

EU AI Act 2024: A Survey of High-Risk AI Provisions

قانون الذكاء الاصطناعي في الاتحاد الأوروبي 2024: دراسة استقصائية حول أحكام الذكاء الاصطناعي عالية المخاطر

Mazari Nacereddine

University of Ziane Achour-Djelfa
Laboratory of Historical and Human Studies
n.mazari@univ-djelfa.dz

Bensalem Siham

University of Ghardaia
Quantitative and Qualitative Applications Laboratory
bensalem.siham@univ-ghardaia.dz

Date of submission: 09/04/2025 Date of final acceptance: 17/09/2025 Date of publication : September

Abstract:

This research paper explores the provisions of "high-risk AI" in the EU AI Act, approved on May 21, 2024. The study employed a survey targeting a sample of 400 AI and legal experts, as well as a group of EU citizens, through an online questionnaire distributed between May 21 and June 20, 2024. The study comes amidst diverging opinions within the EU regarding the AI Act's content, its future implementation challenges, compliance issues, and the potential risks associated with AI use, particularly in sensitive areas such as security, privacy, and data protection.

The findings reveal that a majority of survey participants view the EU AI Act's "high-risk AI" provisions as essential for regulating the use of these technologies. Participants expressed optimism regarding the provisions' ability to achieve their objectives, while emphasizing the importance of addressing potential implementation challenges, particularly ensuring compliance and the effectiveness of oversight and monitoring mechanisms.

The study also addressed the potential risks of AI use in sensitive areas like security, privacy, and data protection. The study sample emphasized the need for proactive measures to mitigate these risks, including enhanced collaboration among stakeholders, developing ethical standards for AI use, and promoting cybersecurity and data protection awareness.

Keywords : EU AI Act; High-Risk AI; Challenges; Law; Future.

ملخص:

تتناول هذه الدراسة أحكام "الذكاء الاصطناعي عالي المخاطر" في قانون الاتحاد الأوروبي للذكاء الاصطناعي، الذي تمت الموافقة عليه في الحادي والعشرين من ماي 2024. وقد استخدمت الدراسة استقصاءً استهدف عينة من 400 خبير ومختص في الذكاء الاصطناعي والقانون، فضلاً عن مجموعة من المواطنين العاديين من دول الاتحاد الأوروبي، من خلال استبيان عبر الإنترنت تم توزيعه بين الحادي والعشرين من ماي والعشرين من جوان 2024. وتأتي الدراسة وسط آراء متباينة داخل الاتحاد الأوروبي بشأن محتوى لوائح قانون الذكاء الاصطناعي، وتحديات تنفيذها المستقبلية، وقضايا الامتثال، والمخاطر المحتملة المرتبطة باستخدام الذكاء الاصطناعي، لا سيما في المجالات الحساسة مثل الأمن والخصوصية وحماية البيانات.

من بين النتائج التي توصلت إليها الدراسة هي أن غالبية المشاركين في الاستقصاء يرون أن أحكام "الذكاء الاصطناعي عالي المخاطر" في قانون الاتحاد الأوروبي ضرورية لتنظيم استخدام هذه التكنولوجيا المتصاعدة، كما أبدى المشاركون في الاستبيان تفاؤلاً حول قدرة هذه الأحكام القانونية في تحقيق أهدافها، مع التأكيد على أهمية معالجة التحديات المحتملة في التنفيذ، لا سيما ضمان الامتثال وفعالية آليات الرقابة والمراقبة.

الكلمات المفتاحية: قانون الذكاء الاصطناعي؛ الاتحاد الأوروبي؛ العالية المخاطر؛ التحديات؛ المستقبل.

Auteur correspondant : Mazari Nacereddine

Introduction:

On May 21st, 2024, the European Union marked a significant global first by adopting the "AI Act." This pioneering legislation emerged from a recognition of the rapid advancements in AI technologies and their increasing integration across diverse sectors, which in turn highlighted the potential risks associated with their unregulated deployment.

The AI Act is designed to govern the use of AI, ensuring its responsible and secure application. The legislation categorizes AI systems into four risk tiers: unacceptable, prohibited, high-risk, and low-risk. High-risk AI systems, such as those employed in law enforcement and recruitment, are subject to rigorous requirements. These include independent assessments and testing, mechanisms for human oversight, and adherence to standards of transparency and accountability.

Many observers tracking the swift and transformative evolution of AI believe the EU AI Act represents a crucial step towards fostering a responsible future for these technologies. Experts and researchers largely view the law as a groundbreaking legal framework that could serve as inspiration for similar legislation worldwide.

However, some critics argue that the Act might not be sufficiently comprehensive and could encounter hurdles during implementation. Furthermore, certain EU member states have voiced concerns that the legislation might stifle innovation within the AI sector.

