrial revolution in its time, changes the world, changes women, changes the law and changes the way we work.

Technology is not just a simple change of speed in the way we work. Technology changes our ways of relating to each other socially. It changes everything and every one of our habits. It has evolved so much that it has "transformed" the paradigm that (we) women had of having to choose between work and family, because today it allows us to reconcile work and family if we learn how to do it in our interest.

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Technology floods our lives in a positive way. In medicine, it allows us to make advances in diseases that only afflict women. It brings us comforts that allow us to compete on equal terms in sports, in science, in military careers, in everything that a woman intends to do and achieve.

At the beginning, we mentioned the cruel reality of violence that women in Paraguay face. technology also protects us. How to? It allows us to use electronic bracelets or anklets to control if the aggressor approaches his victim, and allows us to use applications such as the panic button to give the necessary alarm and save lives.

Ada Lovelace, in the 19th century, bequeathed us the algorithm that allowed the development of today´s technology. She was a woman scientist in a man´s world. Let's not waste the legacy of a visionary and extraordinary woman. It is our obligation and responsibility to incorporate technology into our lives as an ally, rather than seeing it as an enemy, to improve our quality of life and that of all women around the world. And it is the obligation of all of us to use technology responsibly, to regulate it if necessary, so that the next generations of women and men, our children, grandchildren and great-grandchildren, will remember and study the technological revolution as the milestone that allowed real equality without exceptions.

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TECNOLOGÍA, UNA ALIADA DE LAS MUJERES DEL SIGLO XXI: UN ENSAYO

RESUMEN

Este ensayo analiza cómo la tecnología digital actúa como una aliada clave para el empoderamiento de las mujeres en Paraguay, especialmente en el ámbito judicial. A partir de la experiencia de la autora como la primera jueza del país en liderar un proceso judicial completamente digital, el texto muestra cómo las herramientas tecnológicas permiten a las mujeres conciliar las responsabilidades laborales y domésticas, al tiempo que mejoran el acceso, la seguridad y la transparencia en el sistema judicial. También se aborda la persistente desigualdad de género en el país y se argumenta que, si bien la tecnología no es una solución absoluta, puede reducir significativamente las barreras hacia la igualdad real si se implementa con responsabilidad. Mediante una reflexión cualitativa, el ensayo expone los beneficios concretos de audiencias virtuales, el trabajo remoto y dispositivos de protección. Finalmente, se advierte sobre los sesgos en los algoritmos y se propone regular la tecnología para garantizar avances duraderos en los derechos de las mujeres.

Palabras clave: desigualdad de género, empoderamiento de las mujeres, justicia digital, Paraguay, violencia de género, tecnología y sociedad

技术, 21世纪女性的盟友:篇随笔

摘要

本文探讨了数字技术如何成为推动巴拉圭女性赋权的重要力量，尤其在司法领域。作者作为该国首位领导全数字化法院流程的法官，分享了亲身经验，说明科技工具如何帮助女性平衡职业与家庭责任，同时提升司法系统的透明度、安全性与可及性。文章指出，尽管巴拉圭依然存在严重的性别不平等，但科技若被妥善使用，可显著减少女性在追求真正平等道路上的障碍。文章通过反思性分析强调了远程庭审、灵活办公、以及如报警App和电子监控装置等安全技术给女性带来的切实益处。然而，作者也警告，若缺乏监管，算法可能延续或加剧性别歧视。文章最后呼吁以负责任的方式使用并监管技术，使其成为女性争取权利、改善生活条件的有力工具，而非新的障碍

关键词：性别不平等, 女性赋权, 数字司法, 巴拉圭, 性别暴力, 技术与社会

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WOMEN'S ENGAGEMENT IN LAW AND DIGITAL TECHNOLOGIES: AN APPRAISAL

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ABSTRACT | 摘要 | RESUMEN

The intersection of women, law, and digital technologies is a burgeoning area of study with profound implications for societal structures and individual rights. This paper examines the multifaceted relationship between women, legal systems, and digital technologies, exploring the opportunities and challenges presented by the integration of technology into legal frameworks. It investigates topics such as gender biases in algorithmic decision-making, cybersecurity concerns affecting women, legal responses to online harassment and gender-based violence, women's representation in digital law spaces, and the impact of emerging technologies on women's rights and access to justice. By synthesizing existing research and offering insights into future directions, this paper contributes to a deeper understanding of how digital technologies are reshaping the landscape of law and its impact on women. Furthermore, it underscores the importance of addressing gender disparities and promoting inclusivity in the design and implementation of legal and technological systems.

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1. INTRODUCTION

In the contemporary era of rapid technological advancement and evolving legal landscapes, the convergence of women, law, and digital technologies has emerged as a critical area of scholarly inquiry and societal concern. The intersection of these domains encapsulates a complex interplay of gender dynamics, legal frameworks, and technological innovations, each shaping and being shaped by the others in profound and often multifaceted ways. Understanding the intricate relationships between women, law, and digital technologies is not only essential for comprehending the current state of governance and justice but also for envisioning more inclusive, equitable, and responsive systems for the future [11].

The integration of digital technologies into various facets of legal practice, governance, and access to justice has brought about transformative changes, promising efficiency, accessibility, and democratization of legal processes [19]. However, these advancements have not unfolded uniformly for all members of society. Women, in particular, navigate a complex terrain where the promises of digital innovation intersect with longstanding societal inequalities, systemic biases, and gendered power dynamics. As such, the impact of digital technologies on women's experiences within legal systems is a topic of critical importance, warranting careful examination and scholarly attention [20].

At the heart of this inquiry lies the recognition that women's engagement with digital technologies is not monolithic but rather diverse and multifaceted. Women are not merely passive recipients of technological developments but active participants, innovators, and agents of change within legal and technological spheres [16]. Their experiences, perspectives, and challenges intersect with broader issues of gender equality, access to justice, privacy, cybersecurity, and human rights, thus necessitating a comprehensive understanding of the intricate interplay between gender, law, and digital technologies [3].

This introduction sets the stage for an elaborate exploration of the multifaceted dimensions of women's engagement with law and digital technologies. It aims to delve into various aspects of this intersection, including but not limited to the implications of gender biases in algorithmic decision-making, the challenges posed by cybersecurity threats and online harassment targeting women, the role of women in shaping digital law and policy, and the potential of emerging technologies to advance or hinder women's rights and access to justice [25].

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By examining these issues through an interdisciplinary lens, this introduction seeks to contribute to a deeper understanding of the complex dynamics at play and to inform efforts aimed at promoting gender-inclusive legal and technological frameworks in the digital age [34].

2. HISTORICAL AND CONTEMPORARY CONTEXTS OF WOMEN'S ENGAGEMENT WITH LAW AND TECHNOLOGY

Exploring the historical and contemporary contexts of women's engagement with law and technology offers valuable insights into the evolution of gender dynamics within legal frameworks and technological advancements [3]. Historically, women have faced systemic barriers and discrimination in accessing and participating in legal and technological spheres. In many societies, laws have been constructed and interpreted through patriarchal lenses, resulting in inequalities in rights, opportunities, and representation for women [1].

Throughout history, women have struggled to overcome legal obstacles that restricted their rights and agency. From suffragette movements fighting for the right to vote to legal battles for reproductive rights and equal pay, women have been at the forefront of challenging discriminatory laws and advocating for legal reforms. However, their contributions and voices have often been marginalized or overlooked within the legal discourse and decision-making processes [5].

Moreover, the historical exclusion of women from educational and professional opportunities in science, technology, engineering, and mathematics (STEM) fields has contributed to their underrepresentation in technological innovation and development. Women have often been relegated to peripheral roles or faced gender biases and stereotypes that hindered their advancement in technology-related fields. This historical context underscores the importance of understanding the systemic barriers that have shaped women's engagement with both law and technology [15, 28].

In contemporary society, women continue to navigate complex legal landscapes shaped by rapid technological advancements. The digital revolution has brought about transformative changes in how laws are enacted, enforced, and adjudicated, posing new challenges and opportunities for women's rights and access to justice. However, these advancements have not necessarily translated into gender equality within legal and technological spheres [13].

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Contemporary issues such as algorithmic bias, online harassment, and privacy concerns disproportionately affect women, highlighting the need for gender-sensitive legal frameworks and technological interventions. Women's representation in technology-related fields remains low, according to a report by the World Bank, women make up less than a third of the world's workforce in technology-related fields [41]. In major tech companies, women are in the minority. Specifically, at Amazon, Facebook, Apple, Google, and Microsoft, the proportion of female staff is 45%, 37%, 34%, 33%, and 33.1% of their entire workforce, respectively with persistent barriers such as workplace discrimination, lack of mentorship, and gender stereotypes hindering their participation and advancement. Furthermore, the digital divide exacerbates inequalities, with women in marginalized communities facing greater barriers to accessing and benefiting from digital technologies [31].

2.1 The low representation of women in technology-related fields

The underrepresentation of women in technology-related fields persists as a significant issue, despite efforts to promote diversity and inclusion. This underrepresentation is influenced by various factors, including but not limited to the lack of mentorship and pervasive gender stereotypes that hinder women's participation and advancement in these fields [32].

One of the key barriers to women's representation in technology-related fields is the lack of mentorship and support networks [27]. Mentorship plays a crucial role in providing guidance, support, and opportunities for skill development and career advancement. However, women in technology often face challenges in finding mentors who can relate to their experiences and provide relevant guidance. The scarcity of female mentors in technology-related fields further compounds this issue, as women may struggle to find role models and mentors who can understand and address their unique challenges and aspirations [15]. Without adequate mentorship and support, women may feel isolated, discouraged, and unsupported in pursuing careers in technology [33], contributing to their underrepresentation in these fields.

Gender stereotypes also play a significant role in hindering women's participation and advancement in technology-related fields [42]. From a young age, girls may internalize stereotypes that suggest that technology is a male-dominated domain and that they are less capable or interested in pursuing careers in STEM fields [30]. These stereotypes can shape educational and career choices, influencing girls' self-perceptions, aspirations, and opportunities in technology-related fields. Moreover, pervasive

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stereotypes about gender roles and abilities may contribute to biased hiring practices, discriminatory workplace cultures, and unequal opportunities for advancement within the technology sector [26]. Women may face unconscious biases, microaggressions, and stereotypes that undermine their credibility, competence, and leadership potential [18], further perpetuating their underrepresentation and marginalization in technology-related fields.

Additionally, systemic barriers such as workplace discrimination, hostile work environments, and lack of diversity initiatives can exacerbate the challenges faced by women in technology [33]. Women may encounter obstacles in accessing opportunities for skill development, career advancement, and leadership roles within technology companies and organizations. Discriminatory practices, such as unequal pay, biased performance evaluations, and limited access to decision-making positions, can further impede women's progression and retention in technology-related careers [39]. Hostile work environments, including harassment, sexism, and exclusionary practices, can create toxic cultures that drive women out of the field or discourage them from pursuing careers in technology altogether [4].

Addressing the low representation of women in technology-related fields requires a concerted effort to dismantle systemic barriers, challenge gender stereotypes, and promote inclusive and supportive environments. Initiatives aimed at increasing mentorship and support networks for women in technology, fostering inclusive educational and workplace cultures, and implementing policies that prioritize diversity and equity are essential steps towards achieving gender parity in technology-related fields. By addressing the root causes of underrepresentation and promoting gender-inclusive approaches to recruitment, retention, and advancement, we can create more diverse, innovative, and equitable technology ecosystems that benefit everyone.

2.2 Marginalized women and challenges accessing digital technology

Women in marginalized communities face significant barriers to accessing and benefiting from digital technologies, perpetuating existing inequalities and exacerbating social exclusion [22]. These barriers stem from a complex interplay of socio-economic, cultural, and structural factors that intersect to create formidable challenges for women in marginalized communities seeking to harness the potential of digital technologies for empowerment, socio-economic advancement, and inclusion.

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One of the primary barriers faced by women in marginalized communities is limited access to digital infrastructure and resources. Many marginalized communities lack reliable internet connectivity, affordable digital devices, and access to digital literacy programs, leaving women at a disadvantage in accessing information, education, employment opportunities, and essential services. Additionally, inadequate infrastructure and technological resources in marginalized communities can further isolate women, limiting their ability to connect with broader networks, access online resources, and participate in digital spaces.

Socio-economic factors also contribute to barriers faced by women in marginalized communities. Poverty, unemployment, and lack of financial resources can hinder women's ability to afford digital devices, internet subscriptions, and other technological resources. Additionally, competing priorities such as meeting basic needs, caring for families, and navigating systemic inequalities may limit women's time, energy, and resources available for engaging with digital technologies. As a result, women in marginalized communities may face greater challenges in accessing and benefiting from digital technologies compared to their more affluent counterparts.

Furthermore, cultural and social norms within marginalized communities can shape women's access to and use of digital technologies [29]. Gender roles, expectations, and restrictions may limit women's autonomy, mobility, and decision-making authority, impacting their ability to engage with digital technologies freely. Moreover, cultural norms that prioritize male access to education, employment, and technology may further marginalize women within their communities, reinforcing inequalities and perpetuating social exclusion.

Structural barriers, including discriminatory policies, lack of gender-sensitive programming, and systemic inequalities, also contribute to the challenges faced by women in marginalized communities in accessing and benefiting from digital technologies. Limited representation of women in decision-making roles within technology sectors and policymaking bodies may result in digital policies and programs that overlook the needs and realities of marginalized women, exacerbating their exclusion from digital spaces and opportunities.

Addressing the barriers faced by women in marginalized communities requires a multi-faceted approach that addresses the root causes of inequality and promotes inclusive and equitable access to digital technologies [17]. This includes investing in digital infrastructure and resources in marginalized

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communities, providing targeted support and training programs to enhance digital literacy skills among women, and promoting gender-sensitive policies and programs that prioritize the needs and voices of marginalized women. Additionally, efforts to challenge gender norms, empower women's agency, and foster community-led initiatives can help create more inclusive and accessible digital ecosystems that benefit all members of society [38]. By addressing the intersecting barriers faced by women in marginalized communities, we can work towards building a more equitable and inclusive digital future for all.

Understanding the historical and contemporary contexts of women's engagement with law and technology is essential for identifying systemic inequalities, addressing gender biases, and promoting inclusivity in legal and technological systems. By acknowledging the contributions and challenges of women in shaping legal frameworks and technological innovations, policymakers, practitioners, and researchers can work towards creating more equitable and responsive systems that empower women and promote gender equality.

3. THE IMPACT OF GENDER BIASES ON ALGORITHMIC DECISION-MAKING

The impact of gender biases on algorithmic decision-making represents a critical and multifaceted issue within the intersection of technology and gender equality [14]. Algorithms, which are sets of instructions followed by computers to solve problems or perform tasks, increasingly influence various aspects of modern life, including hiring practices, credit scoring, criminal justice, and healthcare [6].

However, these algorithms are not immune to bias; they can perpetuate and even exacerbate existing societal inequalities, including those related to gender. One significant challenge is the potential for algorithmic systems to reflect and amplify gender biases present in the data used to train them. Historical data often reflect societal biases, stereotypes, and inequalities, which can manifest in algorithmic decision-making processes. For example, if historical hiring data predominantly favour male candidates due to past discriminatory practices, algorithms trained on this data may perpetuate gender disparities by favouring male candidates over equally qualified female candidates. Similarly, biases in criminal justice data may result in algorithmic systems that disproportionately target or penalize marginalized communities, including women [7].

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Moreover, the design and implementation of algorithms themselves can introduce gender biases. Algorithm developers may inadvertently embed biases into their algorithms through the selection of features, the choice of algorithms, or the optimization process. For instance, if a hiring algorithm prioritizes characteristics traditionally associated with men, such as assertiveness or leadership, it may disadvantage female candidates who possess different but equally valuable skills and qualities [8].

The impact of gender biases on algorithmic decision-making extends beyond individual outcomes to broader societal implications. Biased algorithms can reinforce and perpetuate systemic inequalities, exacerbating disparities in access to opportunities, resources, and rights. For example, biased credit scoring algorithms may limit women's access to financial services or result in higher interest rates for female borrowers, perpetuating economic inequalities. In healthcare, biased algorithms may lead to misdiagnoses or inadequate treatment for women, exacerbating gender disparities in health outcomes [10].

Addressing the impact of gender biases on algorithmic decision-making requires a multifaceted approach. First, it is essential to increase transparency and accountability in algorithmic systems to enable stakeholders to identify and mitigate biases effectively. This includes promoting transparency in algorithmic processes, data sources, and decision-making criteria, as well as implementing mechanisms for auditing and evaluating algorithmic systems for fairness and equity [12].

Additionally, there is a need to diversify the representation of voices and perspectives in algorithm development and decision-making processes. Increasing diversity among algorithm developers, data scientists, and decision-makers can help mitigate biases and ensure that algorithms reflect a broader range of experiences and values. Furthermore, promoting interdisciplinary collaboration between technologists, ethicists, social scientists, and policymakers can facilitate a more nuanced understanding of the ethical, social, and legal implications of algorithmic decision-making [43].

Ultimately, addressing the impact of gender biases on algorithmic decision-making requires a concerted effort from policymakers, technologists, researchers, and civil society stakeholders. By acknowledging and actively addressing these biases, we can work towards building more equitable, transparent, and accountable algorithmic systems that advance gender equality and social justice.

