International Journal of Research and Review
Volume 11; Issue: 11; November 2024
Website: www.ijrrjournal.com
Review Paper *E-ISSN: 2349-9788; P-ISSN: 2454-2237*

Development of Artificial Intelligence in Business Ethics and Regulatory Responsibilities in the Era of Artificial Intelligence

Purwanti[1], Nur Arifudin[2], Mita Sonaria[3], Sukirman[4]

[1,2]Universitas Mulawarman, Indonesia
[3,4]Universitas 17 Agustus 1945 Samarinda, Indonesia

Corresponding Author: Purwanti

DOI: https://doi.org/10.52403/ijrr.20241104

ABSTRACT

The purpose of this study is to analyze development of artificial intelligence in business ethics and regulatory responsibilities in the era of artificial intelligence. The research methods applied in this study are literature study, comparative regulatory analysis, regulatory analysis, and regulatory risk analysis. Through this research method, it is expected to provide a comprehensive picture of the regulatory framework, ethics, and responsibilities related to the development of artificial intelligence in a business context. The results of the study show that the implementation of a regulatory framework for the use of artificial intelligence in business faces a number of complex challenges, such as regulatory uncertainty, unclear regulatory obligations, data privacy and security, algorithmic bias, compliance with regulations and standards, ethical challenges in autonomous decisions, accountability in cases of failure, understanding by stakeholders, risks at the personal level, and changes in job and market dynamics.

Keywords: Development, Artificial Intelligence, Business Ethics, Regulatory Responsibilities, Era of Artificial Intelligence

INTRODUCTION

Previously, the industrial revolution focused on the use of electronics and technology for production automation. Currently, in the era of the Industrial Revolution 4.0 or the fourth industrial revolution, the connectivity of humans, machines and data is getting closer. There are several technologies that are indicators, including the internet of things, artificial intelligence, wearable technology, advanced robots, and three-dimensional printing (Simbolon, 2023).

Artificial intelligence is designed to understand and produce text in various contexts. In the context of modern business, the presence of artificial intelligence has a significant impact. Here are some of the relevance of artificial intelligence in modern business such as data analysis and prediction with artificial intelligence can analyze business data quickly and accurately. This helps companies make decisions based on better information and can predict business trends for long-term planning (Klein, 2015).

Artificial intelligence technology allows machines to understand, analyze, and respond to human language. This can be used in chatbots for customer service, sentiment analysis, or even automatic translation (Johnson, 2019).

In other aspects such as image and voice recognition, artificial intelligence systems can recognize patterns in images and

sounds. This can be used for authentication, security monitoring, or image analysis for product development.

Improved automation processes artificial intelligence can be used to automate repetitive tasks, such as data processing, inventory management, and production processes. This increases operational efficiency and reduces human error.

Personalization and marketing by leveraging customer data, artificial intelligence can help in personalizing customer experiences and designing more effective marketing campaigns by identifying consumer preferences and behaviors (Adams, 2012).

Artificial intelligence can be used to analyze financial and operational risks, providing critical information for decision making and strategic planning.

Robotics and Industrial Automation in industrial environments, robotics and automation based on artificial intelligence can increase productivity, safety, and precision in various production processes (Salam, 1997).

E-commerce and chatbots in e-commerce, chatbots use artificial intelligence to provide automated customer support, improve responsiveness, and provide a better shopping experience.

Artificial intelligence supply chain optimization can be used to forecast demand, optimize inventory, and improve overall supply chain efficiency.

Artificial intelligence security pattern recognition can help detect suspicious security patterns or cyber threats, improving the security of company information and systems.

The use of artificial intelligence in modern business can provide competitive advantages, improve operational efficiency, and open up greater opportunities for innovation (Smith, 2020). However, it is also important to pay attention to ethics and security in the use of this technology. The importance of having a regulatory framework in the development of artificial intelligence in a business context is very significant. A number of fundamental reasons support the need for clear regulations and regulatory frameworks for artificial intelligence in business, including (Watson, 2014):