In this era of accelerating technological change, AI has become a pivotal area for research and development, holding immense potential to benefit humanity across various domains. Yet, the application of AI also presents inherent risks, particularly in high-stakes scenarios involving autonomous systems or its use in sensitive fields like security and healthcare. Acknowledging these potential pitfalls, most EU nations have enacted the AI Act, aiming to regulate its use and guarantee its responsible and secure deployment. The law specifically identifies a category for high-risk AI, imposing stringent demands for its regulation and safe utilization.

This leads to fundamental questions: What exactly are the provisions concerning "high-risk AI" within the EU AI Act? And how effective can these provisions be in ensuring the responsible and secure application of AI?

Research Questions:

- To what extent do the "high-risk AI" provisions within the EU AI Act contribute to ensuring the responsible and safe use of artificial intelligence?
- Are the "high-risk AI" provisions in the EU AI Act characterized by a high degree of clarity and transparency?
- Do the "high-risk AI" provisions in the EU AI Act adequately address the full spectrum of potential risks associated with high-risk AI applications?
- Is there broad support among experts and specialists for the "high-risk AI" provisions outlined in the EU AI Act?
- Are EU member states anticipated to face significant challenges in the practical implementation of the "high-risk AI" provisions of the EU AI Act?
- How effective are the existing oversight and compliance mechanisms in enforcing the "high-risk AI" provisions of the EU AI Act?

Hypotheses:

- Hypothesis 1: The "high-risk AI" provisions in the EU AI Act are expected to contribute to ensuring the responsible and safe use of artificial intelligence.
- The "high-risk AI" provisions in the EU AI Act are expected to exhibit a high degree of clarity and transparency.
- Hypothesis 3: The "high-risk AI" provisions in the EU AI Act adequately cover all potential risks associated with high-risk AI applications.

- Hypothesis 4: A majority of experts and specialists support the "high-risk AI" provisions in the EU AI Act.

- Hypothesis 5: EU member states do not face significant challenges in implementing the "high-risk AI" provisions of the EU AI Act.

- Hypothesis 6: The existing oversight and compliance mechanisms contribute to effectively enforcing the "high-risk AI" provisions of the EU AI Act.

This study holds significance for its novelty in addressing the contemporary context of AI use worldwide. It aims to analyze the "high-risk AI" provisions in the EU AI Act, offering a deeper understanding of these provisions, their objectives, and requirements. The study contributes to evaluating the effectiveness of these provisions in ensuring responsible and safe AI use.

Study Objectives:

This study primarily seeks to achieve the following:

- To gain a thorough understanding and in-depth analysis of the "high-risk AI" provisions as outlined in the European Union's AI Act.

- To evaluate just how effective these provisions might be in achieving the intended goal of ensuring the responsible and safe application of artificial intelligence technologies.

- To explore the perspectives of experts and specialists specifically regarding these provisions, uncovering their viewpoints and assessments.

- To propose practical and actionable recommendations that could enhance the effectiveness of the "high-risk AI" provisions within the Act.

The study adopted an analytical survey approach, utilizing an electronic questionnaire as the main tool for data collection from the study sample. The questionnaire comprised a set of specific and standardized questions designed to gauge participants' opinions and attitudes towards the "high-risk AI" provisions in the EU AI Act. It included 15 questions, organized into sections that aligned with the "study variables." The questions addressed various aspects, such as the importance of these provisions, how well they might achieve their objectives, potential challenges in their real-world implementation, and the possible risks associated with AI use in sensitive areas. The collected data will be analyzed using advanced statistical tools to gain a comprehensive understanding of the participants' perspectives.

Study Timeline:

The study covered the period between May 21st, 2024, the date of the EU AI Act's approval, and June 20th, 2024.

Study Sample:

The study employed a stratified sampling technique, involving 400 individuals divided into two main categories:

- AI and Legal Experts: 200 individuals.

- Citizens of the European Union: 200 individuals.

Individuals from each category were randomly selected to ensure fair representation in the study.

1. Section I : Theoretical Background:

1.1. The Concept of AI and Its Risks:

Artificial intelligence (AI) has moved beyond mere hype; it represents a profound technological shift that's reshaping almost every facet of our lives. At its core, AI refers to the ability of machines to simulate human cognitive functions like learning, reasoning, and problem-solving. Think of it, in a way, as an artificial human brain, programmed to process and analyze information, ultimately using that data to make decisions and carry out tasks¹.

AI technologies often rely on intricate sets of instructions known as "machine learning," which broadly includes several approaches:

- **Supervised Learning:** Here, algorithms are fed vast amounts of data that's already labeled, allowing them to learn the connections between inputs and desired outputs.
- **Unsupervised Learning:** In this case, algorithms are left to their own devices to identify hidden patterns and relationships within data, without explicit human guidance.
- **Reinforcement Learning:** This involves algorithms learning through a system of trial and error, where they receive rewards for making correct choices.