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4. TRENDS AND ASSOCIATIONS BETWEEN VARIABLES RELATED TO WOMEN'S ENGAGEMENT WITH LAW AND DIGITAL TECHNOLOGIES

Exploring the trends and associations between variables related to women's engagement with law and digital technologies involves a comprehensive analysis of various factors that influence women's interactions with legal frameworks and technological advancements. This examination encompasses a wide range of dimensions, including socio-economic status, educational attainment, cultural norms, access to resources, and institutional barriers, among others. By exploring these trends and associations, we can gain valuable insights into the complex dynamics shaping women's experiences in navigating the intersection of law and digital technologies.

One significant trend in women's engagement with law and digital technologies is the digital gender gap, which refers to disparities in access to and usage of digital technologies between men and women [23]. Globally, women are often less likely than men to have access to digital devices, internet connectivity, and digital literacy skills, which can limit their ability to fully participate in digital spaces and benefit from technological advancements. This digital gender gap is influenced by various factors, including socioeconomic inequalities, cultural norms, and discriminatory practices that prioritize men's access to technology over women [21].

4.1 Socio-economic inequalities

Socio-economic inequalities that prioritize men's access to technology over women represent a complex and pervasive issue with far-reaching implications for gender equality and social justice. At its core, this phenomenon reflects broader patterns of systemic discrimination and marginalization that perpetuate disparities in access to resources, opportunities, and power along gender lines.

One key factor contributing to socioeconomic inequalities in access to technology is the unequal distribution of resources and opportunities based on gender. In many societies, men are more likely to have access to higher levels of education, employment opportunities, and financial resources compared to women. As a result, men often have greater purchasing power and access to technological devices, such as smartphones, computers, and internet connectivity, which are essential for participating in the digital world.

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Moreover, cultural norms and societal expectations often prioritize men's access to technology over women's. Gender roles and stereotypes perpetuate the idea that men are more technologically savvy or inherently interested in STEM fields, while women are often discouraged or excluded from pursuing careers or education in technology-related fields. These cultural beliefs not only limit women's opportunities for acquiring digital skills but also create social barriers that discourage them from engaging with technology or pursuing careers in technology-related sectors.

Furthermore, institutional barriers, such as gender bias in education and employment, exacerbate socioeconomic inequalities in access to technology. Women are often underrepresented in STEM fields and face discrimination and bias in educational and professional settings, limiting their opportunities for acquiring digital skills and accessing technology-related resources [36]. Additionally, gender disparities in income and employment opportunities can further hinder women's ability to afford and access technology, perpetuating cycles of inequality and exclusion.

The consequences of socioeconomic inequalities in access to technology are profound and multifaceted. Limited access to technology can restrict women's ability to participate fully in digital spaces, access educational resources, seek employment opportunities, and engage in civic and political activities. This digital divide not only exacerbates existing disparities in income, education, and employment but also reinforces systemic inequalities that marginalize women and perpetuate cycles of poverty and exclusion.

Addressing socioeconomic inequalities in access to technology requires a multifaceted approach that addresses underlying systemic barriers and promotes gender-inclusive policies and interventions. Efforts to bridge the digital gender gap should focus on increasing access to technology, digital literacy training, and educational opportunities for women and girls. Additionally, initiatives aimed at challenging gender stereotypes, promoting diversity in STEM fields, and addressing institutional bias are essential for creating more inclusive and equitable societies where women have equal opportunities to access and benefit from technology [9]. By addressing socioeconomic inequalities and promoting gender-inclusive approaches to technology access and participation, we can work towards building a more just and equitable world for all genders.

4.1.1 Cultural norms, historical legacies

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Socio-economic inequalities and discriminatory practices that prioritize men's access to technology over women are deeply rooted in cultural norms, historical legacies, and systemic biases that perpetuate gender disparities in access to resources, opportunities, and power. These inequalities manifest in various forms, including disparities in education, employment, income, and decision-making authority, all of which contribute to the unequal distribution of technological resources and opportunities between men and women.

At the heart of this issue are cultural norms and gender roles that assign different expectations, responsibilities, and privileges to men and women within society. From a young age, boys are often encouraged to pursue interests in science, technology, engineering, and mathematics (STEM) fields, while girls may be steered towards traditionally feminine pursuits. These gendered expectations not only shape educational and career choices but also influence access to resources such as computers, internet connectivity, and digital literacy training. As a result, boys and men are more likely to have access to and proficiency in technology, while girls and women may face barriers to entry and participation in digital spaces.

Discriminatory practices within educational institutions, workplaces, and government policies further exacerbate these inequalities by reinforcing gender stereotypes and biases. For example, girls may receive less encouragement and support in pursuing STEM education and careers, leading to lower representation in technology-related fields [40]. Similarly, discriminatory hiring practices and workplace cultures may perpetuate gender segregation and inequalities in access to opportunities for skill development, career advancement, and leadership positions within the technology sector.

Moreover, socio-economic factors such as income, wealth, and access to resources play a significant role in determining who has access to technology and who does not. Women, particularly those from marginalized communities, may face financial barriers that limit their ability to afford computers, internet subscriptions, and other digital devices and services. Additionally, women may have less access to education and training opportunities that enhance digital literacy skills, further exacerbating disparities in technological access and proficiency.

These socio-economic inequalities and discriminatory practices create a vicious cycle of exclusion and marginalization, perpetuating gender disparities in access to technology and opportunities for socio-economic advancement. Addressing these inequalities requires a multi-faceted approach that involves

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challenging gender stereotypes, promoting gender equality in education and employment, implementing policies that prioritize women's access to technology, and fostering inclusive digital ecosystems that empower women to fully participate in the digital age [2]. By addressing the root causes of these inequalities and promoting gender-inclusive approaches to technology access and usage, we can work towards building a more equitable and inclusive society where everyone, regardless of gender, has equal opportunities to harness the benefits of technology for socio-economic development and empowerment.

Furthermore, there are notable trends in women's representation and participation in technology-related fields, such as computer science, engineering, and information technology. Despite efforts to promote gender diversity in these fields, women remain underrepresented, particularly in leadership roles and high-tech sectors. This underrepresentation is influenced by a complex interplay of factors, including stereotypes, biases, lack of mentorship and support, and hostile work environments, which create barriers to women's advancement and retention in technology-related careers [24].

In addition to trends in access and representation, there are associations between variables related to women's engagement with law and digital technologies. For example, research has shown correlations between women's educational attainment and their participation in technology-related fields. Women with higher levels of education are more likely to pursue careers in STEM fields and to have access to opportunities for advancement and leadership roles. Similarly, there are associations between women's socio-economic status and their access to legal resources and representation. Women from marginalized communities often face greater barriers to accessing legal services, navigating legal processes, and advocating for their rights [1].

Moreover, there are associations between cultural norms and women's engagement with law and digital technologies. Cultural beliefs and societal expectations regarding gender roles, family responsibilities, and women's capabilities influence women's access to education, employment opportunities, and participation in decision-making processes. These cultural norms can either facilitate or hinder women's engagement with law and digital technologies, shaping their experiences and opportunities in these domains [37].

Understanding these trends and associations is crucial for developing targeted interventions and policies aimed at promoting gender equality, increasing women's access to legal resources and digital technologies, and addressing systemic barriers to women's participation in technology-related fields [15,

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28]. By identifying key trends and associations, policymakers, practitioners, and advocates can work towards creating more inclusive, equitable, and responsive systems that empower women and promote gender justice in the digital age.

5. CONCLUSION

In conclusion, the overarching goal of this research is to offer a comprehensive and nuanced understanding of the intricate relationships that exist between women, law, and digital technologies. Through an extensive exploration of the multifaceted dimensions of this intersection, this study aims to shed light on the diverse experiences, challenges, and contributions of women within this complex landscape. By doing so, it seeks to contribute meaningfully to ongoing efforts aimed at promoting gender-inclusive legal and technological frameworks in the digital age.

Central to this endeavour is the recognition of the diverse experiences of women within the realms of law and digital technologies. Women encompass a spectrum of identities, backgrounds, and lived experiences, each of which shapes their interactions with legal systems and technological advancements in unique ways. By acknowledging and exploring this diversity, this research seeks to move beyond monolithic narratives and surface the complexities and nuances of women's engagement with law and digital technologies.

Moreover, this study aims to illuminate the challenges that women face within this intersection, including but not limited to gender biases, systemic inequalities, and structural barriers. From algorithmic decision-making processes that perpetuate gender biases to barriers to accessing legal resources and representation, women encounter a myriad of obstacles that hinder their full participation and empowerment within legal and technological spheres. By critically examining these challenges, this research seeks to identify areas for intervention and advocacy aimed at promoting gender equity and justice.

At the same time, this research endeavours to highlight the myriad contributions that women make to the fields of law and digital technologies. Women are not merely passive recipients of legal and technological developments but active agents of change, innovation, and advocacy. From pioneering legal

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reforms to spearheading technological advancements, women have played instrumental roles in shaping the landscapes of law and digital technologies.

By amplifying these contributions, this study seeks to challenge stereotypes, broaden perceptions, and inspire future generations of women to pursue careers and leadership roles in these domains. Ultimately, the overarching aim of this research is to contribute to the ongoing efforts to create more gender-inclusive legal and technological frameworks in the digital age. By deepening our understanding of the intricate relationships between women, law, and digital technologies, this study seeks to inform policies, practices, and interventions that promote gender equity, justice, and empowerment. Through collaborative efforts from policymakers, practitioners, researchers, and advocates, we can work towards building a more inclusive, equitable, and responsive society where women's rights and voices are fully recognized, valued, and protected in the digital era.

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LA PARTICIPACIÓN DE LAS MUJERES EN EL DERECHO Y LAS TECNOLOGÍAS DIGITALES: UNA EVALUACIÓN

RESUMEN

La intersección entre las mujeres, el derecho y las tecnologías digitales es un área de estudio en auge con profundas implicaciones para las estructuras sociales y los derechos individuales. Este artículo examina la multifacética relación entre las mujeres, los sistemas jurídicos y las tecnologías digitales, explorando las oportunidades y los desafíos que presenta la integración de la tecnología en los marcos legales. Investiga temas como los sesgos de género en la toma de decisiones algorítmica, las preocupaciones sobre ciberseguridad que afectan a las mujeres, las respuestas legales al acoso en línea y la violencia de género, la representación de las mujeres en los espacios jurídicos digitales y el impacto de las tecnologías emergentes en los derechos de las mujeres y el acceso a la justicia. Al sintetizar la investigación existente y ofrecer perspectivas sobre las futuras direcciones, este artículo contribuye a una comprensión más profunda de cómo las tecnologías digitales están transformando el panorama jurídico y su impacto en las mujeres. Además, subraya la importancia de abordar las disparidades de género y promover la inclusión en el diseño e implementación de los sistemas jurídicos y tecnológicos.

Palabras clave: mujeres, derecho, tecnologías digitales, sesgo de género, marcos inclusivos

女性参与法律与数字技术：评估

摘要

女性、法律与数字技术的交叉是一个新兴的研究领域，对社会结构和个人权利有着深远的影响。本文探讨了女性、法律体系和数字技术之间多层面的关系，并探讨了技术融入法律框架所带来的机遇和挑战。研究主题包括算法决策中的性别偏见、影响女性的网络安全问题、针对网络骚扰和性别暴力的法律应对措施、女性在数字法律领域的代表性，以及新兴技术对女性权利和司法公正的影响。通过整合现有研究并展望未来方向，本文有助于更深入地理解数字技术如何重塑法律格局及其对女性的影响。此外，本文还强调了在法律和技术体系的设计和实施中解决性别差异和促进包容性的重要性。

关键词：女性、法律、数字技术、性别偏见、包容性框架

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CHALLENGES AND TRENDS OF BUILDING NEW WORLD ARCHITECTURE WITH BRICS+ COUNTRIES

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ABSTRACT | 摘要 | RESUMEN

BRICS is a unique multilateral organization spanning Europe, Latin America, Asia, and Africa, playing a key role in shaping a multipolar world. The expanded BRICS+ holds transformative potential by creating alternatives to dominant global systems, such as international currency, the World Bank, and ICSID arbitration. This paper proposes a diversified approach to support member states in achieving synergy for shared economic growth. To reach this goal, the authors applied comparative legal analysis, formal legal methods, retrospection, and legal forecasting. A core finding highlights the need to harmonize key areas of legislation across BRICS+ members—especially antitrust, customs, financial regulation, and investment dispute resolution. Establishing favorable conditions for business partnerships is essential. The paper identifies priority sectors for cooperation—energy, security, innovation, trade, digital transformation, and financial markets—as the foundation for joint development of balanced policies. These efforts aim to align business, antitrust, and investment frameworks, fostering deeper integration and collaboration within the BRICS+ alliance.

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1. INTRODUCTION

We can foresee a changing landscape of world architecture in the near future, with BRICS+ countries forming their alliance to govern the global economy.

How can BRICS be characterized? In our opinion, it is a unique multilateral organization formed in the transcontinental dimension of Europe, Latin America, Asia and Africa, that has a great value for the development of a contemporary multipolar world. The initial founders of BRICS: Brazil, Russia, India, China and South Africa with their huge territories, good geographical locations, strong economies and numerous populations have become major players of international relations in the 20th century, and new members of BRICS+: Argentina, Egypt, Ethiopia, Iran, Saudi Arabia, and the United Arab Emirates in the beginning of the 21st century have brought new power and resources to strengthen the coalition.

Common problems such as poverty, the COVID-19 pandemic, and digital challenges have shown that the countries of BRICS+ have mutual goals, which form the grounds for the convergence of national interests of the BRICS+ countries. According to Bevelikova N.M., BRICS is positioned now as a new algorithm of international relations being built outside of stereotypes - as a global forum with its own vector of development [1]. We believe that BRICS+ power is in the creation of alternatives: to the international currency, to the system of the World Bank, to the procedure of international arbitration in ICSID. In our opinion, the reason for the decline of the American leadership is the US's peremptory intention of exerting total control at the global level, which pushes other strong international players to resist and actively counteract American dominance.

2. SEARCHING FOR AN ALTERNATIVE TO THE US DOLLAR

One of the obvious paths of BRICS+ to achieve the goal of building a better global economy is to stop the dollar from being the only world reserve currency.

Firstly, there is no logic in fostering the alternative world architecture to compete for power with the Western economies and still using their currency to make them richer and continue to depend on them. The examples of Russian sanctions as well as sanctions against BRICS+ new member Iran have vividly

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shown that tying economic turnover to the US dollar is a bad idea, as being blocked from using the dollar, a country is basically blocked from the possibility of doing business internationally.

Secondly, BRICS+ won't be able to build their economic ecosystem without the bloc's unique method of trading among the member countries. Unlike regional economic integration organizations such as Eurasian Economic Union and the Southern Common Market (Mercosur), which share the border and thus can build common market with free movement of people, services and goods, BRICS+ countries are located all over the world and their "common market" can be built only digitally, commercially or financially. Having BRICS+ own currency can be the method to achieve this goal.

Thirdly, BRICS+ set a goal of increasing their role in the international monetary system. At a BRICS summit in Johannesburg in August 2023, Brazil's President Luiz Inacio Lula da Silva suggested that the BRICS nations create a common currency for trade and investment between each other to increase payment options and reduce vulnerability to dollar exchange rate fluctuations [6],[9], [17]. This will strengthen the position of BRICS+ as the alliance in the decision-making process in the global economy.

Summing it up, we conclude that building an independent economic ecosystem within BRICS+ with the potential for growth and the synergetic effect achieved via economic cooperation of member states is only possible when its own non-dollar-centric financial and payment systems are created and implemented in the transactions of BRICS+ countries.

BRICS countries have been discussing the idea of choosing alternative currency to US dollar for more than two decades.

One of the suggestions was to broaden the use of other national currencies, in particular the Chinese yuan, which has lately gained a stronger role in global trade. This effort contributes to de-dollarization and potentially alters the global economic landscape by creating a multipolar currency system [7], [16]. At the same time, it is understandable that although the dominance of US dollar is not very convenient to the BRICS countries, increasing the privilege of one of BRICS members by legally choosing its currency for the block as the official one doesn't seem to be a better idea as it will ruin the balance in the alliance. Instead of naming the Chinese yuan as an official currency of the BRICS bloc in the international multilateral agreement, the member states have continued to discuss how to increase the use of other national currencies of BRICS countries, as well as the Chinese yuan, in transactions between them. Thus,

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there have been some steps toward "bilateral exchanges," for example, between the Russian ruble and the Indian rupee [13]. From the legal point of view, it means that two countries in their bilateral agreements state that they will use non-dollar currencies in their transactions between each other. For example, China and Brazil agreed in March 2023 to use their own currencies, instead of the US dollar, for trade settlement. Moreover, one of the Brazilian banks, BOCOM BBM, has joined the China Interbank Payment System (alternative to SWIFT) [2], [5]. Unfortunately, currency barter has its own difficulties, including the problem of the availability of enough cash to exchange at any concrete moment in any concrete currency on demand, which makes the search for an alternative to the US dollar go on.

The other suggestion to develop an alternative mechanism to the one based on the US dollar is to use gold as the basis for international exchange, and furthermore, for the creation of a common gold-based BRICS currency. As gold itself is difficult to use in transactions, the logical solution is to create gold bonds or backed by a gold stable coin. For example, the Reserve Bank of India, on behalf of the Government of India, has issued Sovereign Gold Bonds. If at any point, BRICS+ countries decide to issue their own currency or stablecoin backed up by gold, there should be enough gold to do it. This is why China is actively divesting from US Treasuries and shifting its investments toward gold. Meanwhile, Huang W., Chang M.S. have proven that either bonds or gold can stabilize the Chinese stock markets because they improve diversification [10].