1. Privacy and Data Protection
   The use of artificial intelligence often involves the collection, processing, and analysis of sensitive data. A regulatory framework is needed to ensure that customer data and personal information are properly protected, and that companies comply with applicable privacy standards.
2. Security and Ethics
   Regulation can help ensure that the use of artificial intelligence in business complies with certain security standards. This includes protection against cyber attacks and the ethical use of artificial intelligence technology. Regulatory frameworks can also address issues related to responsibility and accountability in the use of artificial intelligence.
3. Transparency and Explainability
   In some cases, artificial intelligence can be a “foggy field” where it is difficult to understand how and why decisions are made. Regulatory frameworks can set requirements for transparency and explainability in the use of artificial intelligence, ensuring that companies can explain the algorithms and decisions made by artificial intelligence systems.
4. Prevention of Discrimination
   Artificial intelligence algorithms can create risks of discrimination, both unintentionally and intentionally. A regulatory framework can ensure that companies avoid practices that could lead to discrimination based on gender, race, religion, or other factors.
5. Regulatory Accountability
   A regulatory framework provides a regulatory basis for determining responsibility and accountability in the event of failure or negative impact caused by artificial intelligence systems. This helps protect companies and

consumers and creates clear norms in the industry.

6. Patents and Intellectual Property
   Regulation is needed to address issues of ownership and protection of intellectual property rights related to artificial intelligence technology. This includes patents, copyrights, and other issues related to ownership and innovation.
7. Safety and Quality Standards
   A regulatory framework can set safety and quality standards that artificial intelligence solutions in business must meet. This is important to protect consumers and prevent the use of unsafe or low-quality technology. By having a solid regulatory framework in place, businesses can mitigate regulatory risks, increase consumer confidence, and create an environment that supports responsible and sustainable innovation in the development and application of artificial intelligence technologies.

This journal aims to investigate, analyze, and provide in-depth insights into the impacts and challenges arising from the application of artificial intelligence technologies in a business context.

This journal may aim to investigate how the application of artificial intelligence may impact business operations, corporate strategy, and market dynamics. This involves research into the changes in productivity, efficiency, and innovation that may arise with the adoption of artificial intelligence technologies. The journal may also delve into the ethical dilemmas that may arise from the use of artificial intelligence in business. This includes examining the fairness, transparency, and social impacts that artificial intelligence systems may generate.

The journal also explores the regulatory risks that may arise as artificial intelligence advances in business. These include issues related to privacy, regulatory responsibility for decisions made by algorithms, and questions about data ownership and intellectual property rights.

Encouraging Ethical Standards and Regulatory Responsibilities, the journal seeks to encourage the creation and implementation of clear ethical standards and regulatory frameworks to guide the use of artificial intelligence in business. This may include recommending ethical guidelines, regulations, or best practices.

The journal provides insights into how businesses can address the ethical and regulatory challenges associated with artificial intelligence. This may include suggestions for the development of internal policies, transparency mechanisms, or regulatory responsibility practices that organizations can adopt.

The journal also aims to engage readers in a broader dialogue about the ethics and regulatory responsibilities of using artificial intelligence in business. This may include insights from stakeholders such as customers, employees, and the general public.

The journal can serve as a starting point for further research in this domain. Providing a strong knowledge base can help drive further research to understand the deeper ethical and regulatory implications of artificial intelligence in business.

With a focus on the ethical and regulatory responsibilities, the journal seeks to achieve a holistic and in-depth understanding of how companies can integrate artificial intelligence technologies in a manner that respects ethical values and complies with applicable regulatory frameworks.

The purpose of this research is to analyze crisis communication management of the Ministry of Religion of Serdang Bedagai Regency in handling the cancellation policy for prospective Indonesian hajj pilgrims during the COVID-19 pandemic in Serdang Bedagai Regency.

RESEARCH METHODS

Regulatory framework research is a set of rules, regulations, and laws that govern the operations and conduct of a particular industry or sector. It provides a framework for how companies, organizations, and

individuals must comply with certain standards and guidelines set by the government or other regulatory bodies (Marzuki, 2013). Regulatory framework research in the development of artificial intelligence in business with a focus on ethics and regulatory responsibilities can involve a series of steps and methods to understand, analyze, and evaluate the impacts and regulatory implications associated with the application of artificial intelligence technology.