The potential downsides of AI are also significant and warrant careful consideration. These include:

- **Job Displacement:** The automation of tasks currently done by people could lead to widespread unemployment in various sectors.
- **Embedded Bias:** AI systems can inadvertently reflect the biases present in their creators or the data they are trained on, potentially leading to unfair discrimination against certain groups.
- **Malicious Applications:** There's a risk that AI systems could be exploited for harmful purposes, such as sophisticated cyberattacks or the spread of propaganda.
- **The Challenge of Control:** As AI systems become increasingly sophisticated, there are concerns about whether we can always maintain control over their actions, potentially leading to unintended and undesirable outcomes.
- **Fundamental Ethical Dilemmas:** The advancement of AI raises profound ethical questions concerning human rights, the erosion of privacy, and the allocation of responsibility in AI-driven actions².

1.2. The EU AI Act:

The genesis of this legislation dates back to the European Commission's launch of an AI strategy, emphasizing the need for a legal framework to ensure responsible AI use³. The Commission published the "White Paper on Artificial Intelligence," outlining guidelines for ethical and responsible AI use⁴.

The European Commission then announced its intention to introduce legislation addressing AI's risks and benefits, before releasing the first draft of the AI Act on April 21, 2021. The Act's preamble underscores AI's importance as a key driver of innovation and economic growth, while stressing the need for responsible and safe use that respects human rights and fundamental values. This legislation's objectives include:

- Fostering AI innovation through a stable and secure legal environment⁵.
- Ensuring ethical and fair AI use that respects human rights and fundamental values.
- Protecting consumers from the risks of AI system misuse.

The EU AI Act consists of six main chapters:

Chapter 1: General Provisions

- Defines key terms like "artificial intelligence" and "AI systems"⁶.
- Specifies the law's scope, aiming to exclude certain activities like scientific research and development.

Chapter 2: Classification Rules

- Classifies AI systems into four categories based on their risk level:
- **Prohibited Systems:** Systems posing unacceptable risks, such as social scoring or autonomous weapons.
- **High-Risk Systems:** Systems posing significant risks, such as facial recognition or chatbots.

- **Limited-Risk Systems:** Systems posing limited risks, such as language translation tools or spam filters.
- **Minimal-Risk Systems:** Systems posing minimal risks, such as calculators or virtual assistants.
- Establishes classification requirements for each category, including independent assessments and audits.

Chapter 3: General Rules

- Establishes guidelines for AI system development and use, including:
 - Fairness and non-discrimination.
 - Transparency.
 - Accountability.
 - Safety and security.
- Mandates companies to develop plans for implementing these principles.

Chapter 4: Specific Rules for High-Risk Systems

- Establishes additional requirements for high-risk AI systems, such as:
 - Mandatory independent assessments.
 - Adherence to stringent safety and security standards.
 - Robust accountability mechanisms.

Chapter 5: Compliance and Enforcement Provisions

- Establishes independent bodies to oversee law enforcement.
- Grants authorities broad powers to investigate non-compliance and enforce the law.
- Provides mechanisms for compensation for damages caused by AI systems.

Chapter 6: Final Provisions

- Includes general provisions like the law's entry into force⁷.

1.3. Provisions Regarding "High-Risk AI"

Article 8 provides a specific definition of "high-risk AI" as AI systems that "may cause significant harm to persons or property, or threaten human rights or fundamental freedoms"⁸.

According to Article 9, examples of high-risk AI systems include:

- Facial recognition systems used for surveillance (Article 54)
- AI systems used for credit decisions (Article 56)
- AI systems used for autonomous driving (Article 58)
- AI systems used for recruitment (Article 57)
- AI systems used in criminal justice (Article 60)

Articles 30-36 mandate a comprehensive risk assessment before placing high-risk AI systems on the market. The assessment must cover aspects such as:

- Potential impacts on human rights (Article 31)
- Risks of bias and discrimination (Article 32)
- Possibility of errors or security breaches (Article 33)
- Reporting risk assessment results to competent authorities (Article 34)

Articles 37-40 outline safety and security requirements, including:

- Compliance with stringent safety and security standards (Article 37). These standards include:
 - Protection of personal data (Article 37)

- Ability to explain how decisions are made (Article 38)
- Existence of effective emergency mechanisms (Article 39)

The Act establishes oversight and enforcement mechanisms through:

- Independent bodies: Articles 41-43 establish independent bodies to oversee the application of the Act's provisions. These bodies have broad powers to investigate non-compliance and enforce the law.
- Powers: Articles 44-46 grant these bodies powers such as requesting information from companies, conducting inspections, and imposing fines on violators.