According to Y.D. Lissovolik, the launching of the common currency can demand an accounting unit, a reserve currency, various forms of a physical fiat transactions unit [14]. There is an idea of creating a payment system based on blockchain and digital technologies. Gusarova S., Gusarov I., & Smeretchinskii M. reckon, that to develop the digital economy of BRICS countries and strengthen their integration, it is necessary to develop and implement Blockchain Fund as an alternative to international money transfer systems, bind the cryptocurrency of BRICS countries to the quotation of gold (not the US dollar), expand knowledge about the effectiveness of using blockchain technology in various sectors of the economy [8]. Developing its own cryptocurrency may help BRICS countries' national economies thrive.

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3. CHALLENGES OF LEGAL INTEGRATION IN BRICS+

BRICS+ is mostly an informal alliance without a strict legal internal structure that does not fully meet the requirements for an international intergovernmental organization. BRICS is mostly a chain of conferences on the international level, but these conferences are not just occasional meetings, but periodically held international events that acquire some organizational and legal basis. In international legal terms, BRICS are a unique flexible form of diplomacy among countries, which is not legally endowed with capacity or functions, doesn't have a constituent act, formalized organizational structure or the right to make legally binding decisions. BRICS+ as an integration unit is based on the current common interests of the member states in economic and geopolitical spheres, which allow its member states to remain mostly independent as their national interests mean more to them than BRICS goals in the end of the day.

Even if countries decide to broaden their integration, there will still be a vast difference in the structure of national economies, levels of economic growth and investment attractiveness, liquidity and stability of national currencies, which will be a significant problem in the process of searching for common goals and grounds. The good thing is that while countries have only certain fragmentary vectors of integration, it is easier to find the paths to achieve the set goals. Legal integration for now is not among them.

At the same time, if no steps are taken towards harmonization of law in BRICS+ countries, there will be no prospects in fostering the transaction activities between private investors of BRICS countries. The member states should not only consider undertaking large transactions with governmental involvement among BRICS+ members, but also create favorable conditions for businesses to interact and for partnerships to form. At the current stage of the BRICS+ integration process, it is important to find common guidelines for the harmonization of civil legislation, which will contribute to the growth of transactions among the member states [3], [4], [15]. Apart from this, priority areas of interstate cooperation within BRICS+ should include energy, security, innovation, trade, digital transformation, financial markets, and other relevant fields. These areas should be the first to develop balanced policies and common vectors for the development of business, antitrust, customs, and investment legislation among member states. The task is not too simple, especially taking into consideration different legal systems (Continental, Anglo-American, Sharia) of BRICS+ countries, such as India, Iran, Russia, and China.

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For example, all BRICS countries have adopted antitrust legislation, but, according to K.A. Pisenko, there are some significant differences in the approaches within this type of legislation. Thus, quantitative criteria for defining dominance are used in Brazil and strictly fixed in China, but are not even mentioned in India. Russian legislation contains both quantitative and qualitative criteria, and a mixed system is adopted in the Republic of South Africa as well [15]. Other authors give even more detailed insight into the abovementioned difference and show that, although China and Brazil apply quantitative criteria, China sets a lower threshold for dominance based on the share criterion, while Brazil sets a dominance limit based on annual income. Differences also exist in the practice of Russia and South Africa when applying an alternative approach. Thus, the application of qualitative criteria in India is based on judicial precedent practice as India practices common law [11].

Customs legislation also demands harmonization. The importance of this sphere of law is vividly depicted in the regional economic integration process, where unified customs codes or laws are adopted at the first stages of building a common market. As BRICS+ countries don't share common geographical borders, it is important to unify them in a digital way. Thus, according to Shokhin S.O., customs administrations should strive to work towards smooth customs clearance processes, which can be achieved through the establishment of digital customs and implementation of the BRICS Single Window Framework Program, which can provide a platform for collective exchange of operational standards, practices and experience. It is also important to support new business formats, including e-commerce, as well as in all BRICS+ countries, to stimulate businesses to create joint ventures and enlarge the number of transactions between member states [18].

One of the important spheres, where harmonization is needed, is investment law. Firstly, if BRICS+ countries want to create a unified political and economic block, they need to agree on their approach in dealing with third countries, which are not involved in the alliance, and among each other. If the compromise in relation to third countries is hardly achievable (which can be shown by the example of sanctions and anti-sanctions regimes), the unified policy in investment relations between BRICS+ state members can be built. The bilateral investment agreements should be made in a similar manner, at least in terms of the arbitration procedure. As BRICS+ strive to create an alternative global architecture to the World Bank driven Western World, its member states should stop using the International Centre for Settlement of Investment Disputes (subsidiary of the World Bank) procedure under ICSID Convention (14 October 1966, Washington, D.C.) and create an alternative mechanism to resolve investment disputes.

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The difference in the level of economic and social development of different countries is often covered by the attempts of the development institutions, which aim to invest in making life of people better all over the world. Multilateral development banks as international financial development institutions serve as instruments of economic global and regional integration, on the one hand, and instruments of redistribution of political and economic influence, on the other. In the digital world, international financial institutions play an important role in the global economy, no matter where they are located. The New Development Bank, created in 2014 by a multilateral agreement that was signed by all members of the initial BRICS, has become an alternative to the World Bank, which has always been a reflection of the Bretton Woods paradigm [12]. New global infrastructure demands its own institute of development that will mobilize resources to invest in infrastructure and sustainable development projects in the BRICS and developing countries to support global growth and development.

It is important to mention that the New Development Bank should become a center for the harmonization of financial legislation in the BRICS countries. Based on this harmonized legislation, it will be easier to create new financial and payment systems of BRICS+ and implement the use of a new currency, if and when it is created. The uneven level of development of the new and initial BRICS members is an undeniable obstacle to the development of common standards and requirements; thus, ensuring financial inclusiveness in the new BRICS members requires special attention in terms of achieving harmony not only in economic but also in legislative and regulatory development.

The New Development Bank has a vast instrumental variety in fostering economic growth of developing countries, including loans, guarantees, equity participation and other financial instruments, cooperation with international and national organizations, providing assistance in structuring investment projects, support for such projects, if more than one country is involved. For the countries and their businesses that lack experience in the realization of investment projects, the involvement of the New Development Bank and its expertise is precious. Obviously, not only expertise but also the investment that is provided by the Bank is appreciated, as some countries of BRICS have a developing economy without the capacity to finance expensive large-scale infrastructure investment projects from their budgets.

It is important to mention that the New Development Bank can also become an institution that plays the role of a commercial bank. Through this, the Bank will be comfortable to pay for the transactions between BRICS+ countries if they have their accounts in the Bank. It is not necessary to do so through the organization itself, as the New Development Bank could create and control a digital platform through

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which the payments could be made. It can also create a system of using digital wallets that can serve as an alternative to bank accounts for businesses.

Based on the general idea of the need to harmonize legislation in BRICS+ members, we believe that certain spheres of legislation should be covered in the first place: antitrust, customs, financial regulation, investment disputes resolution, to mention but a few. Notwithstanding the fact that BRICS+ countries have different legal systems, including common law, Sharia law, and continental law systems, it is possible to achieve some form of legal integration where necessary.

4. CONCLUSION

New BRICS+ members are the states with different levels of economic and legislative development, political goals and ambitions. To achieve a synergetic effect in fostering the economic growth of all BRICS+ countries and the alliance, it is important to adopt a diverse approach in supporting different member states. For example, in Egypt, there is a recognized need to focus more on strengthening the financial ecosystem by removing obstacles, to fill the gap between demand and supply in providing various financial services through banks and FinTech startups to meet the different needs of customers, businesses and the market. The Kingdom of Saudi Arabia aims to become a global financial technology center similar to London and Singapore, as the measures being taken demonstrate that Saudi Arabia is fully committed to inclusive financial technology growth. The United Arab Emirates (UAE) has taken even bigger steps to become not only a regional but also a global financial services center. Ethiopia, due to its high economic and demographic growth in recent years, is in critical need of the creation of jobs and a focus on marginalized and vulnerable groups in society. All these peculiarities should be taken into consideration while discussing BRICS+ strategies.

All the BRICS+ countries want to make the life of their population better, develop their financial, digital and product markets, and increase the number of investment projects and transactions in their territory. There are also common goals in the global arena – achieve sustainable development, reduce poverty and pollution, and solve ecological and social problems that take place in each and every country. The BRICS+ platform is an effective instrument to achieve this goal.

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RETOS Y TENDENCIAS PARA LA CONSTRUCCIÓN DE UNA NUEVA ARQUITECTURA MUNDIAL CON LOS PAÍSES BRICS+

RESUMEN

El BRICS es una organización multilateral única que abarca Europa, América Latina, Asia y África, y desempeña un papel clave en la configuración de un mundo multipolar. El BRICS+ ampliado posee un potencial transformador al crear alternativas a los sistemas globales dominantes, como la moneda internacional, el Banco Mundial y el arbitraje del CIADI. Este documento propone un enfoque diversificado para apoyar a los Estados miembros en el logro de sinergias que fomenten un crecimiento económico compartido. Para alcanzar este objetivo, los autores aplicaron análisis jurídico comparativo, métodos jurídicos formales, retrospección y previsión jurídica. Un hallazgo fundamental destaca la necesidad de armonizar áreas clave de la legislación entre los miembros del BRICS+, especialmente las leyes antimonopolio, aduaneras, regulación financiera y resolución de disputas de inversión. Establecer condiciones favorables para las alianzas comerciales es esencial. El documento identifica sectores prioritarios para la cooperación —energía, seguridad, innovación, comercio, transformación digital y mercados financieros— como base para el desarrollo conjunto de políticas equilibradas. Estos esfuerzos buscan armonizar los marcos comerciales, antimonopolio y de inversión, fomentando una mayor integración y colaboración dentro de la alianza BRICS+.

Palabras clave: BRICS+, derecho, regulación, alianza, moneda, derecho mercantil

与“金砖国家+”共建新世界格局的挑战与趋势

摘要

金砖国家是一个独特的多边组织，横跨欧洲、拉丁美洲、亚洲和非洲，在塑造多极世界方面发挥着关键作用。扩大后的“金砖国家+”拥有变革潜力，能够为国际货币、世界银行和国际投资争端解决中心（ICSID）等主流全球体系创造替代方案。本文提出了一种多元化的方法，以支持成员国实现协同增效，实现共同经济增长。为了实现这一目标，作者运用了比较法律分析、正式法律方法、回顾和法律预测。一项核心发现强调了协调“金砖国家+”成员国关键立法领域的必要性，尤其是在反垄断、海关、金融监管和投资争端解决方面。为商业伙伴关系创造有利条件至关重要。本文确定了合作的重点领域——能源、安全、创新、贸易、数字化转型和金融市场——作为共同制定平衡政策的基础。这些努力旨在协调商业、反垄断和投资框架，促进金砖国家+联盟内部更深层次的融合与合作。

关键词：金砖国家+、法律、监管、伙伴关系、货币、商法

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ELECTRONIC DOCUMENTS AS ELECTRONIC EVIDENCE

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The development of technology has led to the fact that a large part of the disputes has transcended national borders and acquired a cross-border character. This requires the study of electronic evidence, in particular electronic documents, as a qualitatively new legal phenomenon, which has its own independent regulation at national and supranational level. In order to understand the concept of "electronic document", a comparison will be made with the conventional, written document, indicating the similarities and differences between the two legal phenomena, as well as the peculiarities inherent only to electronic documents. The article explores the concept of the electronic evidence in conflict resolution through a mixed-methods approach combining systematic literature analysis and comparative case studies. The legal definition of an electronic document is analyzed. Author also concludes on the necessity of a rethinking of the theory of physical evidence in the context of electronic documents.

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1. INTRODUCTION

Often, civil and commercial relations develop in an electronic environment, and the only way to establish the content, as well as the emergence, amendment and termination of legal relations, is through electronic documents containing the electronic statements of both parties. This requires the study of electronic evidence, in particular electronic documents, as a qualitatively new legal phenomenon, which has its own independent regulation at the national and supranational levels.

In order to explain the concept of 'electronic document' as a new legal phenomenon, it is necessary to make a comparison between the classical understanding of a written document, such as a verbal statement presented in alphabetic characters on a tangible medium (most often paper), and an electronic document within the meaning of Regulation (EU) No 910/2014 of the European Parliament and of the Council of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market and on the Knowledge of the main characteristics of a written document is the basis on which those specific features of an electronic document that are inherent only to it and define it as a new legal phenomenon are derived.

The article explores the concept of electronic evidence in conflict resolution through a mixed-methods approach combining systematic literature analysis and comparative case studies.

2. THE CONCEPT OF A WRITTEN DOCUMENT AND ITS SPECIFIC CHARACTERISTICS

The word "document" is of Latin origin – from ***documentum*** – sample, testimony, evidence. Not every text has the character of a document; a document is only the text in which *a statement* is materialized. From the point of view of law, it does not matter what the statement is, because it can be legally significant, but also irrelevant to the law. It is necessary to assess what the facts relevant to the law are and whether they can be proven by the relevant document.

The theory of the document and its nature have been the subject of numerous scientific studies. In 1951. **Suzanne Briet** published her work "What is documentation?", in which she analyzed the

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peculiarities of ***documentation*** and defined the document as ***"evidence in support of a fact***" [2],[4],[6]. Her theory reveals the essential features of the document:

- the document can only be a physical object;
- that physical object may be treated as evidence;
- must contain verbal statements;
- the object must be perceived as a document [7], [8], [10].

In her research, *Suzanne Briet* derives the main features of the document, which correspond to the traditional understanding of the civil law theory of the concept of *document* – "*an object on which a statement is materialized by written or electronic signs*" [13], which is relevant to law. The given definition, albeit conditional, makes it possible to derive the main characteristics of the concept of "document" in the context of the classical understanding of a document:

- A document always *incorporates the will of a person*, which will is materialized on the document by means of verbal signs;
- Not every written statement is a legally relevant document. In order for a document to exist, a written act must contain *a legally relevant statement*, from which certain legal consequences arise;
- The statement of will, in addition to being legally relevant, must be objectified on some *material medium*. It can be either paper or other material on which the statement is objectified. In antiquity, documents were materialized on wood, stone or other, relatively durable medium;
- The document must be readable, i.e., its content must be perceived visually;
- A paper document may be handwritten or the text on it may be reproduced by technical means, but in all cases, the signatories for whom the document is legally significant must have animus signandi, i.e., the intention to sign the statement made with the knowledge that certain legal consequences will arise from this;

From the above, it can be concluded that the document can exist on different material carriers – usually and expectedly this is on sheets of paper, but it can be composed on leather or other textile material,

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etc [1]. It is enough to materialize a statement significant from the point of view of law with verbal signs, and this materialization is to be permanent.

Last but not least, the document must contain *the names and signature of its publisher.* Usually, the author of the document is the person who signed it. It is not necessary for the signatory to be familiar with the content of the document; theory and practice *assume* that once the document is signed, the author is familiar with the text, it contains his statement [15], and agrees with it, and therefore has signed the statement he signed.

Once created, the written document, which contains the above-mentioned features, also gives us the essence of the concept of document used in civil and commercial relations, and especially in civil procedure and arbitration proceedings, in which electronic documents and electronic evidence are increasingly used [5].

3. THE CONCEPT OF AN ELECTRONIC DOCUMENT

With the adoption of Regulation (EU) No 910/2014, for the first time a legal definition of the term "electronic document" was given (Article 3, item 35 of Regulation (EU) No 910/2014), namely it is "***any content stored in electronic form, in particular text or sound, visual or audio-visual recording***". From the analysis of the text, we can derive the characteristics of an electronic document. In order for an electronic document to exist, it must ***incorporate a legally relevant statement or other electronic content such as a text, sound, visual or audio-visual recording***. *Regulation* (EU) No *910/2014* defines an electronic document in a broad sense, namely any content stored in electronic form, in particular in the form of text or sound, visual or audiovisual recordings. This list is not exhaustive, but for example, any content in electronic form, the creation of which is associated with legal consequences, should be considered as an electronic document. liberally, taking into account the dynamics and scientific and technological progress, giving an example of electronic documents. It does not matter whether it contains an electronic statement or not. It is sufficient that the electronic document is in digital form, that it is legally relevant and that certain legal consequences arise from it [3].

An extremely important application is the norm of Article 46 of Regulation (EU) No 910/2014, which provides that an electronic document has the same evidentiary value as an ordinary written

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document. This is of particular importance, since according to Article 288 of the Treaty on the Functioning of the European Union, they are mandatory in their entirety and have direct applicability in the EU Member States.

4. FORM OF THE ELECTRONIC DOCUMENT

Usually, the idea of a document is associated with the physical materialization of verbal signs on a certain material, most often paper. The written document can be written by hand, but also by means of technology. With the help of a computer and specialized software, the text can be formatted on a word processing program and subsequently printed on a printer. Although there is a file saved as a copy of the computer, the created document does not yet have the character of an electronic document. It is a project that, once printed and signed, will have the characteristics of a classic written document. Unlike a document objectified on paper, an electronic document does not need to exist on paper. It is sufficient that it is created by means of publicly available software and stored in a way that allows subjects to perceive it visually.

An electronic document is information in digital form [6]. This information may include different text, audio recordings, graphics or even databases. As mentioned above, an electronic document may contain a legally relevant verbal statement that materializes the will of the author, as well as contain other non-verbal information (sketch, diagram, project, etc.), including on a cloud server. For the existence of an electronic document, it is not necessary that it is present as a physical object in reality.