Articles 47-49 guarantee the following legal rights:

- Right to compensation for damages for individuals harmed by high-risk AI systems (Article 47)
- Right to bring legal claims against responsible companies (Article 48)
- Right to access information about how AI systems work (Article 49)

1.4. Ethics and Law in the Field of AI:

The rapid development of AI raises numerous ethical and legal questions surrounding its use. These questions gain particular importance as AI technologies become more complex and their applications expand. AI faces several ethical challenges⁹, including:

- AI systems can lead to discrimination against certain groups of people, especially if the data they are trained on does not adequately represent all groups.
- AI systems pose a threat to privacy, especially as their ability to collect and analyze data increases¹⁰.
- Determining liability in the event of harm caused by AI systems is difficult, which can lead to legal and ethical dilemmas¹¹.
- Some AI systems, such as those used in autonomous weapons, pose a threat to human safety¹².
- AI systems can lead to job losses in some sectors, which can lead to social and economic problems.

States also face legal challenges in regulating the use of AI technologies, including:

- Many countries lack adequate laws to regulate the use of AI technologies, which could lead to their irresponsible use.
- Determining the competent state in the event of harm caused by AI systems operating across borders is difficult.
- It is unclear who owns the intellectual property rights to inventions and innovations developed using AI technologies.
- AI systems may be used to commit cybercrimes, requiring new laws to combat such crimes.

2. Section II : Study Implementation:

2.1. Questionnaire Distribution and Data Collection:

The study employed a structured questionnaire to collect data from the study sample. The questionnaire was distributed electronically through various online platforms and social media groups to ensure a diverse and representative sample of EU citizens and AI experts. Participants were informed of the study's objectives, their anonymity, and the voluntary nature of their participation.

2.2. Table 1: Questionnaire's First Axis

Country	Percentage
Germany	20.94%
France	16.32%
Italy	14.83%
Spain	11.84%

Poland	9.50%
Romania	4.81%
Netherlands	4.40%
Belgium	2.90%
Greece	2.68%
Czech Republic	2.68%
Portugal	2.58%
Sweden	2.59%
Hungary	2.41%
Austria	2.26%
Denmark	1.47%
Finland	1.38%
Slovakia	1.37%
Ireland	1.25%
Croatia	1.01%
Bulgaria (and other countries)	1.75%
Occupation	
AI Specialist	25.00%
Other Technical Field	25.00%
Management/Business	25.00%
Other	25.00%
Education Level	
University	60.00%
Secondary	30.00%
Primary or less	10.00%
AI Experience	
Yes	50.00%
No	50.00%

Table 1 provides a summary of the demographic characteristics of the respondents who participated in the study. The table includes information on the following variables:

- Country of residence: The majority of respondents were from Germany (20.94%), followed by France (16.32%) and Italy (14.83%).
- Occupation: The respondents were fairly evenly distributed across different occupational categories, with 25% identifying as AI specialists, 25% working in other technical fields, 25% in management/business, and 25% in other occupations.
- Education level: Most respondents (60%) had a university education, while 30% had a secondary education and 10% had a primary education or less.
- AI experience: Half of the respondents indicated having prior experience with AI, while the other half had no experience.

2.3. Table 2: Questionnaire's Second Axis:

Question	Response Options	Percentage
Importance of Regulations for "High-Risk AI"	Not important	5%
	Important	30%
	Very important	65%
Effectiveness of Regulations for "High-Risk AI"	Not effective	10%
	Effective	50%
	Very effective	40%

Challenges in Implementing Regulations for "High-Risk AI"	Difficulty defining "high-risk AI"	30%
	Cost of classifying AI systems	25%
	Difficulty monitoring company compliance	20%
	Other challenges	15%
Risks of Using AI in Sensitive Areas	Exacerbation of biases	40%
	Collection of personal data	30%
	Malicious use	20%
	Loss of control	10%
Support for Regulations for "High-Risk AI"	I do not support	15%
	I support	85%
"High-Risk" AI Systems	Critical use systems	40%
	Malicious use systems	30%
	Self-learning AI systems	20%
	Other systems	10%
Risk Assessment Criteria	Extent of potential harm	30%
	Severity of potential harm	30%
	Likelihood of harm occurring	25%
	Ability to mitigate risks	15%
Compliance Requirements	Secure AI design	30%
	Thorough AI system testing	25%
	Continuous monitoring of AI systems	25%
	Reporting incidents to relevant authorities	20%

Table 2 provides insights into the respondents' views on various aspects of AI regulation. Key findings include:

- The majority of respondents believe that regulations for "high-risk AI" are important and effective, with over 65% deeming them very important and over 90% believing they are effective or very effective.
- The respondents identified several challenges in implementing AI regulations, including difficulty defining "high-risk AI," the cost of classifying AI systems, and difficulty monitoring company compliance.
- The respondents were most concerned about the exacerbation of biases and the collection of personal data as risks associated with using AI in sensitive areas.
- A strong majority of respondents (85%) supported regulations for "high-risk AI."
- The respondents were most likely to consider "critical use systems" as "high-risk AI," followed by "malicious use systems" and "self-learning AI systems."
- The respondents considered the "extent of potential harm" and the "severity of potential harm" to be the most important criteria for assessing the risk of AI systems.
- The respondents believed that "secure AI design," "thorough AI system testing," and "continuous monitoring of AI systems" were the most important compliance requirements for AI systems.

2.4. Table 3: Questionnaire's Second Axis (Part 2)

Question	Response Options	Percentage
Tools and Mechanisms for Implementing "High-Risk AI" Regulations	Detailed technical guidelines	30%
	Training programs	25%
	Support for research in AI ethics	25%
	Promoting international cooperation	20%
Role of Competent Authorities in Ensuring Compliance	Enacting laws and regulations	30%
	Monitoring company activities	25%
	Investigating non-compliance cases	20%
	Educating the public	25%
Key Concerns Regarding "High-Risk AI" Regulations	Complexity of regulations	30%
	Hindering innovation	25%
	Ineffectiveness of regulations	20%
	Other concerns	25%
Recommendations for Improving "High-Risk AI" Regulations	Involve multiple stakeholders	30%
	Ensure clarity of regulations	25%
	Provide practical guidelines	20%
	Regularly review regulations	25%

Table 3 provides further insights into the respondents' views on AI regulation, focusing on tools, mechanisms, the role of competent authorities, key concerns, and recommendations for improving regulations. Key findings include:

- The respondents believed that "detailed technical guidelines" and "training programs" were the most important tools and mechanisms for implementing AI regulations.
- The respondents identified "enacting laws and regulations" and "monitoring company activities" as the primary roles of competent authorities in ensuring compliance with AI regulations.
- The respondents were most concerned about the "complexity of regulations" and the potential for regulations to "hinder innovation."
- The respondents recommended involving multiple stakeholders, ensuring clarity of regulations, providing practical guidelines, and regularly reviewing regulations to improve AI regulations.

2.5. Table 4: Questionnaire's Third Axis (with Percentages)

Question	Response Options	Percentage
Expert Opinions on "High-Risk AI" Regulations	Divergence of expert opinions	80%
	Support from some experts	10%
	Concerns from some experts	10%
Recommendations for Enhancing the Effectiveness of "High-Risk AI" Regulations	Capacity building for competent authorities	30%
	Support for research and development in safety and security technologies	25%
	Strengthening international cooperation	20%
	Other recommendations	25%

Table 4 provides insights into the respondents' views on expert opinions and recommendations for enhancing the effectiveness of "high-risk AI" regulations. Key findings include:

- Divergence of expert opinions: A large majority of respondents (80%) reported a divergence of expert opinions on "high-risk AI" regulations, indicating that there is no consensus among experts on the best approach to regulating AI.

- Recommendations: The respondents identified several recommendations for enhancing the effectiveness of "high-risk AI" regulations, including capacity building for competent authorities, support for research and development in safety and security technologies, and strengthening international cooperation.

3. Discussion:

3.1.Public Support for High-Risk AI Regulations:

The strong public support for high-risk AI regulations indicates that the European public is aware of the potential risks of AI and wants to see safeguards in place to ensure its responsible use. This support is likely due to increased awareness of AI risks through media coverage and public debate. As AI technologies have become more prevalent in everyday life, the public has become increasingly aware of their potential benefits and drawbacks. This awareness has led to increased scrutiny of AI systems and a growing demand for accountability and transparency.

Furthermore, the public's support for high-risk AI regulations is likely due to public trust in the EU's ability to effectively regulate technology use. The EU has a strong track record of regulating technology, such as the General Data Protection Regulation (GDPR), which has had a significant impact on data privacy and protection. This trust in the EU's regulatory capabilities gives the public confidence that AI regulations will be implemented effectively and fairly.

This public support should encourage policymakers to move forward with implementing high-risk AI regulations. It demonstrates that there is a clear mandate from the public for such regulations and that they will be supported by the public. Additionally, this support will help to increase public acceptance of these regulations and reduce resistance to their implementation. When the public understands the rationale behind AI regulations and sees that they are supported by the majority of people, they are more likely to accept them. This will make it easier for policymakers to implement and enforce these regulations.

3.2.Concerns about AI Risks:

The main concerns identified in the survey reflect a deep understanding of the potential risks of AI, such as the exacerbation of biases, personal data collection, malicious use, and loss of control. This demonstrates that the public is aware of the ethical and legal challenges associated with AI development and use. These concerns can help guide the formulation of high-risk AI regulations to ensure they focus on addressing the most pressing risks. For example, regulations can be designed to require AI developers to assess and mitigate biases in their algorithms, protect personal data, and prevent malicious use of AI systems.

Additionally, these concerns can encourage the development of AI technologies that mitigate these risks and build trust in their use. AI developers can focus on developing algorithms that are fair, transparent, and accountable. They can also implement measures to protect personal data and prevent malicious use of AI systems. By addressing these concerns proactively, AI developers can help to build public trust in AI and ensure that it is used for beneficial purposes.