There are certain similarities, but also significant differences between a written document and an electronic one.

A significant difference between an electronic document and a written document is the form in which they exist. A written document is a verbal statement objectified on a material medium. An electronic document is a verbal statement presented in digital form, recorded on optical, magnetic or other media.

Written documents as physical properties do not change and reflect the will as it is expressed. Document manipulation is usually visible and leaves traces on the document itself. These traces – alterations, additions, strikethroughs – are visible and are perceived visually when the document is

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presented. Electronic documents and the statements contained therein can be manipulated. This change (editing or deliberate manipulation of digital information) may not be noticed, and in certain cases it is even impossible to establish that there is external interference with the electronic document [9].

A peculiarity is also found in the way the written and electronic document is perceived. The written document is perceived by the parties visually, "at first sight". Electronic documents are in digital form, which cannot be perceived directly by the addressees, but only after they have been transformed into a form receptive to the human senses using a generally accepted standard of transformation. Without a generally accepted standard for transformation, the information will remain in binary form – ones and zeros, respectively – and it will not be able to be perceived by the entities for which the electronic document has legal significance.

A written document usually exists in one original and can have many copies, i.e., we always have one original document and the corresponding copies of it. An electronic document, on the contrary, always exists in many originals, and practically every copy is an original, insofar as it cannot be distinguished from the original source. By using commands such as copy and paste, in practice, the electronic document does not create a copy; instead, it replicates all the information and creates an identical electronic document that does not differ from its original source.

5. ELECTRONIC SIGNATURES

As with the written document, so with the electronic one, the question of its authorship arises – who is the person who signed the document? The rights and obligations of the signed electronic document arise for its holder, i.e., the person in whose legal sphere the consequences of signing the electronic document will occur [8]. The signature is a sign of authorship of the document, but identifying the author of the electronic document poses a number of challenges. In principle, a handwritten signature is "biologically" related to its author, since it is affixed by a specific natural person and with the methods of graphological examination, it can be established with a high degree of probability who is the author of the signature.

On the subjective side, the signatory of the document should have an "animus signandi", i.e., he must have the desire to sign a certain document and the awareness that the signing will have the desired

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consequences. However, the signature itself only presumes that the person agrees with the content of the document he signs, as well as that he aims to achieve the desired legal consequences.

From an objective point of view, the signature is characterized by the fact that it is handwritten, usually with letters or signs, representing a physical act of the person from whom it originates and creating an apparent certainty of its authorship. The function of the signature is not only to identify its author, but also to confirm their will for the occurrence of the desired consequences as a result of the signature under the relevant document.

In contrast to the handwritten signature, ***the electronic signature*** reveals some essential features. In this case, the natural person who uses an electronic signature with the intention of signing the electronic document. This person also has animus signandi, i.e., the subjective attitude that by signing the electronic document in the legal sphere of the author, certain rights and obligations will arise. But uses technological means that bind the electronic signature to the respective electronic statement, thus objectifying and materializing his subjective intention to sign it.

The generic definition of "electronic signature" is given in Article 3, item 10 of Regulation (EU) No. 910/2014[1], which defines it as "data in electronic form, which are added to other data in electronic form or are logically related to them, and which the holder of the electronic signature uses to sign". The Regulation explicitly regulates which entities have the quality of author of the signature – this is the natural person who creates the electronic signature through software and the available technical collateral. The regulation uses the term "signatory", which literally means "signatory" [14]. The signatory is the entity that uses the relevant data in electronic form to identify itself. The Regulation itself does not allow a legal entity to be a holder (signatory) of the electronic signature. According to the Regulation, legal entities do not have their own electronic signature. It is permissible to add to the signature of the individual information about an organization to which he belongs or has some connection. This, however, does not bind the legal person, and no rights and obligations arise for it.

Whenever a person signs a document, he does so with the knowledge that by putting their handwritten signature, this will result in certain legal consequences that affect their personal or property

[1] Regulation (EU) No 910/2014 of the European Parliament and of the Council of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32014R0910

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legal sphere or the sphere of another person. In this sense, the subjects need to build a legal culture where the electronic signature is not just a technology, but through it, a number of changes can occur in the legal sphere of the persons who are "affected" by a legal relationship that has arisen and developed in an electronic environment.

A handwritten signature creates a sense of ceremony of the act of signing, but the qualified electronic signature has the same function. With regard to the electronic signature, however, its authenticity must also be examined in any case. Authenticity is a characteristic of an electronic document and is expressed in its 'reality', i.e., with a high degree of probability that the relevant electronic document can be attributed to its author.

An electronic signature can have the same legal value as a handwritten one; the peculiarity here is that, in a purely legal aspect, the document is created and arises in an electronic environment, and it may never be objectified on paper.

Another characteristic feature is that the handwritten signature, although written differently, always rests on a mechanism subordinated to the author's musculoskeletal habits. An electronic signature, unlike a handwritten one, is of three types - ordinary, advanced or qualified, and each type can be based on different and in most cases different technologies [12].

The difference between a qualified electronic signature and an ordinary and advanced electronic signature is that a qualified electronic signature is equated to a handwritten *ex lege*. While in the case of the ordinary and advanced electronic signature, it depends on the will of the parties – whether they will give them the equivalent of a handwritten signature, in the case of a qualified electronic signature, it does not depend on the will of the parties. The norm of Art. 25, item 2 of the Regulation creates a legal fiction – *the qualified electronic signature has the legal force and the effects of a handwritten signature*. This means that when the law requires a handwritten signature for the validity of a document, this requirement will be met if an electronic document is drawn up that is signed with a qualified electronic signature. It is important to note that while the Regulation allows the Member States to determine by their national law the legal force of the ordinary and advanced electronic signature, it has not provided such an opportunity for the qualified electronic signature [11]. *For it, the legal force of the handwritten signature has been established*, regardless of the regulation in national law.

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6. CONCLUSION

The analysis made so far has given us an answer to what the legal concept of an electronic document and its features are, without which we would not be able to understand the concept and, accordingly, the perception of electronic documents as electronic evidence that is essential in the process of proof. Regardless of whether the process develops before a court or in arbitration proceedings, it is essential for both proceedings to prove those facts that are relevant to a legal dispute. Electronic evidence, and in particular electronic documents used by the parties, can be decisive in resolving a legal dispute. Moreover, the global pandemic had an unprecedented impact on justice systems, which were not ready to respond to the challenges of digital transformation processes. In these conditions, society had to find options for resolving disputes between the parties, and with particular sharpness placed in the field of dynamic commercial relations, which have shifted from the analogue to the electronic world and in which, mainly, electronic documents are used as a means of establishing the occurrence, amendment and termination of the relevant civil law relations. Electronic documents are playing an increasingly important role in the process of proving and the correct understanding of the concepts of electronic document and electronic signature is essential for the process of law enforcement..

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DOCUMENTOS ELECTRÓNICOS COMO PRUEBA ELECTRÓNICA

RESUMEN

El desarrollo tecnológico ha llevado a que gran parte de las controversias trasciendan las fronteras nacionales y adquieran un carácter transfronterizo. Esto exige el estudio de la prueba electrónica, en particular de los documentos electrónicos, como un fenómeno jurídico cualitativamente nuevo, con su propia regulación independiente a nivel nacional y supranacional. Para comprender el concepto de "documento electrónico", se realizará una comparación con el documento escrito convencional, indicando las similitudes y diferencias entre ambos fenómenos jurídicos, así como las peculiaridades inherentes únicamente a los documentos electrónicos. El artículo explora el concepto de prueba electrónica en la resolución de conflictos mediante un enfoque de métodos mixtos que combina el análisis sistemático de la literatura y estudios de casos comparativos. Se analiza la definición legal de documento electrónico. El autor también concluye sobre la necesidad de replantear la teoría de la prueba física en el contexto de los documentos electrónicos.

Palabras clave: documento electrónico, firma electrónica, prueba electrónica, eIDAS

电子文件作为电子证据

摘要

技术的发展导致大量争议跨越国界，并具有跨境特征。这需要研究电子证据，尤其是电子文件，作为一种全新的法律现象，在国家和超国家层面拥有其独立的规制。为了理解"电子文件"的概念，本文将与传统的书面文件进行比较，指出这两种法律现象之间的异同，以及电子文件所固有的特性。本文采用系统文献分析和比较案例研究相结合的混合方法，探讨电子证据在冲突解决中的概念。分析了电子文件的法律定义。作者还总结了在电子文件背景下重新思考物证理论的必要性。

关键词：电子文件、电子签名、电子证据、eIDAS

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PROTECTION OF PERSONAL DATA FROM CYBER THREATS

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ABSTRACT | 摘要 | RESUMEN

Personal data has become a valuable business resource, but is increasingly targeted by cyberattacks and leaks. This study uses comparative legal analysis and formal legal methods to examine how citizens' data rights can be better protected in the digital age. Focusing on liability and data breaches, the paper compares Russia's personal data protection framework with European and American approaches. The findings suggest that effective protection requires more than just listing rights for data subjects—it demands enforceable guarantees in cyberspace. The study proposes both compliance and post-control measures aimed at preventing breaches and addressing their root causes. It also recommends assigning liability to data operators proportionate to the harm caused and remedied. The analysis of current laws and enforcement practices reveals that strengthening legal accountability and implementing preventive mechanisms are essential steps toward safeguarding personal data in an increasingly digital and interconnected world.

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1. INTRODUCTION

According to the norms of the Federal Law of July 27, 2006, No. 152-FZ "On Personal Data" (hereinafter referred to as the Federal Law on Personal Data), personal data is considered in a broad sense and means any information related to, directly or indirectly, a defined or an identified individual. Such formulation allows all emerging new types of information in the digital environment to be classified as personal data, such as IP address, cookies, email address, and others. This allows the legislation on personal data to remain relevant to this day from the moment of its adoption.

We may compare the Russian approach towards personal data with the European and global practice. According to the provisions of the General Data Protection Regulation (GDPR) of the European Union (hereinafter referred to as the GDPR), personal data is also any information relating to an identified or identifiable individual. The list of personal data is also indicated, such as name, identification number, location data, online identifier, and other factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of the individual. This definition is similar to the Russian one. In current realities, it is impossible to list all personal data; this is a task of judicial practice. Researchers state that it is still not possible to define in a precise and reliable manner the entire list. As a result, there may be legal uncertainty as to when data protection law applies in the context of data processing (Rupp, Grafenstein, 2024).

China's new Personal Information Law (PIPL) from November 2021 defines personal information as broadly as possible to cover the widest possible range of information. According to Article 4 of this law, personal information is all types of information recorded by electronic or other means relating to a specific or identifiable individual, with the exception of information after the use of anonymization technologies. Therefore, to process personal data, we require the consent of the data subject. The only limitation is that when anonymization is used, personal information ceases to relate to a specific or identifiable individual, and therefore, we do not need their consent. The Civil Code of the People's Republic of China also describes personal data broadly as information that can identify a natural person by itself or in combination with other information. As well as in the GDPR, it corresponds to the universal concept of direct and indirect identifiers of personal data [18]. However, it is not just the adoption but is has its own specifics influenced by domestic dynamics, cultural nuances, and China's unique data protection landscape [16].

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Some argue that while the GDPR provides for a consent-based privacy policy, the PIPL actually presents a compliance-based privacy policy that can even better promote both private and public interests [17]. Despite all the positive sides and novelties of the GDPR, it has its own critics. Researchers state that meaningful penalties for non-compliance are needed, as well as harmonised enforcement, the regulation stifles innovation narrative, defence of cross-border data rights, and proactive guidelines to address emerging technologies [5].

As for the US experience in the field of personal data, there is no single act at the federal level; this field of legislation is regulated at the state level. For example, the debatable California Consumer Privacy Act works with the broad definition of «personal information (data)» which includes everything from first name to search history or geolocation data. According to the Act, personal information means information that identifies, relates to, describes, is reasonably capable of being associated with, or could reasonably be linked, directly or indirectly, with a particular consumer or household. The legislation contains the following as personal information: 1) identifiers such as a real name, and others; 2) commercial information, including records of personal property; 3) biometric information; 4) Internet or other electronic network activity information; 5) geolocation data; 6) audio, electronic, visual, thermal, olfactory, or similar information; 7) professional or employment-related information; 8) education information; 9) profile about consumer's preferences, characteristics, psychological trends, predispositions, behavior, attitudes, intelligence, abilities, and aptitudes (The California Consumer Privacy Act). Although there is no specific list of everything that may be personal data, these groups are essential and give an exhaustive answer on what may be regarded as personal data (information) for the past 10 years. The enactment of this act was very debatable since the interests of all lobbying groups shall be taken into account, it is some kind of consensus between innovations and privacy, personal data as a commodity and as a right [4].

2. ISSUE OF LIABILITY

The consequence of violation of the legislation on personal data is administrative liability under Article 13.11 of the Code of Administrative Offenses of the Russian Federation of December 30, 2001, No. 195-FZ (hereinafter referred to as the Code of Administrative Offenses of the Russian Federation). Article 13.14 of the Code of Administrative Offenses of the Russian Federation is applied in cases where

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a person, who received access to personal data in connection with the performance of official or professional duties, allowed its disclosure.

For the disclosure of personal data, employees of an organization may also be subject to disciplinary action, for example, in the form of dismissal. And for damage caused to the employer as a result of the disclosure of information related to personal data, the employee is subject to financial liability in full, according to the Labor Code of the Russian Federation.

Criminal liability arises for more serious acts that supposedly may cause harm to the property or personal non-property rights of the data subject. As an example of causing such harm, one can cite the sending of personal messages, photos or videos of a citizen to third parties or posting them in the public domain. Such disclosure often takes place by posting information on the Internet.

Typically, such crimes are committed by bank employees or government officials. The following may serve as an example. In June and October 2021, a 35-year-old manager of the client department for servicing legal entities of the Kaliningrad branch of one of the banks, gave her friend information about the code word for identifying the client in the banking system and screenshots containing the full names, emails, mobile phone numbers and bank account numbers of two women – clients of the bank. This constituted a crime under Part 2 of Article 183 of the Criminal Code of the Russian Federation (illegal disclosure or use of information constituting a commercial, tax or bank secret).

Civil liability for leaks of personal data is also implied, but cases are rare, and the amounts of compensation are insignificant. As a result, companies are not so concerned about taking appropriate measures, including compliance, that would prevent personal data leaks in the future.

An example is the well-known leakage of Yandex.Food LLC's data, resulting in the public disclosure of personal data for 58,000 users. No more than twenty of them received small compensation. Yandex.Food LLC was charged with an administrative fine in the amount of 60 thousand Rubles (Yandex.Food LLC Civil Case of the First Instance No. 05-0413/101/2022). The "largest" amount of compensation to the affected personal data subjects, which the court recovered in this case, is 5,000 Rubles each of the 13 victims. Therefore, problems with confidentiality and personal data leaks have not been resolved, both in terms of their prevention and in terms of compensation for the harm caused.

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3. DATA LEAKAGE PREVENTION

The right to the protection of personal data, including in the digital environment in a situation of cyber threats, corresponds directly to the operator's obligation to take measures necessary and sufficient in order to ensure the fulfilment of their other duties (Article 18.1 of the Federal Law on Personal Data). Internal compliance is the implementation of internal control and/or audit of compliance of personal data processing with legislation and local acts of the personal data operator, including the operator's policy regarding the processing of personal data, which is of undeniable importance in light of the increasing frequency of personal data leaks.

The doctrine says that the term data leak itself is not used in the legislation; however, the Federal Security Service of Russia (Roskomnadzor) uses the term «personal data leaks» on its official website in the «incidents» section. Still, there is no interpretation of data leak or data leakage in the federal laws [19]. By the way, we may note that the legislator provides for the operator's obligation to detect facts of unauthorized access to personal data and take measures to detect, prevent, and eliminate the consequences of computer attacks on personal data information systems and to respond to computer incidents in them. In fact since July 2022, a mechanism for this interaction has appeared. The interaction is envisaged with the Roskomnadzor, the state system for detecting, preventing and eliminating the consequences of computer attacks on information resources of the Russian Federation (GosSOPKA) in connection with the unlawful dissemination of personal data.

A more recent innovation in Russian legislation, in our opinion, based on the experience of the European GDPR, «gold standard of data protection» [3], regulates the operator's procedure in the event of a personal data leak and their obligation to notify Roskomnadzor about it. This establishes a rule aimed at eliminating the consequences of personal data leaks and preventing new leaks based on the results of an internal investigation, which must be carried out within 72 hours from the moment of personal data leak, and interaction with Roskomnadzor. The purpose of this was to enhance the level of protection for the personal data of Russian citizens against potential leaks, as well as to enable Roskomnadzor to respond more quickly to such incidents. The GDPR also mandates a personal data protection impact assessment, specifying when this is necessary.

Another change in Russian legislation on personal data is the operator's obligation to assess the harm that may be caused to personal data subjects in the event of a violation of obligations by the operator.

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Based on this, Roskomnadzor established rules for assessing the harm that may be caused to subjects of personal data. Of course, this can affect the amount of compensation for harm and the practice of their implementation, but we should not forget that the key in this area should be the prevention of harm to subjects of personal data due to leaks and effective mechanisms to reduce the harm caused.