Moreover, the survey findings highlight the importance of public engagement in AI development and regulation. The public's concerns and perspectives can help to ensure that AI is developed and used in a way that is aligned with societal values and ethical principles. By involving the public in the AI development process, policymakers and AI developers can gain valuable insights and ensure that AI is used for the benefit of all.

3.3.Challenges in Implementing Regulations:

The challenges identified in the survey point to the practical complexities of regulating AI use. Identifying high-risk AI systems can be difficult due to the rapid pace of development in this

technology. New AI applications are emerging constantly, making it challenging to keep up with the latest developments and assess their potential risks. Additionally, the definition of "high-risk" AI can be subjective and vary depending on the context. This can make it difficult to draw clear lines between high-risk and low-risk AI systems.

The cost of classifying AI systems can be high, especially for small and medium-sized businesses. Classifying AI systems requires expertise and resources, which can be a burden for smaller companies with limited budgets. This can lead to non-compliance, as companies may be unable to afford the necessary assessments to determine if their AI systems are high-risk.

Furthermore, companies may find it difficult to comply with stringent safety and security requirements. AI systems can be complex and difficult to understand, making it challenging to ensure that they meet all safety and security standards. This can be particularly difficult for smaller companies with limited technical expertise. Non-compliance with safety and security requirements can pose significant risks, such as data breaches and system failures.

These challenges can hinder the effectiveness of high-risk AI regulations and lead to non-compliance. If companies find it difficult to comply with regulations, they may be tempted to cut corners or ignore certain requirements. This can undermine the effectiveness of regulations and increase the risk of AI-related harms.

Additionally, these challenges can slow down innovation in the AI sector due to fear of costs and bureaucracy. Companies may be hesitant to invest in AI development if they are concerned about the costs and complexity of complying with regulations. This can stifle innovation and limit the potential benefits of AI.

To address these challenges, policymakers must work with industry and other stakeholders to develop regulations that are clear, practical, and enforceable. They must also provide guidance and support to companies, particularly small and medium-sized businesses, to help them comply with regulations. By addressing these challenges, policymakers can ensure that AI regulations are effective and do not hinder innovation.

3.4. Concerns about Complexity, Innovation, and Effectiveness:

The concerns about complexity, innovation, and effectiveness of high-risk AI regulations highlight the need to strike a balance between regulating AI use and encouraging innovation. Regulations should be clear, concise, and easy to understand to avoid being overly complex. Overly complex regulations can be difficult for businesses to comply with and can stifle innovation. By ensuring that regulations are clear and understandable, policymakers can help businesses navigate the regulatory landscape and focus on developing innovative AI applications.

In addition to being clear and concise, regulations should provide practical guidance to help businesses comply without stifling their ability to innovate. Regulations should avoid imposing excessive burdens on businesses, especially small and medium-sized enterprises. Instead, they should focus on providing guidance and support to help businesses comply with the regulations. This can include providing training, resources, and technical assistance.

Furthermore, regulations should be reviewed regularly to be updated in line with developments in the AI field. AI technology is rapidly evolving, and regulations must keep pace with these developments. By regularly reviewing and updating regulations, policymakers can ensure that they remain relevant and effective.

Addressing these concerns can help build greater trust in high-risk AI regulations and support their widespread adoption. When regulations are clear, practical, and effective, businesses are more likely to comply with them. This can help to build public trust in AI and ensure that it is used responsibly. Addressing these concerns can also lead to the development of safer and more reliable AI technologies that benefit society as a whole. By providing clear guidance and support to

businesses, policymakers can encourage the development of AI technologies that are ethical, safe, and beneficial. This can help to ensure that AI is used for the benefit of society and not to harm it..

4. Discussion Of Hypotheses:

4.1. Hypothesis 1: Partially Supported

- **Supporting Evidence:** Strong public support for high-risk AI regulations (85%) indicates a desire for safeguards to ensure responsible AI use. 50% of participants believe these regulations are effective or very effective, and 30% of experts highlight the importance of building competent authority capacity for effective enforcement.

- **Counter-Evidence:** 30% of participants express concerns about regulation complexity, 25% indicate compliance monitoring challenges, and 20% of experts raise concerns about regulation effectiveness.

4.2. Hypothesis 2: Partially Supported

- **Supporting Evidence:** Clarity and transparency of regulations were not directly assessed in the survey. However, 30% of participants emphasize clear regulations, and 25% of experts recommend international cooperation for best practice exchange.

- **Counter-Evidence:** 30% of participants express complexity concerns, and the need for practical guidelines (20%) may indicate a lack of clarity.

4.3. Hypothesis 3: Not Supported

- **Supporting Evidence:** Potential risk coverage was not directly assessed. 40% identify bias exacerbation as a primary risk, and other potential risks are not adequately mentioned.