Article 51 of the Chinese law on personal data (personal information) obliges operators to formulate an internal management structure and rules for dealing with personal information, implement processes for managing personal information depending on their category, and technical protection measures (encryption, de-identification), formulate and implement a plan for responding to incidents related to personal information. That is, internal compliance is actually stipulated. External checks (audits) of compliance with legislation on personal information are also envisaged. Article 55 provides for an impact assessment on personal information, its protection, similar to the GDPR, in certain cases, which is broadly prescribed, such as "cases which may have a significant impact on individuals."

Noteworthy Article 58 of the Chinese law obliges operators of personal information providing important platform Internet services:

- monitor the protection of personal information;

- form an independent body to oversee the protection of personal information;

- stop providing a service or product that seriously violates the law on personal information;

- regularly publish reports on the protection of personal information.

In addition to this, in the Cybersecurity Law, enacted in China in 2016 [1], states measures that shall be taken to prevent unlawful obtaining of personal data, including stealing and data leaks. Some chapters of this Law specify remedial actions that shall be taken after data breaches.

This actually reflects the Chinese approach towards personal data protection: publicity, on the one hand, and a great role of the state, on the other hand. Activities of data operators in China are more tightly regulated, meaning greater accountability to authorities and greater liability for personal data leaks.

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4. ENFORCEMENT OF PROVISIONS ON PERSONAL DATA PROTECTION

As for European practice, of course, the GDPR played an undeniable role in shaping the obligations of operators and cases of holding them accountable, including for the disclosure of personal data to third parties as a result of leaks. Overall, fines imposed under the GDPR have reached phenomenal amounts, amounting to millions or even billions of euros. An example is the €265 million fine imposed on Meta by the Irish Data Protection Authority. The investigation began after media reports that certain information containing personal data of users of the social network Facebook appeared on a publicly accessible hacker platform. This leak of personal data affected the rights and legitimate interests of more than 530 million users, whose personal data (phone numbers and email addresses) were disclosed to third parties without their consent (Data Privacy Manager, 2024). The investigation examined Facebook's search tools, as well as Facebook Messenger and Instagram contact importers (Meta Platforms (social networks Facebook and Instagram) are prohibited in Russia. Based on the results of an analysis of the implementation of organizational and technical measures for the protection of personal data, the Irish Personal Data Protection Authority discovered a violation of Article 25 of the GDPR, and Meta Holding was held liable in the form of a fine. The considered example shows the importance and necessity for a company operating in European markets to take preventive measures in order to combat personal data leaks.

As for the Chinese experience, due to the changes in the legislation and the need to comply with the law, the number of data leaks significantly decreased. Enhanced data security measures increase companies' value and sustainability as well as promote social responsibility to all stakeholders [20].

Analysis of Russian practice shows that effective mechanisms for protecting rights and influencing offenders are needed in order to make the protection of personal data a reality. The Russian doctrine notes that a leak, in general, which constitutes an administrative offense, can be a consequence of both the deliberate actions of the personal data operator (his employees), and can be the result of a hacker attack on the operator's information systems in situations where the operator has not taken sufficient and reasonable measures [12].

In total, fines imposed on operators for personal data leaks in 2023 amounted to more than 3.7 million Rubles. A famous case is the leak of personal data of employees, students and applicants of the Higher School of Economics (Hse.ru, 2023). Despite the fact that the investigation of the leak of personal data was carried out by the educational institution on time, in accordance with the part 3.1 of the Article

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21 of the Federal Law "On Personal Data", Roskomnadzor was notified of this situation, the court district of the magistrate No. 387 in the Basmanny District of Moscow fined the Higher School of Economics 60 thousand Rubles for leaking personal data under the part 1 of the Article 13.11 of the Code of Administrative Offenses of the Russian Federation ("Processing of personal data in cases not provided for by the legislation of the Russian Federation"). At the same time, the problem that arose was not properly resolved, and there are reasonable suspicions that personal data were made publicly available on the Internet.

This practice of data leaks continues in 2024, 2025 and is to continue in the future. When a leak is detected (the leak is reported to Roskomnadzor), formal measures are taken, and no substantial (preventive or restorative) measures are taken to eliminate the consequences of the leak. An example of this is the leak of a database with personal data of clients of the insurance company "Spasskie Vorota" in September 2024. This database was made publicly available on one of the shadow forums. It contains about 70 thousand unique phone numbers, 100 thousand unique email addresses, hashed passwords and other information, including API access logs on the spasskievorota.ru server. In turn, the insurance company "Spasskie Vorota" sent information on the leak of personal data of clients to Roskomnadzor. This was reported after the media reported on the alleged leak of the company's clients ' data. In 2024, overall, Roskomnadzor recorded 135 cases of database leaks, which contained more than 710 million records about Russian citizens.

At the end of August 2024, the World Class fitness club chain was subjected to a hacker attack, which resulted in the leak of personal data of hundreds of thousands of visitors. In particular, the 1C:Enterprise database with a volume of more than 146 GB was made publicly available in the Internet.

An analysis of judicial practice leads to the conclusion that, as a rule, an organization is presumed to be guilty if there is a leak of personal data in its information systems. That is, the very fact of a leak of personal data in an organization entails its legal, above all, administrative responsibility. The issue of insufficient measures taken by the organization is not investigated. The courts proceed from the assumption that the organization had a real opportunity to ensure compliance with the requirements of the law, that is, to prevent the leakage of personal data. Courts suppose that the operator must ensure the security of access to the personal data of its clients, and the measures taken by the operator are not examined in detail (Resolution of the Magistrate's Court of the Judicial Precinct No. 374 of the Tagansky District of Moscow dated March 17, 2023 in Case No. 5-240/2023).

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As a result, the one who is to protect the personal data of clients (operator) is fined, and the amount of the fine is not substantial. However, persons who, in reality, through their malicious actions, have unlawfully accessed personal data go unpunished, and leaks continue to occur. Thus, the question arises of how it is possible to ensure and improve the level of protection of personal data in the current situation: cyberattacks and cyber threats, in a situation in which personal data can become publicly available on the Internet and used by attackers.

5. CHANGES IN LEGISLATION REGARDING PERSONAL DATA LEAKS

In accordance with Part 3.1 of Article 21 of the Federal Law on personal data, the Roskomnadzor is notified by the personal data operator about the leak of personal data that has occurred. In order to record information about the leak of personal data, the Roskomnadzor maintains a special register, defining the procedure and conditions for interaction with operators within its jurisdiction (part 10 of Article 23 of the Federal Law on Personal Data). It is also interesting to note that in this notification, the Roskomnadzor, as an authorized body, is notified of the compromised personal data database, the alleged causes of the incident, harm to the subjects of personal data, and the measures taken to eliminate the consequences of the leak of personal data. Are these measures sufficient to prevent new leaks of personal data and effectively apply the rules on the protection of the rights of personal data subjects in the digital environment?

Various points of view were expressed in order to improve the current legislation on personal data. By analogy with the European data protection regulation, GDPR, it was proposed to establish negotiable fines against operators who have committed an unlawful or accidental leak of personal data. It was proposed even to establish criminal liability for the illegal collection, storage, use, and transfer of personal data databases, which is aimed at combating the consequences of personal data leaks.

The Bill No. 502104-8 "On Amendments to the Code of the Russian Federation on Administrative Offences" was enacted. This Bill, in general, tightens responsibility, differentiating it depending on the amount of personal data subjected to leakage and the affected subjects of that data. In the event of repeated violations of the duty of confidentiality regarding personal data, this bill provides for turnover fines (fines as a percentage of revenue). The Bill on Amendments to the Criminal Code of the Russian Federation

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provides for criminal liability for persons who illegally collect, store, use and/or transfer computer information containing personal data obtained through unlawful access to means of storing, processing or transmitting computer information or by other illegal means.

The issue of insurance against personal data leaks is also being considered in the doctrine and practice. The idea is to conclude agreements with insurance organizations or create a compensation fund from which payments will be made to persons affected by personal data leaks. In view of the above, it is necessary not only to tighten responsibility, which will lead to the concealment of cases of personal data leaks [9], but also to take actions to smooth over the harm and prevent its occurrence.

The amendments specified above shall be assessed positively, but the legislator's attention shall be focused not only on strengthening legal liability for personal data leaks, but also on preventing leaks by introducing measures for internal compliance and informing the public as provided for in Chinese law.

However, the Ministry of Digital Development, Communications and Mass Media of Russia plans to introduce mandatory notification of citizens about cases of leakage of their personal data. This initiative is being discussed after the adoption of a law toughening penalties for such incidents. This was announced at the end of May 2024 by the Deputy Chairman of the Council for the Development of the Digital Economy. This sounds reasonable, but may require additional state budget funds, so a financial justification is needed for such a measure.

In foreign literature, not only legal literature, the issue of the impact of fines on the number of personal data leaks is discussed. The most common cases of personal data leakages include: 1) a hack by an external party or malware; 2) port (leakage by using a portable device); 3) stat (leakage by a stationary computer loss); 4) inside management and people's capital problems (due to employee's, contractor's or customer's fault); 5) some kind of unintended disclosure not involving hacking, intentional breach or physical loss; 6) physical loss (paper documents are lost, discarded or stolen); 7) card's leakage (frauds with data involving debit and credit cards). According to the research, data breaches caused by hacking account for a third of all cases. The next important case for data leakage is human intentional acts that accounts for a fourth of all cases [7].

These statistics are fully consistent with he Russian legal reality: the results of data breach and leakage cases in Russian courts, legal issues of determining and identifying persons who committed a

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hacker attack, and issues of holding employees and other persons accountable to the personal data operator.

6. PROTECTIVE MEASURES THAT MAY PREVENT OR STOP PERSONAL DATA LEAKS

Some researchers focus not only on liability measures, but also on protective measures that may prevent or stop personal data leaks. Users often transmit personal data through smartphones and personal computers, which can be used, including for illegal purposes, by other persons. That is, users need to be more vigilant, aware of their rights and legal consequences. In this sense, the emphasis is on the need for subjects of personal data to take some self-defence measures, which allows them to ensure the safety of their own personal data.

Nowadays, a person, without even realizing it, provides a vast amount of information about themselves to various companies every minute. The more personal data about a person is collected and processed, the higher the risk of violating their right to the protection of personal data [13]. All this is a prerequisite for personal data leaks and gives rise to different problems in law enforcement. However, it seems that much of taking measures to protect personal data should also depend on personal data operators and on what measures they take to prevent and eliminate personal data leaks. Accordingly, it seems illogical to assign the full legal consequences solely to the subjects of personal data who act as consumers.

Nowadays, in an information society, such services are offered as monitoring customer data (searching for published leaks and aggregated arrays of accounts, as well as data related to the customer's information systems). Additionally, these services include monitoring shadow forums and DarkNet platforms for leaks of internal business or customer information. This presumes preparation and constant update of a list of features (data formats, keywords, etc.) indicating the ownership of information.

As far as data leaks are concerned, investigating incidents related to data leaks is needed, which includes an analysis of sources and prerequisites for data leaks. This way, evidence for appeals to law enforcement agencies and for civil proceedings is collected.

As far as banks are concerned, we need to identify insiders who may be involved in the theft of data. This is made by the use of the content analysis of information sold on the black market and by testing the capabilities of employees for unauthorized access to information resources.

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The use of such protective measures significantly reduces the likelihood of sensitive data being leaked by intruders due to the timely identification of vulnerabilities and the adoption of appropriate measures.

In this context, V.V. Arkhipov, correctly points out that recognizing personal data not as goods, as some in the doctrine indicate, but as an intangible benefit, will help to combat violations in this field. M.A. Rozhkova, acknowledging the existence of the concept of personal data as a commodity [10], notes that if personal data is not anonymized (clause 9 of Article 3, part 7 of Article 5, clause 9 of part 1 of Article 6 of the Law on Personal Data), it cannot be used in civil circulation. In turn, big data, which includes anonymized personal data, may be the object of civil law transactions [15]. These approaches seem to be correct. At the same time, practice appears to have taken a different path. Thus, personal data is universally recognized as a commodity. For example, when registering on a social network, we "pay" with personal data. By providing our personal data as if for free, in fact, in exchange for the advertising provided and the use of our personal data by other services for commercial purposes, we receive the use of social network services for communication, promotion of our own goods and services, use of news aggregators, etc.

V.I. Soldatova, noting, in general, the problem of insecurity of citizens' personal data from unauthorized access by an unlimited number of persons [14], comes to the conclusion that the available means of protecting personal data are insufficient in the context of the use of digital technologies, and increased liability is necessary. It is, of course, necessary to agree with this; however, emphasizing the fact that it would be necessary to provide not just for the increased legal liability, but also for the effective mechanisms for compensating harm to those affected by leaks and the implementation of measures aimed at preventing leaks of personal data.

A.Yu. Burova also notes that we should avoid uniform user consent for the processing of personal data in all services of the digital platform ecosystem, as this may lead to an increased risk of leakage of the user's personal data [6]. A reasonable approach to protecting the rights to personal data will, indeed, allow a subject of personal data if not prevent, then at least to minimize the consequences of leaks.

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7. CONCLUSIONS

It seems that in the current situation, it is necessary to implement appropriate preventive measures that would allow a priori to minimize leaks of users' personal data. Compliance may be used in order to technically and legally identify existing risks to the security of personal data, violations by an operator of certain legal provisions, and access of third parties to personal data, etc. Such measures, of course, should be implemented in local regulations at the level of personal data operators, and legislation shall also be improved in order to clarify the requirements for compliance, which in general are already provided for by current legal norms. In addition, at the level of market entities, employees shall be trained on an ongoing basis in the basics of secure management of personal data in order to understand what the misuse of personal data is and prevent it.

Of course, post-control is also necessary, which consists of checking an operator's activities for violations that led to the leakage of personal data. The law enforcement body (Roskomnadzor) can thus identify the exact cause of the leak of personal data and how it can be prevented in the future.

An integrated approach, including both preventing harm and assessing an operator's activities for violations, is to change the current situation with the circulation of personal data. It is necessary not only to minimize the consequences of leaks and encourage operators to comply with legislation on personal data by strengthening liability measures, but also to prevent and eliminate the causes of personal data leaks. The above will help reduce the number of personal data leaks in the Russian Federation and minimize the negative consequences of the state, business and society.

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PROTECCIÓN DE DATOS PERSONALES CONTRA CIBERAMENAZAS

RESUMEN

Los datos personales se han convertido en un valioso recurso empresarial, pero cada vez son más blanco de ciberataques y filtraciones. Este estudio utiliza análisis jurídico comparativo y métodos legales formales para examinar cómo se pueden proteger mejor los derechos de los ciudadanos sobre sus datos en la era digital. Centrándose en la responsabilidad y las filtraciones de datos, el documento compara el marco de protección de datos personales de Rusia con los enfoques europeos y estadounidenses. Los hallazgos sugieren que una protección eficaz requiere más que simplemente enumerar los derechos de los titulares de los datos; exige garantías exigibles en el ciberespacio. El estudio propone medidas de cumplimiento normativo y control posterior destinadas a prevenir las filtraciones y abordar sus causas fundamentales. También recomienda asignar responsabilidad a los operadores de datos proporcional al daño causado y reparado. El análisis de la legislación vigente y las prácticas de aplicación revela que fortalecer la responsabilidad legal e implementar mecanismos preventivos son pasos esenciales para salvaguardar los datos personales en un mundo cada vez más digital e interconectado.

Palabras clave: datos personales, protección de datos personales, filtración de datos, ciberataque, operador de datos personales

保护个人数据免受网络威胁

摘要

个人数据已成为宝贵的商业资源，但日益成为网络攻击和泄露的目标。本研究运用比较法律分析和正式法律方法，探讨如何在数字时代更好地保护公民的数据权利。本文聚焦责任和数据泄露，将俄罗斯的个人数据保护框架与欧美的做法进行了比较。研究结果表明，有效的保护不仅仅需要列举数据主体的权利，还需要在网络空间提供可执行的保障。本研究提出了合规和事后控制措施，旨在预防数据泄露并解决其根本原因。研究还建议根据造成的损害和补救措施，向数据运营者追究责任。对现行法律和执法实践的分析表明，在日益数字化和互联互通的世界中，加强法律问责和实施预防机制是保护个人数据的关键步骤。

关键词：个人数据、个人数据保护、数据泄露、网络攻击、个人数据运营者

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DOES ARTIFICIAL INTELLIGENCE HELP WOMEN IN INTERNATIONAL ARBITRATION? A FEW REMARKS ON DIVERSITY IN ARBITRAL TRIBUNALS

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ABSTRACT | 摘要 | RESUMEN

New technologies are transforming international arbitration, with institutions adopting digital tools and case management systems to streamline proceedings. Artificial Intelligence (AI), in particular, is reshaping the field by introducing innovation-driven solutions that enhance efficiency. This article explores AI's role in international arbitration, focusing on its potential to improve gender diversity in the appointment of arbitrators. Specifically, it examines whether AI-based selection tools can reduce discrimination and challenge entrenched stereotypes, such as the dominance of the "male, pale, and stale" profile in arbitral tribunals. The study suggests that AI could mark a turning point by promoting more inclusive selection processes. However, this potential hinges on the development of unbiased, well-programmed AI systems. While AI offers a promising path toward increasing diversity, its effectiveness will depend on its ability to avoid replicating existing biases and ensure fairness in the selection and appointment of women arbitrators.

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1. INTRODUCTION

Innovations are widely used in the legal industry, and international arbitration is no exception in this regard. There are many new solutions that have been implemented for the sake of improving the daily work of arbitral institutions and arbitrators [11]. In addition, innovation-driven technologies, including Artificial Intelligence (AI), are having a significant impact on the legal industry and are even changing the landscape of dispute resolution. As a result, new technologies are widely seen as a way to improve the entire arbitration process through greater efficiency and thus lower costs of the proceedings. Various arbitral institutions worldwide are competing with each other and offering their own solutions, including case management systems. Nowadays, the proper use of such technologies has become a priority for arbitration itself [12].

This article aims to identify the use of AI in international arbitration in general and then to focus on its potential application in relation to the selection and appointment of arbitrators. This begs the question of whether such an AI tool could be seen as improving the level of diversity within the arbitral tribunals and thus reducing the level of discrimination in the appointment of women as arbitrators. One must note that currently there is a stereotype of arbitrators such as "male, pale and stale" [8]. Therefore, it seems crucial to analyze whether the new technologies, including AI, could be seen as a solution to this challenging problem of diversity in international arbitration. Likewise, it is also worth examining whether this AI tool could be recognized as a turning point in the process of selecting and appointing arbitrators.

2. INNOVATIONS IN INTERNATIONAL ARBITRATION

At the outset, it is worth defining the term "innovation" in the context of international arbitration. This raises the question of whether both arbitral institutions and the practice of arbitration as a whole are innovative. Indeed, this question relates to the expected products of such innovation, namely efficiency or effectiveness. Therefore, according to Alex Ryan and Jerry Koh of the MaRS Solution Lab, innovation could be defined as "the invention of a new way of creating significantly more value and the adoption of the invention at scale" [9]. In fact, this definition requires that innovations must represent something novel (that is, something that has not existed before), which leads to a gain in value creation and must turn into the "new normal". Despite these specific criteria, lawyers are rather hyper-optimistic and call almost

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everything an innovation. Even though such a practice is widespread, it is necessary to re-evaluate recent improvements in international arbitration in view of the aforementioned definition of innovation itself. In this light, a new question arises as to whether to classify "compressed timetables/fast tracks, diversity initiatives, publication of awards, regional centres, arbitrator performance ratings, codes of conduct, and evidence disclosure rules" [9]. Even if such changes could be classified as innovation in improving the overall process, many others are more moral and ethical imperatives.

There are many different types of measures that have been adopted in international arbitration. Firstly, the so-called "fast-track proceedings" have been introduced for the sake of shortening the time limits of the entire arbitral proceedings. Therefore, in view of this improvement, it is possible to expedite the appointment of the arbitral tribunal, the organization of the case management conference (CMC), the filing deadlines and even the rendering of the arbitral award. Similarly, under these "fast-track proceedings", an arbitral tribunal benefits from its discretionary power in view of procedural measures, the appointment of a sole arbitrator and even the means of handling hearings, among others. Such an innovation was introduced by the International Chamber of Commerce (ICC) in 2017. As such, the ICC has amended its rules to include provisions on fast-track proceedings under the name of "Expedited procedure" [9].

Another example is the Prague Rules (also known as the Rules on the Efficient Conduct of Procedures in International Arbitration), which were introduced for the sake of enhancing efficiency and reducing the costs of the arbitral proceedings. Even if they contain practical solutions that are worth watching, they have limited practical implications for international arbitration. Apparently, such a solution may result from the fact that the Prague Rules will only apply if parties so agree or if the arbitral tribunal makes such a decision based on its own initiative (after consultation with the parties involved). In addition, "While the Prague Rules are thus a potentially useful case management tool for skilled arbitrators sitting in cases with sophisticated parties, they also provide a potentially cautionary tale on why the arbitration community threatens to alienate its user base even with initiatives that purport to serve it" [9].

Finally, the innovation-driven technologies had a significant impact on the way disputes are resolved. One of the most important changes relates to the emergence of artificial intelligence in international arbitration.

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3. AI TOOLS IN INTERNATIONAL ARBITRATION: PAST EXPERIENCE AND FUTURE CHALLENGES

Innovation-driven technologies and their evolution are changing the landscape of international dispute resolution. In the context of more international, complex and time-sensitive disputes, both private and state parties are choosing to handle their disputes through arbitration. Indeed, this mechanism of dispute resolution based on technology provides many advantages, including those related to privacy, fairness, cost control and even expertise in a particular field. At the outset, simple technologies have been introduced, such as email, digital data maintenance, and online case management platforms. Indeed, such solutions have changed the inter-personal relationships between different actors of the arbitral proceedings. In addition, it is worth remembering that the pace of change within the framework of international arbitration is a next step towards a more pro-technological stance. Therefore, the process of integrating technology into arbitration has become a reality. The COVID-19 pandemic has forced the international community to implement such solutions more quickly to reduce face-to-face interactions between the parties involved in the arbitral proceedings. As a result, rapid and cost-effective mechanisms have been launched to handle disputes during the global pandemic. Even though new technologies, including cloud storage, e-disclosure, and video conferencing, along with online platforms, have been adopted, more advanced technologies are already on their way. A turning point has been reached thanks to the emergence of artificial intelligence (AI), which has simply revolutionized the landscape of international arbitration [4].

Indeed, the AI has provided many interesting tools that are useful in terms of facilitating the day-to-day work of practitioners involved in international arbitration [15]. At the same time, there are many fears and speculations based on claims that AI will replace human judgment [16]. Rather, the current trend should be analyzed from the perspective of improving the arbitral proceedings. Such tools are widely available to arbitration practitioners around the world. In the face of AI, arbitration itself may prove to be more efficient. Against this background, generative AI seems to be a promising tool that not only increases efficiency but also provides deeper insights in addition to a certain level of precision [6]. Even though both lawyers and arbitrators might feel inclined to use AI in drafting their written submissions or arbitral awards, there are no rules governing these issues thus far. The cornerstone has been laid by the Silicon Valley Arbitration & Mediation Center (SVAMC), which released the final Guidelines on the Use of Artificial Intelligence in Arbitration on 30th April 2024. These Guidelines should be seen as providing for

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a fair, secure and properly balanced use of AI throughout the arbitration. Importantly, the Guidelines define AI as "any computer system that perform[s] tasks commonly associated with human cognition, such as understanding natural language, recognizing complex semantic patterns and generating human-like outputs" [1].

Indeed, there is no doubt that AI is widely used in international arbitration. Therefore, large language models, commonly known as LLMs, play a crucial role in generative AI. It is worth adding that such LLMs are based on training materials stemming from books, images, and websites. This means that LLMs could be classified as generative pre-trained transformers (GPT) and function as the basis for other platforms such as ChatGPT and Anthropic's Claude. In other words, the generative AI's Natural Language Processing (NLP) has been empowered not only to fully "understand" but also interpret, and even generate language like humans. Apparently, such a feature, albeit not perfect, is realized at a relatively advanced level. In addition, it represents deep "understanding" allowing to identify patterns, relationships and even anomalies in a very short time [6].

Reliance on NLP tools could significantly reduce the workload of lawyers, arbitrators and arbitral tribunals. Apparently, NLP is based on a special type of software that can easily read "natural language", namely, the human language. In practice, NLP allows for contextualizing the language and gives accurate results in terms of legal texts' analysis. To illustrate, such a tool could properly analyze an arbitration clause and identify both the lex arbitri and the lex loci arbitri. Likewise, NLP could provide translations of documents in different languages during the arbitral proceedings (Waqar, 2022).

Bearing in mind these features of LLMs, both arbitral tribunals and arbitrators may make use of LLMs on a daily basis for the sake of improving the quality and even efficiency in performing tasks. To illustrate, LLMs may be widely applied in document analysis thanks to search and index tools. Given this feature, it is possible to ask a question concerning a huge document set's content. Compared to tools providing only findings of certain words within the document, this AI can analyze the meaning of the content provided. Therefore, such an AI could facilitate the life of arbitrators dealing with a large set of documents in ongoing arbitral proceedings. An arbitrator may upload such documents and ask AI to make an analysis based on a particular fact. There are also more advanced AI tools which offer the possibility to link sources in the document set. This means that once an arbitrator asks this AI about some facts, he gets the firsthand information through the direct link to the relevant pages in the document. Indeed, such

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a solution would be of interest in the case of preparing for a hearing or even during the real-time proceedings [6].

In addition, AI tools have been trained to compare content within various documents. Thus, they can easily speed up the process of finding both similarities and differences in the case. Likewise, an arbitrator may benefit from this AI tool to check whether there are any evidentiary inconsistencies among multiple transcripts. Interestingly, it is worth mentioning AI tools that are specialized in contracts. In practice, such an AI platform helps to identify contract provisions that are spread throughout the entire document [6].

Finally, AI tools can provide a summary of documents in a very short time. Therefore, arbitrators can save time by asking this AI to generate a detailed summary of the needed content, such as a preliminary hearing, for instance. The same applies in the case of timelines. Based on the case analysis, AI can provide a timeline for the ongoing proceedings. As such, there is no need to undergo the entire process manually. AI can identify, compile, and lastly order various data like a human being [6].

Overall, one must note that the use of AI has been analyzed through the lens of enhancing the decision-making process and improving the efficiency of the arbitral proceedings that could be achieved in different ways. AI tools may be useful in providing document review and e-discovery. Through their ability to review a relatively huge amount of data, they may identify the relevant evidence when needed. Indeed, it can reduce both the time and cost compared to the traditional ways. In addition, AI tools are empowered with predictive skills. This means that they can analyze previous arbitral cases and predict the possible outcome in the ongoing proceedings. Likewise, arbitration practitioners may benefit from such AI-powered tools to conduct research in terms of finding case law and precedents in a more efficient way. Through such actions, they can save time and even increase the quality of their legal argumentation. AI seems to be helpful in checking whether there is compliance between arbitral proceedings and applicable laws and regulations. AI also provides solutions to ensure due diligence processes throughout the implementation of mechanisms that can easily discover any probable conflicts of interest. Similarly, AI assists in case management through such actions as automating scheduling, meeting deadlines and managing documents. In addition, there are also AI-driven online dispute resolution (ODR) platforms that provide the possibility to solve disputes fully online based on automated communication alongside much easier negotiations. Interestingly, the proper use of AI can be beneficial in terms of ensuring data security and privacy of arbitral proceedings. AI can easily identify and prevent data breaches alongside authorized

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access. Given that, AI should be seen as a tool, taking care to comply with the regulations on data protection. Apparently, there is a consensus that AI should function as a supportive tool in the decision-making process and thus render an arbitral award. One must note, however, that AI can support the decision-making process by analyzing evidence, identifying patterns and even providing information, once needed, to the arbitral tribunals [4]. Such actions, even limited in their scope, should be seen as a response to the overloaded arbitrators who can transfer some lengthy and strictly analytical work to the AI tools.

The above-mentioned applications of AI tools in arbitration seem to be the cornerstone for speeding up the entire process. Many solutions can be easily implemented in the daily work of arbitrators. Considering these examples, it seems that there are no risks in using AI tools in arbitration in this way. In fact, such AI is used only as a tool that does not affect the ongoing arbitral proceedings on the merits of the case. On the contrary, it also provides solutions to facilitate the daily work of arbitrators and arbitral tribunals. Nonetheless, the process of rendering an award is still handled by a human arbitrator. Therefore, such an application of AI tools should be allowed in light of respecting the fundamental principles of arbitration itself.

Even though there are many benefits or advantages of making use of AI in international arbitration, it is also important to pay attention to the challenges ahead. Indeed, any potential risks that may arise in the wake of using AI depend on the context in which such a tool has been implemented. The use of AI within the ongoing arbitral proceedings may result in some challenging procedural issues. To illustrate, the AI may use inaccurate wording while translating documents, which could impact the evidence or even the integrity of the arbitration process. Once there are any problems concerning the due process and fairness of the arbitration itself, it may give rise to possible problems with the enforcement of arbitral awards rendered in such proceedings. Therefore, it seems crucial to follow the newly adopted regulations on these issues, namely the law applicable at the place of enforcement (aside from the law of the seat) alongside the enforceability of any award [4].

Considering these risks, it seems important to use AI tools cautiously within the framework of international arbitration. On the one hand, there is a consensus saying that AI tools may significantly speed up the arbitral process, enhance the credibility and even persuasiveness of the arguments. On the other hand, the misuse of such tools may lead to severe consequences for the parties involved in the proceedings, with an unenforceable arbitral award as a result. This means that AI should still be used cautiously during the arbitration process to avoid possible challenges for that reason.

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4. SIGNIFICANCE OF AI SELECTION TOOLS IN APPOINTING WOMEN ON ARBITRAL PANELS

AI also has the potential to appoint arbitrators in the proceedings. Indeed, it is possible to identify both advantages and challenges of such a solution.

Considering advantages, AI tools may easily gather all necessary information related to a potential arbitrator, even that which has been disclosed by the arbitral institutions. The latter refers to the attempts made by arbitral tribunals to enhance transparency during arbitral proceedings. In addition, the analysis of such information would be easier and less time-consuming when made by an AI tool instead of a human being. Importantly, AI could also be helpful in ensuring that an arbitrator is both impartial and independent, alongside having a good reputation on the issues significant from the perspective of the parties involved in the arbitral proceedings. Indeed, using such AI tools may be crucial in reducing potential conflicts of interest and positively impacting the diversity in arbitration. In practice, parties would have the possibility to select their arbitrator from the wider group, given the merits and some more sophisticated criteria. Therefore, personal beliefs and some prejudices would not play any role once this solution is adopted. It is worth stressing that both "Equal Representation in Arbitration Pledge" and "ArbitralWomen" are in favour of such unbiased decisions made on arbitral panels [3].

Daniel Becker and Ricardo Dalmaso Marques point out that "technology may assist the parties in arbitrators' selection by allowing them to (finally) obtain reliable data regarding their patterns, social and professional networks, as well as previous and current appointments and performances. If properly used, although it may not entirely solve the diversity issue for now, it could become an efficient weapon in the fight for a stronger and more legitimate process of selection and evaluation of arbitrators" [3]. This entails that the parties, arbitral institutions and other arbitrators would still have the power to make final choices on the selection of arbitrators. However, the selection process would be based on reliable data such as the aspects and qualities of arbitrators. It is thus worth remembering that many features of arbitrators could be even unnoticed, unreachable or underestimated during the arbitral proceedings, and AI tools help to fill this gap [3].

On the one hand, the proper training of AI tools may result in positive consequences by providing objective criteria. Given that, it would be much easier to improve and enhance the entire process of selecting and further appointing members of the arbitral tribunal. On the other hand, the key issue is to

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find a "golden mean" in teaching algorithms that would be free of biases. Even though the input of proper data should be seen as a response to this challenging problem, there are still many pitfalls ahead. Indeed, the automated decisions still remain far from being classified as "bias-free". This entails that the international arbitration community should join its efforts in addressing such challenges both carefully and mindfully. Such cooperation would be handled for the sake of avoiding possible backlash in biased appointments. For that reason, sensitive data, including gender, age, ethnicity, religion, and many others, should not be uploaded or used carefully. Thanks to such preventive actions, it would be possible to avoid or at least anticipate undesired outcomes stemming from automated processes [2], [3].

Even though AI may make such decisions, there are some challenges that need to be addressed while dealing with the process of both the selection and appointment of arbitrators by AI tools. To name a few, one of the most challenging issues refers to the objectives of making appointments. On one hand, the arbitral institutions aim to select fair, impartial and robust arbitrators. On the other hand, the parties involved in the proceedings pay much more attention and thus prioritize these arbitrators who are much more predictable in rendering arbitral awards with the expected outcome. In addition, the process of proper AI training would be costly. To tackle this practical problem, arbitral institutions may join their efforts in developing such AI tools which would best fit their needs. Finally, another challenge relates to the available data that are crucial in terms of arbitrator's selection, namely the previous decisions, personal opinions or even biases. Given the historical data on the composition of arbitral tribunals, stereotypes on arbitrators such as "male, pale and stale" may arise as a result. It is worth adding, however, that the SVAMC AI Guidelines touch upon the AI tools and the possibility of their use in the process of selection and appointment of arbitrators. In general, these Guidelines allow such use, but they are against a full reliance on the result provided by an AI. Therefore, according to the SVAMC AI Guideline 1, "without human input or without assessing the AI tool's selection critically and independently or controlling for biases and other limitations" [8].

It is worth noting, after Kabir Duggal and Amanda Lee, that arbitral panels representing the "male, pale and stale" stereotype will, over time, come to be seen as defective, as they do not reflect the composition of society in a broad sense. Where appointments are being made by arbitral institutions of prospective arbitrators, they should propose a more diverse list of arbitrators. Co-arbitrators engaged in choosing a presiding arbitrator should likewise broaden the pool of arbitrators that they consider for selection" [5].

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Indeed, the proper training of algorithms plays a crucial role in appointing arbitrators. The problem arises in how to properly define a "suitable or good arbitrator," as there is no objective definition thus far. Against this background, the AI "may consider a well-ranked arbitrator as one who has a good availability, renders awards fast, etc. Therefore, as an example, the algorithm may understand that it makes more sense to appoint men over pregnant women on temporary leave. Hence, this (unforgivable and mistaken) bias could lower the score and rank of potential female arbitrators" [3].