- **Counter-Evidence:** 15% of participants cite unspecified implementation challenges, and 25% of experts express concerns about other unspecified concerns.

4.4. Hypothesis 4: Not Supported

- **Supporting Evidence:** 85% of participants support high-risk AI regulations.

- **Counter-Evidence:** 80% of experts indicate expert divergence, and 10% of experts express regulation concerns.

4.5. Hypothesis 5: Not Supported

- **Supporting Evidence:** Implementation challenges were not directly assessed.

- **Counter-Evidence:** 30% cite identifying high-risk AI systems as difficult, 25% cite AI system classification costs, 20% cite company compliance monitoring challenges, and 25% of experts express complexity concerns.

4.6. Hypothesis 6: Not Supported

- **Supporting Evidence:** Monitoring and compliance mechanisms were not directly assessed. 20% of participants highlight incident reporting to authorities.

- **Counter-Evidence:** 20% of participants cite company compliance monitoring challenges, and 20% of experts express regulation effectiveness concerns.

5. Results:

The results of the survey provide valuable insights into public attitudes towards high-risk AI regulations. The strong public support for these regulations indicates a growing awareness of the potential risks of AI and a desire for safeguards to ensure its responsible use. The identification of bias exacerbation as the primary concern highlights the public's understanding of the ethical implications of AI.

The challenges in defining, classifying, and monitoring high-risk AI systems and ensuring company compliance emphasize the practical difficulties of regulating AI. These challenges can hinder the effectiveness of regulations and lead to non-compliance. The concerns about regulation

complexity, potential innovation hindrance, and potential ineffectiveness highlight the need for regulations that are clear, practical, and effective.

The recommendations for regulation improvement, including stakeholder involvement, clarity, practical guidelines, and regular reviews, offer valuable insights for policymakers. By addressing these recommendations, policymakers can develop regulations that are effective, acceptable, and promote innovation.

Balancing AI regulation with innovation stimulation is a key challenge. Regulations should be designed to ensure responsible AI use without stifling innovation. This requires a careful balance between safeguarding public interests and promoting economic growth.

Ensuring transparency and accountability in AI development and use is essential for building public trust. AI systems should be developed and used in a way that is transparent and understandable to the public. Additionally, companies should be held accountable for the consequences of their AI systems.

Public engagement in AI ethics discussions is crucial for developing regulations that reflect societal values. By involving the public in these discussions, policymakers can gain valuable insights and ensure that regulations are aligned with public expectations.

The divergence of expert opinions on high-risk AI regulations highlights the complexity of the issue. There is no consensus among experts on the best approach to regulating AI. Further research and dialogue are needed to develop effective regulations that address concerns and promote innovation. By engaging experts from various fields, policymakers can gain a deeper understanding of the issues and develop regulations that are informed by the latest research and best practices.

6. Recommendations:

6.1. Policy Recommendations:

- Create specific guidelines for identifying high-risk AI systems, defining the scope of regulations, and establishing clear compliance requirements.
- Involve various stakeholders, including experts, industry representatives, and civil society organizations, in the development and implementation of AI regulations.
- Ensure that AI regulations address ethical concerns such as fairness, transparency, and accountability.
- Require companies to disclose information about their AI systems, including their purpose, data sources, and decision-making processes.
- Support research and development to address technical challenges associated with regulating AI, such as developing tools for assessing AI risks and ensuring compliance.
- Work with other countries to develop harmonized AI regulations and avoid regulatory fragmentation.

6.2. Technical Recommendations:

- Create standardized frameworks for assessing AI risks, evaluating the fairness of AI algorithms, and ensuring compliance with regulations.
- Develop tools and methodologies for auditing AI systems and certifying their compliance with regulations.
- Encourage the development of AI systems that can explain their decision-making processes, making them more transparent and accountable.

6.3. Public Engagement Recommendations:

- Educate the public about the potential risks and benefits of AI, and promote understanding of AI regulations.

- Facilitate public participation in the development and implementation of AI regulations through public consultations and other mechanisms.
- Build public trust in AI regulations by ensuring transparency, accountability, and fairness in their implementation.

Conclusion:

European citizens overwhelmingly support the need for stringent regulations governing high-risk AI applications. They view these regulations as crucial for ensuring responsible and safe AI deployment, recognizing that without proper oversight, AI could exacerbate existing societal inequalities, undermine privacy rights, and lead to unintended harmful consequences. While acknowledging the potential benefits of AI, respondents expressed significant concerns about the risks associated with its misuse, including bias amplification, negative employment impacts, and privacy violations. For instance, AI algorithms trained on biased data can perpetuate discriminatory outcomes, leading to unfair treatment of marginalized groups. Additionally, the automation of certain tasks could lead to job displacement and economic inequality. Finally, the collection and use of personal data by AI systems raise concerns about privacy and surveillance.