5. DIVERSITY AS A "GOLDEN MEAN" IN INTERNATIONAL ARBITRATION

Diversity plays a key role in international arbitration due to global interest in this type of dispute resolution [7]. Alongside the global spread of cross-border disputes involving parties from around the world, arbitral panels seem to be rather homogenous in their structure. Therefore, it is widely recognized that "old white males" prevail on arbitral panels globally. One must note that the Stockholm Chamber of Commerce (SCC) even released its statistics on gender diversity in appointing arbitrators in 2019. According to these statistics, women comprised only 23% of appointed arbitrators in cases handled by the SCC. This entails a significant gender imbalance regarding arbitral proceedings and the appointment of arbitrators. It is worth adding, however, that gender is one of the aspects influencing diversity in international arbitration. Indeed, many other characteristics should be considered, such as race, age, geography, language, and ethnicity. To illustrate, "the neutrals roster at the American Arbitration Association (AAA) is approximately 23 per cent diverse for gender and race. A study of closed ICSID cases found that tribunals were composed entirely of all Anglo-European arbitrators nearly half of the time (45 per cent), and only 11 cases (four per cent) were arbitrated by entirely non-Anglo-European panels" [15].

Even though these statistics on gender structure among arbitrators are rather pessimistic, the process of promoting diversity in international arbitration should not only be promoted but also enhanced. Diversity plays a significant role in strengthening the quality, legitimacy and relevancy of the entire arbitral proceedings and impacts the rendering of arbitral awards. According to the ICCA Reports, "gender diversity and inclusion cannot be fully addressed by approaching gender as a binary issue" [13].

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From 2015 to 2021, there was a positive trend in appointing women as arbitrators in arbitral proceedings. The rate of women's appointments increased from 12,6% to 26,1%. This is mostly a result of efforts undertaken by arbitral tribunals, which took a proactive stance. Therefore, arbitral institutions nominated women in up to 54% of the cases. Despite this fact, there are still relatively few appointments of women that are made either by the parties themselves or by co-arbitrators. This entails that there is no application of the same trend in appointments made by arbitral tribunals. Given that, women are less often recognized as nominees in the arbitral proceedings [13].

It is worth noting that there are several reasons for opting for gender diversity in international arbitration. Such reasons may be summarized as follows: legitimacy by representation, improved decision-making process, equal opportunities among arbitrators, increased talents and the need to have women in international law.

The first reason refers to the diversity that exists in the arbitral tribunal as a reflection of the parties and practitioners that are involved in international arbitration. Therefore, such diversity aims to strengthen the arbitral proceedings and render arbitral awards. Secondly, diversity existing in the arbitral tribunal may lead to better critical thinking and thus may result in a broader understanding. This entails that through the incorporation of diversity of thoughts, there is a much better quality of decisions issued by the arbitral tribunal. Indeed, it would also result in better outcomes of the entire arbitral process. Thirdly, "Embracing diversity at the tribunal level also promotes opportunities for women practitioners, which in turn provides a more level playing field for their career advancement" [13]. Finally, according to the ICCA Report, throughout the gender diversity landscape, there is an increasing trend of economic growth, which impacts the broader context, including international trade, investment, and arbitration functions. Interestingly, the inclusion of women in arbitral tribunals may also result from the international law obligations which must be fulfilled by the States [13].

Aside from gender diversity, international arbitration should also acknowledge and uphold a diverse and inclusive arbitration community. To achieve this goal, it is important to properly promote many other forms of diversity, which include "cultural, religious, sexual orientation, and disability" [13], among others.

It is worth noting that the International Chamber of Commerce (ICC) in Paris, as a leading arbitration institution worldwide, also encourages diversity in the process of appointing arbitrators.

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Furthermore, diversity has even become a key priority for the President of the ICC Court – Claudia Salomon in 2021. Once she said that "Arbitrator diversity in all forms is essential to the legitimacy of international arbitration by ensuring that the arbitrators represented in cases reflect the diversity – and values – of the global business community" (ICC, 2022). Such a trend has been seen in selecting and appointing arbitrators in cases handled by the ICC.

Aside from the ICC, law firms have already taken measures to bridge the gender gap in arbitration, such as gender-based nominations, using anonymized CVs, consultation and compendiums alongside providing education, inclusivity and collaboration. Apparently, law firms have an impact on the list of potential arbitrators. This entails that they can prepare a diverse list that complies with the gender-based requirements. Indeed, the so-called Checklist of Best Practices for the Selection of Arbitrators may be important while selecting an arbitrator based on objective criteria that enhance efficiency and diversity. Furthermore, anonymized CVs could also be seen as a solution to this challenging problem. Apparently, through such an action, it would be possible to mitigate unconscious bias. In the light of such practice, arbitrators would be evaluated and thus appointed in view of their qualifications, experience and expertise instead of personal characteristics [13].

Overall, one must note that diversity is a winner in the implementation of user-based innovation. There are many new networks and initiatives emerging that promote diversity in international arbitration. To name a few, ArbitralWomen was launched in 1993 as a response to a small number of women appointed as arbitrators in the ongoing proceedings. Therefore, it had the aim to increase the presence of female practitioners within the framework of international dispute resolution. In 2018, the Alliance for Equality in Dispute Resolution was established to enhance diversity and inclusivity in arbitration. There are also institutional networks and initiatives such as the ICC's Young Arbitration and ADR Forum (YAAF), Advanced Arbitration Academy Programme and the HKIAC's Women in Arbitration (WIA) [9].

6. CONCLUSION

This analysis concludes that the international community should use AI tools in international arbitration carefully. Even if at first glance, they provide many advantages, which are mostly analyzed from the perspective of cost-effective solutions, they also include many challenges and risks. Although there is a general consensus about the use of AI tools to expedite arbitral proceedings, the negative

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consequences of AI cannot be overlooked. In some cases, they may even lead to an unenforceable arbitral award. Given that in mind, AI should be used cautiously in arbitral proceedings to avoid possible challenges based on that reason.

Indeed, AI tools have the potential to put arbitration itself on a new track while dealing with diversity. Therefore, they can be applied in international arbitration for the sake of improving diversity on arbitral panels and thus reducing the level of discrimination in appointing women therein. Nonetheless, the success of such application of AI tools depends on their proper programming, which should be free of biases.

There is no doubt that AI tools can already collect a huge amount of data concerning a potential arbitrator, even that disclosed by the arbitral institutions. Such a new trend would enhance transparency in selecting and appointing arbitrators on the panels. AI could also select an arbitrator who fulfils the requirements on both impartiality and independence with respect to their good reputation on the issues raised by parties involved in the arbitral proceedings. Such application of AI tools should thus be seen as a response in reducing potential conflicts of interest and enhancing the diversity in international arbitration. Despite the introduction of such tools, the final decision on the selection of arbitrators and their appointment on arbitral panels would still be made by the arbitral institutions based on the best qualities of the candidates. AI could analyze data that is often overlooked, inaccessible, or underestimated during arbitral proceedings. To fully benefit from such new technologies, there is a need to provide proper training of AI tools that would be based on objective criteria. In practice, this means that we should find a "golden mean" in teaching algorithms how to provide an outcome that would be free of biases. One idea to tackle this problem refers to the joint effort of the international community to address these challenges both carefully and mindfully. Indeed, such cooperation is needed to avoid any possible backlash in biased appointments. To reduce risks in this regard, sensitive data such as gender, age, ethnicity, religion, and many others should not be uploaded, or they should be used carefully. Throughout the adoption of such preventive actions, it would be possible to avoid or at least anticipate undesired outcomes as a result of automated processes. In addition, there is no accurate definition of a "suitable or good arbitrator" thus far. Against this background, the AI "may consider a well-ranked arbitrator as one who has good availability, renders awards fast, etc. Therefore, as an example, the algorithm may understand that it makes more sense to appoint men over pregnant women on temporary leave. Hence, this (unforgivable and mistaken) bias could lower the score and rank of potential female arbitrators" (Becker, Marques). Despite many

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challenges ahead, the introduction of such AI tools could improve the number of women-arbitrators, if AI are trained properly without biases.

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¿AYUDA LA INTELIGENCIA ARTIFICIAL A LAS MUJERES EN EL ARBITRAJE INTERNACIONAL? ALGUNAS COMENTARIOS SOBRE LA DIVERSIDAD EN LOS TRIBUNALES ARBITRALES

RESUMEN

Las nuevas tecnologías están transformando el arbitraje internacional, y las instituciones están adoptando herramientas digitales y sistemas de gestión de casos para agilizar los procedimientos. La Inteligencia Artificial (IA), en particular, está transformando el campo al introducir soluciones innovadoras que mejoran la eficiencia. Este artículo explora el papel de la IA en el arbitraje internacional, centrándose en su potencial para mejorar la diversidad de género en el nombramiento de árbitros. En concreto, examina si las herramientas de selección basadas en IA pueden reducir la discriminación y desafiar estereotipos arraigados, como el predominio del perfil "masculino, pálido y rancio" en los tribunales arbitrales. El estudio sugiere que la IA podría marcar un antes y un después al promover procesos de selección más inclusivos. Sin embargo, este potencial depende del desarrollo de sistemas de IA imparciales y bien programados. Si bien la IA ofrece una vía prometedora para aumentar la diversidad, su eficacia dependerá de su capacidad para evitar replicar los sesgos existentes y garantizar la equidad en la selección y el nombramiento de árbitras.

Palabras clave: inteligencia artificial, mujeres, arbitraje internacional, nombramiento, diversidad

人工智能能否助力女性参与国际仲裁？关于仲裁庭多元化的几点思考

摘要

新技术正在改变国际仲裁，各机构纷纷采用数字化工具和案件管理系统来简化程序。尤其是人工智能 (AI)，它通过引入创新驱动的解决方案来提升效率，重塑了这一领域。本文探讨了人工智能在国际仲裁中的作用，重点探讨了其在仲裁员任命过程中提升性别多样性的潜力。具体而言，本文考察了基于人工智能的遴选工具能否减少歧视，并挑战根深蒂固的刻板印象，例如仲裁庭中"男性化、苍白、陈腐"的形象占据主导地位。该研究表明，人工智能可以通过促进更具包容性的遴选流程，标志着一个转折点。然而，这种潜力取决于开发出公正、程序完善的人工智能系统。虽然人工智能为提升多样性提供了一条充满希望的道路，但其有效性取决于它能否避免复制现有的偏见，并确保女性仲裁员的选拔和任命的公平性。

关键词：人工智能、女性、国际仲裁、任命、多样性

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WEAPONS BASED ON NEW PHYSICAL PRINCIPLES: DIRECTIONS FOR MODERNIZING RUSSIAN CRIMINAL LEGISLATION

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ABSTRACT | 摘要 | RESUMEN

In today's rapidly shifting geopolitical landscape, there is growing concern about weapons based on new physical principles—technologies that remain largely unknown to the public but may pose significantly greater threats than conventional arms. These weapons can have biological effects comparable to radiation exposure, including burns and other damage to living organisms. This article highlights the urgent need to strengthen biological safety measures in the Russian Federation in response to these emerging threats. The scientific novelty lies in the author's proposal of a draft Article 222.3 for the Criminal Code of the Russian Federation, which aims to establish legal liability for the illicit trafficking of such advanced weapons. Additionally, the author offers legislative recommendations to improve the system for recording and addressing crimes related to these technologies. By advancing legal frameworks, the study seeks to enhance protection mechanisms against a new generation of potentially devastating weaponry.

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1. INTRODUCTION

The importance of the research topic is determined by the need for legislative regulation to ensure public safety in the sphere of circulation and use of weapons based on new physical principles.

The main results of the study are that, based on the analysis of statistical accounting data and statements from victims to law enforcement agencies collected by the author during the conducted research, there is evidence of a high degree of prevalence of criminal acts committed with the use of weapons based on new physical principles. The author of the study also presents the criminal law measures she proposes should be taken to prevent human rights violations resulting from the illicit trafficking of weapons based on new physical principles. Figures 1 through 6 show weapons based on new physical principles.

The results of the scientific research in this article were presented during the International scientific and practical conference «Judicial power in the system of protection of the human rights and the state», organized by the Institute of State and Law of the Russian Academy of Sciences on February 28, 2023, and also within the framework of the XXX International Conference of students, postgraduates and young scientists «Lomonosov-2023», organized by the M. V. Lomonosov Moscow State University on April 12, 2023, and other scientific and practical events.

The author proposes a scope of applications that are advisable to use in the legislative process when determining the basic composition and establishing the qualifying elements of the crime provided for by the norms of draft article 222.3. of the Criminal Code of the Russian Federation.

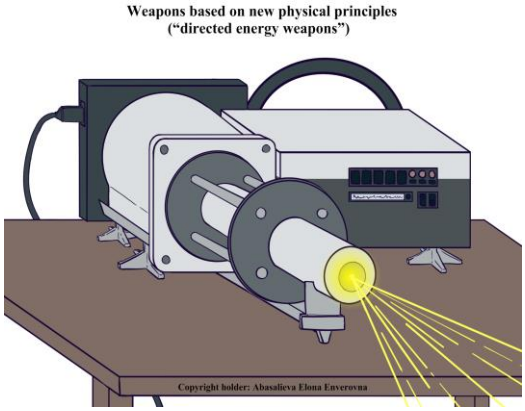

Figure 1 – Weapons based on new physical principles («directed energy weapons»)

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Figure 2 – The personnel halting and stimulation response rifle (PHASR) – non-lethal laser weapons. One of the weapon types based on new physical principles[1].

Figure 3 – Infrasound (acoustic) weapon is one of the types based on new physical principles weapons[2]

[1] The personnel halting and stimulation response rifle (PHASR) // [website]. URL: https://upload.wikimedia.org/wikipedia/commons/7/73/PHASR_Rifle.jpg (access date: 03/03/2024).

[2] Buy an infrasound emitter. // [website]. URL: https://all-audio.pro/c18/img/kupit-infrazvukovoy-izluchatel.jpg (access date: 03/03/2024).

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Figure 4– Electromagnetic suitcase is one of the types based on new physical principles weapons[3]

Figure 5 – Acoustic weapons LRAD (Long-Range Acoustic Device) is one of the types based on new physical principles weapons[4]

[3] APE L.C. Electromagnetic suitcase (Suitcase with electromagnetic pulses) // [website]. URL: https://apelc.com/rf-suitcase/ (access date: 03/03/2024).

[4] Acoustic non-lethal weapons: for the protection of objects and for other tasks // [website]. URL: https://topwar.ru/192191-akusticheskoe-neletalnoe-oruzhie-dlja-ohrany-obektov-i-dlja-drugih-zadach.html (access date: 03/03/2024).

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Figure 6 – Hexacopter «Hornet» with binoculars, thermal imager and video camera is one of the types based on new physical principles weapons[5]

2. MATERIAL AND METHOD

The primary objective of this research is to determine the prevalence of criminal acts committed with the use of weapons based on new physical principles in the Russian Federation. To achieve this objective, the author sent requests for statistical crime data to the Federal State Institution «Main Information and Analytical Center of the Ministry of Internal Affairs of the Russian Federation», the Prosecutor General's Office of the Russian Federation, and also to the Judicial Department of the Supreme Court of the Russian Federation.

Additionally, a substantial number of statements from victims, submitted to law enforcement agencies of the Russian Federation, were analyzed. At the same time, statistical data provided by the public human rights organization Moscow Committee for Housing Ecology (hereinafter referred to as Moskomeko) were also studied.

[5] «Flying binoculars»: "Hornet", which was created to disperse riots, was upgraded to a military drone // [website]. URL: https://dzen.ru/a/ZN75-apb3jrlheGB (access date: 03/03/2024).

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After the data collection, logical and comparative legal analysis of the victims' statements, as well as statistical records of relevant crimes, were carefully conducted.

3. RESULTS

3.1 Problems of Accounting of Crimes Committed with the Use of Weapons Based on New Physical Principles

On March 31, 2023, the author of the publication sent an application to the Federal State Institution «Main Information and Analytical Center of the Ministry of Internal Affairs of the Russian Federation» with a request to provide statistical data on crimes committed with the use of weapons based on new physical principles for the period from 2001 to 2023.

In notification № 3/237708606658 dated April 4, 2023, the head of the Center of Statistical Information of the Federal State Institution «Main Information and Analytical Center of the Ministry of Internal Affairs of the Russian Federation» O.A. Gridneva reports that it is not possible to provide the information of interest, since its collection by the current forms of state and departmental statistical reporting processed by the Federal State Institution «Main Information and Analytical Center of the Ministry of Internal Affairs of the Russian Federation» is not provided for.

The Acting Deputy Head of the Department of Legal Statistics of the Main Directorate of Legal Statistics and Information Technologies - Head of the Department of State Statistics of the General Prosecutor's Office of the Russian Federation M.M. Skurchaev, in notification № 11-161-2023/On36887-23 dated July 27, 2023, also noted that the federal statistical observation forms did not highlight the designated statistical information. Information of similar content was indicated by the Deputy Head of the Main Directorate of the Judicial Department at the Supreme Court of the Russian Federation Yu.S. Egorov, in notification № SD-6og/2891-122-23 dated August 2, 2023.

The information provided by law enforcement and judicial officials in their responses once again emphasizes the importance of defining illegal arms trafficking based on new physical principles as a separate category of crime, since employees of the Ministry of Internal Affairs of the Russian Federation, the Prosecutor General's Office of the Russian Federation and the Judicial Department at the Supreme

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Court The Russian Federation also cannot record such criminality due to the lack of special criminal law norms.

Accordingly, it can be stated that there are serious gaps in the criminal law, since the Russian legislator notes the increased public danger of weapons based on new physical principles in the Military Doctrine of the Russian Federation dated December 25, 2014, № Pr-2976, and also regulates the prohibition of weapons and other objects which damaging effects occur due to the use of electromagnetic, light, thermal, infrasound or ultrasonic radiation in paragraph 6 of Article 6 of the Federal Law of the Russian Federation «About Weapons» dated December 13, 1996 № 150-FZ, however, no types of reporting provide for the reflection of crimes committed with its use.

In addition, the reporting systems of law enforcement agencies and the judicial system of the Russian Federation do not accurately reflect the criminal acts of illegal trafficking and the use of weapons based on new physical principles due to the absence of a criminal law prohibiting them.

The author of the study asks a logical question: «Why are departmental records provided for in all other articles of the Federal Law 'About weapons' and in all other points of the articles of this law, but for this article there are none?». It is urgent to develop a definite solution, since relations in the field of public security, namely in the sphere of circulation of especially dangerous types of weapons, must be included in the scope of legal influence. For this purpose, it seems advisable to modify the forms of state and departmental statistical reporting in the Russian Federation to create a new form of reporting on the registration of crimes committed with the use of weapons, based on new physical principles.

Until now, crimes committed in the field of illegal arms trafficking based on new physical principles have not been subjected to professional legal assessment by law enforcement officials and judges. Therefore, it seems appropriate to create special norms in the Criminal Code of the Russian Federation[6], which will solve a long-standing problem.

The high level of crime latency in the field of using weapons based on new physical principles is because law enforcement agencies, that have received a crime statement about its use, do not react to it,

[6] Criminal Code of the Russian Federation. «Collection of Legislation of the Russian Federation», 1996, № 25, Art. 2954. Revision dated July 31, 2023. // [website]. URL: https://www.consultant.ru/document/cons_doc_LAW_10699/ (access date: 08/04/2023).

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do not register it and do not take measures to investigate it, even if they were aware about the actual crime committed.

According to the Moscow Committee for Housing Ecology, several hundred thousand Russians have become victims of the illegal use of weapons based on new physical principles[7]. This fact indicates the high degree of prevalence of criminal acts committed with the use of this type of weapon. In addition, absolute impunity of criminals for several decades has led to a significant increase in such criminal acts **(Figure 7).**

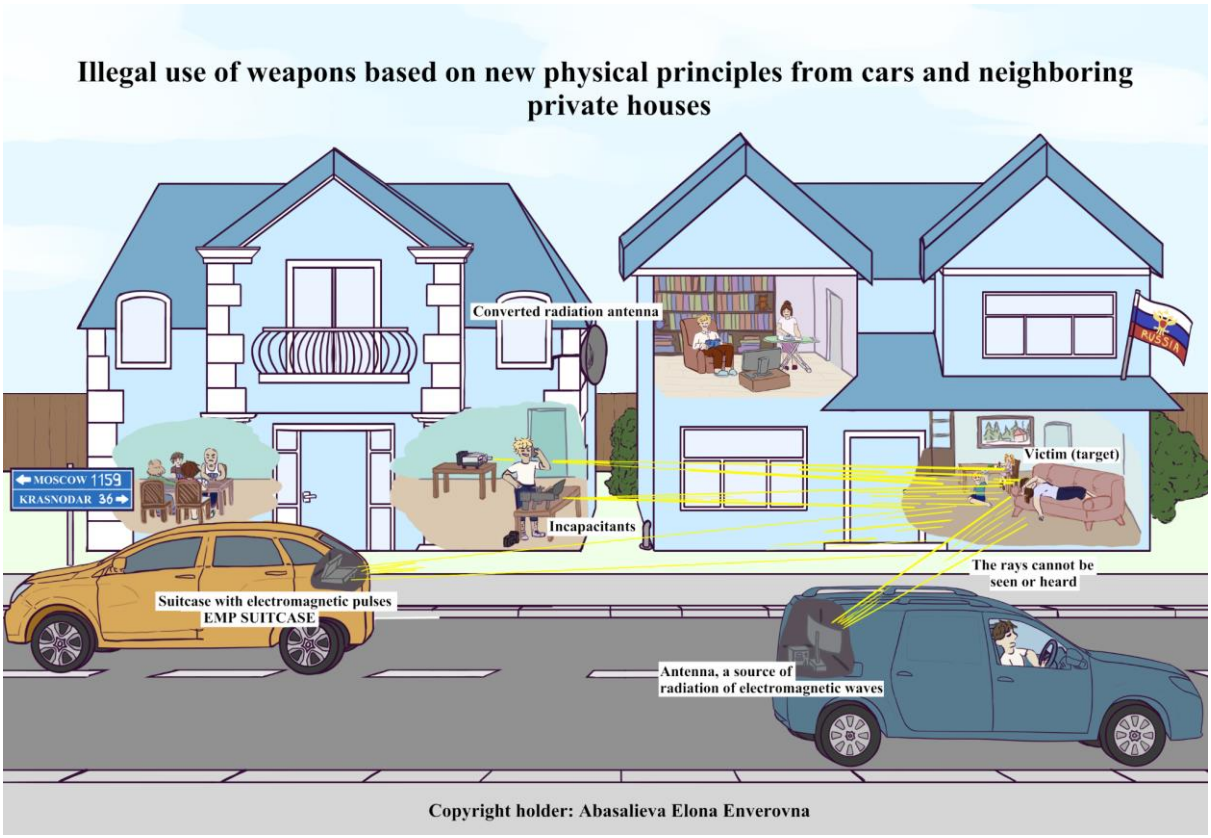

Figure 7 – Illegal use of weapons based on new physical principles from cars and neighboring houses against the «target person»

[7] From the materials of the III International Conference «Against the use of radiation-type weapons on people», held by the Moscow Committee for Housing Ecology (Moskomeco) on December 1-2, 2018 in Moscow. //[website].URL: https://www.youtube.com/watch?v=Gz6bNf0zwkY&list=PLWFmkOxHyA6iBnF80BfWg_LJccITNljn0&index=2 (access date: 03/03/2024).

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A paradoxical situation has developed in the Russian Federation: weapons based on new physical principles are widely used in criminal circles, and law enforcement agencies are literally «inundated» with statements from victims about the illegal use of this type of weapon. The victims state that they «feel like they are being burned alive in their own homes», and therefore identify themselves with prisoners of Nazi concentration camps, and call their apartments gas chambers **(Figure 8).**

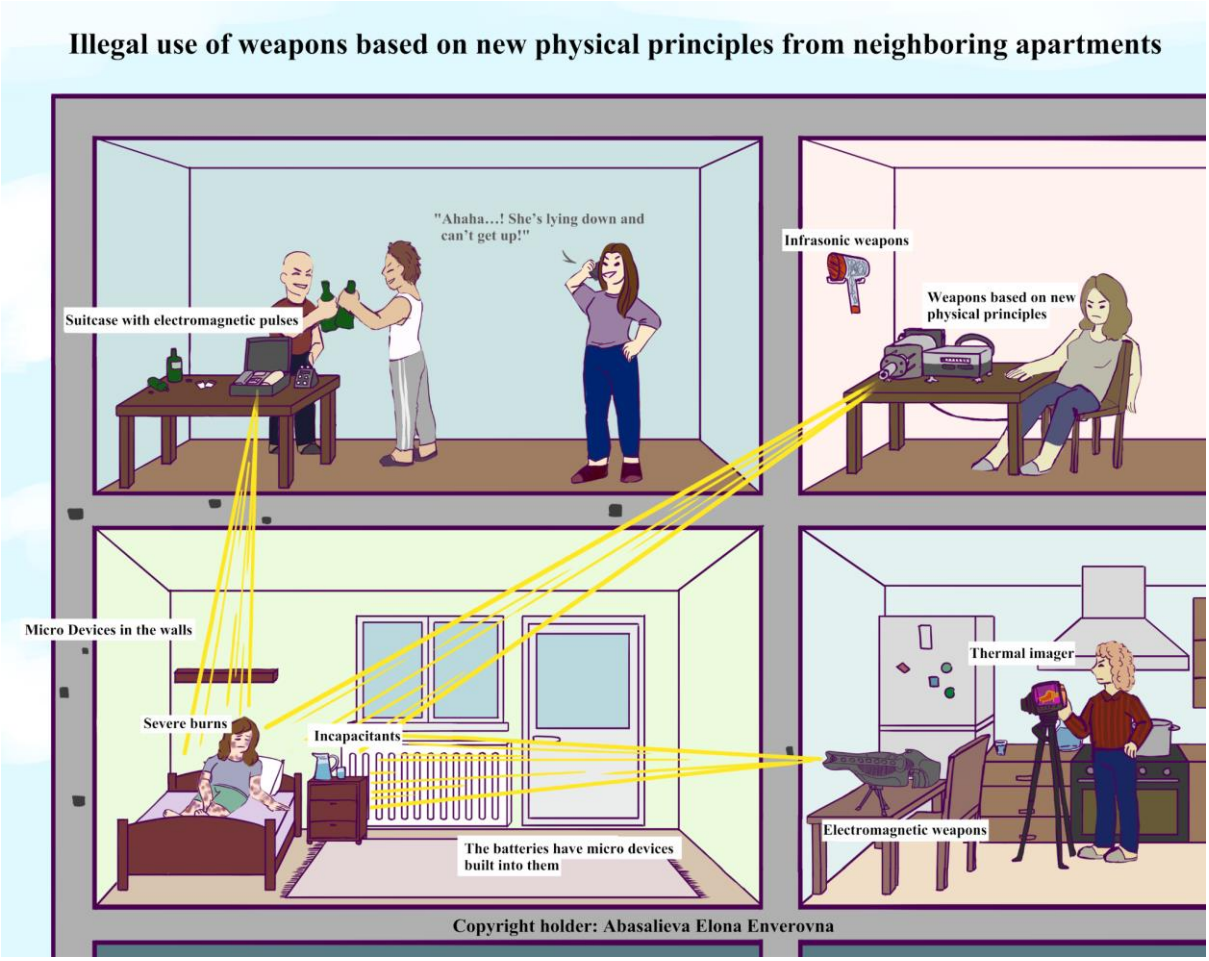

Figure 8 – Illegal use of weapons based on new physical principles from neighboring apartments

However, despite this incredibly shocking situation, in the Russian Federation, there is still no criminal law norm prohibiting the trafficking and illegal use of weapons based on new physical principles. And, in particular, law enforcement officials use this fact as a basis for leaving crime statements without consideration.

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The bodies of the Investigative Committee of the Russian Federation and the Ministry of Internal Affairs of the Russian Federation do not perform a law enforcement function for victims of such criminal acts. The aforementioned bodies do not protect life, health, and other human rights and freedoms stipulated by the Constitution of the Russian Federation of 1993 and the Universal Declaration of Human Rights, adopted by the United Nations General Assembly on December 10, 1948.

3.2 Threats to the Biological Safety of the Population of the Russian Federation as a Result of the Illegal Use of Weapons Based on New Physical Principles

For more than fifty years, scientists have repeatedly expressed concern about ensuring the biological safety of humans, flora and fauna [1] [2]. However, the legislator has still not resolved the issue of the illegal use of weapons based on new physical principles by criminal law and other legal means, thereby threatening the future proper ecological and physiological existence of Russian society.

The extermination of entire families at the genetic level, the reduction of the biological species due to the complete sterilization of victims, as well as the destruction of family values and social ties, is a major issue that is of particular concern.

The uncontrolled trafficking and illegal use of weapons based on new physical principles leads to the emergence of artificially created diseases in a large number of Russians and, from a legal point of view, the organized murder of entire families, which ultimately leads to a reduction in the population as a whole.

At the same time, the result of the illegal use of this type of weapon by members of a criminal community in apartment buildings for many years, and sometimes decades, is a violation of sanitary and epidemiological standards and an uncontrolled increase in the background radiation of the home. Moreover, it is necessary to note the fact that people living in apartments next door to the victim of the crime, as well as in neighboring entrances, may suffer no less, since they are not protected from the artificially increased background radiation, that is a result of the illegal use of weapons based on new physical principles.

In such cases, doctors usually cannot determine the cause of frequent illnesses and deaths of residents of apartment buildings where victims of crimes live. There is a situation when a person who

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leads a healthy lifestyle with no signs of chronic diseases, or stress at home or work, begins to get sick frequently and develops chronic diseases. Meanwhile, medications prescribed by doctors do not lead to positive dynamics and recovery of the patient, since the aggravating effect of the use of weapons based on new physical principles does not stop 24 hours a day.

Thus, a direct public danger threatens the health of city residents and their existence, and they are not even aware of it. Law enforcement agencies do nothing when considering the statements of such victims. As a result, harm to health is caused not only to the victim of the crime, but also to many unsuspecting people around them, and in some cases, to all residents of one multi-storey building.

3.3 Regulation of Illegal Trafficking and Use of Weapons Based on New Physical Principles in Criminal Legislation of the Russian Federation

In order to counter the widespread practice of illegal trafficking and the use of weapons based on new physical principles, as well as to improve the activities of law enforcement and judicial authorities of the Russian Federation, the author has developed a draft federal law «About Amendments to the Criminal Code of the Russian Federation», which is confirmed by the Certificate of Deposit of Intellectual Property Object № 138-885-525, received on February 16, 2023.

The bill, among other things, contains a draft for Article 222.3. of the Criminal Code of the Russian Federation, which provides liability for the illegal trafficking of weapons based on new physical principles. Article 222.3. should supplement Chapter 24 of Title IX of the Criminal Code of the Russian Federation with the following content:

Article 222.3. Illegal development, production, acquisition, transfer, sale, storage, transportation and shipment of weapons based on new physical principles

1. Illegal development, production, acquisition, transfer, sale, storage, transportation and shipment of weapons based on new physical principles,

- is punishable by imprisonment for a term of five to eight years.

2. The acts provided for in Part One of this Article, committed by:

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a) a group of persons, a group of persons by prior agreement or an organized group;

b) a person using his official position,

- are punishable by imprisonment for a term of eight to fifteen years and deprivation of the right to hold certain positions or engage in certain activities for a term of up to ten years.

The author believes that, as a criminal legal measure, courts, when passing a guilty verdict, must necessarily confiscate weapons and objects related to criminal activity and turn them into state property, when considering criminal cases of illegal trafficking and use of weapons based on new physical principles. At the same time, Article 222.3. The introduction of the Criminal Code of the Russian Federation would introduce a novelty in domestic criminal legislation, providing for criminal liability for the illegal use of weapons based on new physical principles.

4. CONCLUSION

Based on the analysis, the author has reached several conclusions:

1. The crime statistics indicators recorded by law enforcement agencies and the judicial system of the Russian Federation do not accurately reflect the state of crime in the fields of illegal trafficking and the use of weapons based on new physical principles.

2. The calculated number of victims of the use of weapons based on new physical principles indicates a high degree of prevalence of such criminal acts in the Russian Federation.

3. The necessity of criminalizing the illegal use of weapons based on new physical principles is substantiated.

4. The author specifies the full range of actions included in the concept of «weapon trafficking» when constructing the disposition of Article 222.3. of the Criminal Code of the Russian Federation, which will provide for liability for the illegal trafficking of weapons based on new physical principles.

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5. When formulating the sanction of Article 222.3. of the Criminal Code of the Russian Federation, the author defines basic and additional types of punishment, as well as other criminal legal measures that should be applied when considering criminal cases.

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ARMAS BASADAS EN NUEVOS PRINCIPIOS FÍSICOS: ORIENTACIONES PARA LA MODERNIZACIÓN DE LA LEGISLACIÓN PENAL RUSA

RESUMEN

En el cambiante panorama geopolítico actual, existe una creciente preocupación por las armas basadas en nuevos principios físicos: tecnologías que, aunque siguen siendo en gran medida desconocidas para el público, pueden representar amenazas significativamente mayores que las armas convencionales. Estas armas pueden tener efectos biológicos comparables a la exposición a la radiación, incluyendo quemaduras y otros daños a los organismos vivos. Este artículo destaca la urgente necesidad de reforzar las medidas de seguridad biológica en la Federación Rusa en respuesta a estas amenazas emergentes. La novedad científica reside en la propuesta del autor de un proyecto de artículo 222.3 para el Código Penal de la Federación Rusa, cuyo objetivo es establecer la responsabilidad legal por el tráfico ilícito de estas armas avanzadas. Además, el autor ofrece recomendaciones legislativas para mejorar el sistema de registro y lucha contra los delitos relacionados con estas tecnologías. Mediante el avance de los marcos legales, el estudio busca fortalecer los mecanismos de protección contra una nueva generación de armas potencialmente devastadoras.

Palabras clave: armas basadas en nuevos principios físicos, seguridad biológica, tráfico ilegal de armas, proyecto de ley, legislación penal

基于新物理原理的武器：俄罗斯刑事立法现代化方向

摘要

在当今瞬息万变的地缘政治格局中，人们日益担忧基于新物理原理的武器——这些技术在很大程度上仍不为公众所知，但可能构成比常规武器更大得多的威胁。这些武器可能产生与辐射照射相当的生物效应，包括烧伤和其他对生物体的损害。本文强调，为应对这些新兴威胁，俄罗斯联邦迫切需要加强生物安全措施。其科学创新之处在于作者提出了《俄罗斯联邦刑法典》第222.3条草案，旨在确立此类先进武器非法贩运的法律责任。此外，作者还提出了立法建议，以改进与这些技术相关的犯罪记录和处理系统。该研究旨在通过推进法律框架，加强对新一代潜在毁灭性武器的防护机制。

关键词：基于新物理原理的武器、生物安全、非法武器贩运、法律草案、刑事立法

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