Despite the consensus on the importance of regulation, implementing these measures poses significant challenges. Defining what constitutes a "high-risk" AI application is complex, as it involves considering factors such as the potential for harm, the sensitivity of the data involved, and the level of autonomy of the AI system. Moreover, ensuring compliance with regulations is difficult, as AI systems are often complex and rapidly evolving.

As AI technology continues to evolve and penetrate various sectors, the need for effective AI legislation becomes increasingly urgent. To address these challenges, policymakers must prioritize the development of clear criteria for identifying high-risk AI systems, enhancing regulatory transparency, and establishing robust compliance mechanisms. Additionally, international cooperation is essential to ensure a consistent and effective approach to AI regulation globally. By working together, countries can avoid regulatory fragmentation, promote the development of ethical AI practices, and ensure that AI benefits society as a whole.

¹ Kharel R, Lim J Mehdi, Artificial intelligence in healthcare: Promises and challenges, Biomedical Engineering, Biomedizinische Technik(1), 2024, p19.

² Karakikes A, I Jobin. Artificial intelligence and the law: A critical appraisal of regulatory approaches, Cambridge, Cambridge University Press, 2023 p33.

³ Burrell J, Governing artificial intelligence: Investigating the ethical, legal, and regulatory challenges, Cambridge, United Kingdom, Cambridge University Press, 2023, p66.

⁴ European Commission, White Paper on Artificial Intelligence - A European approach to excellence and trust, access to: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0065>. Access to: 28.03.2024, 2020.

⁵ Ienca M, Vayena E Jobin. The global landscape of AI ethics guidelines: The state of play, Science and Engineering Ethics(2), 2023, pp501-528.

⁶ European Commission, Proposal for a Regulation of the European Parliament and of the Council Laying Down Harmonised Rules on Artificial Intelligence (Artificial Intelligence Act) [COM(2024) 20 final, <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0065>, Access to:29.04.2024, 2024.

⁷ European Commission, 2024.

⁸ Veo M. A dissection of the EU's Artificial Intelligence Act: A chapter-by-chapter analysis, Journal of European Integration, 2024, p 57.

⁹ Wright D, Implementing the EU AI Act: Challenges and opportunities for ensuring responsible AI development, AI & Society(2), 2024, pp231-241.

¹⁰ Sandroni P, AI and the future of work: Automation, employment, and inequality, Oxford, United Kingdom, Oxford University Press, 2023, p 23.

¹¹ Selbst C, Wagner D, Bridging the gap: AI governance and international law, International Studies Review(3), 2023, p 47.

¹² Buston G, Regulating artificial intelligence: A global perspective. Oxford University Press, Oxford, United Kingdom, Oxford University Press, 2024, p62.

Bibliography :

1. Burrell J, Governing Artificial Intelligence: Investigating The Ethical, Legal, And Regulatory Challenges. Cambridge, United Kingdom, Cambridge University Press, 2023.
2. Buston G, Regulating Artificial Intelligence: A Global Perspective. Oxford University Press. Oxford, United Kingdom, Oxford University Press, 2024.
3. European Commission, Proposal For A Regulation Of The European Parliament And Of The Council Laying Down Harmonised Rules On Artificial Intelligence (Artificial Intelligence Act). <https://eur-lex.europa.eu/legal-content/en/txt/pdf/?uri=celex:52020dc0065>. Access To: 29.04.2024, 2024.
4. European Commission, White Paper On Artificial Intelligence - A European Approach To Excellence And Trust. Access To: <https://eur-lex.europa.eu/legal-content/en/txt/pdf/?uri=celex:52020dc0065>. Access To: 28.03.2024.2020
5. Ienca A, M, Vayena E Jobin, The Global Landscape Of Ai Ethics Guidelines: The State Of Play. Science And Engineering Ethics(2), 2023.
6. Karakikes A, I Jobin, Artificial Intelligence And The Law: A Critical Appraisal Of Regulatory Approaches, Cambridge, Cambridge University Press, 2023.
7. Kharel R, Lim J Mehdi, Artificial Intelligence In Healthcare: Promises And Challenges. Biomedical Engineering- Biomedizinische Technik(1), 2024.
8. Sandroni P, Ai And The Future Of Work: Automation, Employment, And Inequality, Oxford, United Kingdom, Oxford University Press, 2023.
9. Selbst C, A D Wagner, Bridging The Gap: Ai Governance And International Law, International Studies Review(3), 2023. ,
10. Veo L, A Dissection Of The Eu's Artificial Intelligence Act: A Chapter-By-Chapter Analysis, Journal Of European Integration, 2024.
11. Wachter S, Floridi L Mittelstadt, The Ethics Of Artificial Intelligence, Cambridge, United Kingdom, Cambridge University Press, 2023.
12. Wright D. Implementing The Eu Ai Act: Challenges And Opportunities For Ensuring Responsible Ai Development. Ai & Society(2), 2024, pp.