The research methods applied is used to solve real-world problems by applying existing knowledge and data (Ansori, 2020). Applied research is often a follow-up to basic research, which focuses on advancing knowledge and theory. For example, a researcher might study the growth of corn in a specific area for basic research, and then use those findings to improve corn growth on a particular farm for applied research (Moleong, 2008). The research methods applied in this study are:

1. Literature Study
   Conduct a literature study to understand the development of regulations and regulatory norms related to artificial intelligence in various jurisdictions. Review the literature that discusses ethics and regulatory responsibilities in the context of the use of artificial intelligence in business.
2. Comparative Regulatory Analysis
   Compare the regulatory frameworks for artificial intelligence across countries or jurisdictions to understand differences and similarities. Identify trends and patterns in how countries address the ethics and regulatory responsibilities of using artificial intelligence.
3. Regulatory Analysis
   Examine the latest regulatory regulations and policies related to the use of artificial intelligence in business. Evaluate how these regulations may impact the development and implementation of artificial intelligence technologies.
4. Regulatory Risk Analysis
   Conduct a regulatory risk analysis related to the implementation of artificial intelligence in business. Identify potential regulatory risks, including sanctions and fines that may be applied if regulations are not complied with.

Through this research method, it is expected to provide a comprehensive picture of the regulatory framework, ethics, and responsibilities related to the development of artificial intelligence in a business context.

RESULT AND DISCUSSION

History of Artificial Intelligence

Artificial intelligence is one of the 4IR technologies whose existence is increasingly awaited by various countries because of its benefits. The project of making artificial intelligence, broadly includes 2 groups, including the artificial intelligence group and other related groups.

The history of the development of artificial intelligence involves the evolution of concepts and technologies from time to time. The following is a general overview of the history of the development of artificial intelligence.

The formation of the concept in the early 1950s, and the early development of artificial intelligence began in the early 1950s, when researchers such as Alan Turing and John McCarthy began to consider the possibility of creating machines that could think like humans. In 1956, McCarthy together with Marvin Minsky, Nathaniel Rochester, and Claude Shannon held the Dartmouth Conference, which is often considered an early milestone in the formation of the artificial intelligence discipline.

Pioneers of Artificial Intelligence Development (1950s-1960s), in this decade, researchers focused on developing computer programs that could imitate human intelligence. John McCarthy introduced the term "artificial intelligence" and created the Lisp programming language, which is widely used in the development of artificial

intelligence. Marvin Minsky and Seymour Papert developed the perceptron model, which is the basis for the development of artificial neural networks. Natural language processing and intelligent systems design (1960s-1970s), research continued to grow in natural language processing, knowledge-based systems, and symbolic understanding. However, early high hopes were sometimes not in line with the desired progress, and by the mid-1970s, support and funding for artificial intelligence research declined in a period known as the artificial intelligence winter.

Development of Artificial Intelligence in Business Ethics and Regulatory Responsibilities in the Era of Artificial Intelligence

The implementation of a regulatory framework for the use of artificial intelligence in business faces a number of complex challenges, such as:

1. Regulatory Uncertainty
   Artificial intelligence technology continues to evolve, and regulations often struggle to keep up with these developments. Regulatory uncertainty can arise in terms of definitions, responsibilities, and limitations regarding the use of artificial intelligence.
2. Unclear Regulatory Obligations
   Determining who is responsible if something bad happens due to the use of artificial intelligence is often complicated. For example, whether the responsibility lies with the developer, the owner of the artificial intelligence system, or the business entity that uses it.
3. Data Privacy and Security
   The use of artificial intelligence often involves the collection and analysis of big data. Data privacy and security challenges arise when sensitive data is used to train artificial intelligence models, and when the results may impact individual privacy.
4. Algorithmic Bias
   Artificial intelligence algorithms can create and amplify bias, depending on the data used to train them. These challenges can result in discrimination and unfairness in decision-making, which can involve regulatory risks.
5. Compliance with Regulations and Standards
   Artificial intelligence is subject to different regulations and standards across jurisdictions. Adapting the use of artificial intelligence to all of these regulations and ensuring compliance can be a complex challenge.
6. Ethical Challenges in Autonomous Decisions
   In the case of artificial intelligence systems that can make autonomous decisions, the ethical and regulatory questions surrounding who is responsible for the consequences of those decisions become complex. This includes regulatory and ethical responsibilities in decisions that may not be humanly explicable.
7. Accountability in Cases of Failure
   When artificial intelligence technology fails or causes harm, questions of liability and compensation arise. Determining the extent to which a business entity or individual is liable can be challenging.
8. Understanding by Stakeholders
   Stakeholders, including developers, business owners, and end users, may not fully understand the regulatory and ethical implications of using artificial intelligence. Effective education and communication are needed to ensure better understanding.
9. Risks at the Personal Level
   Increasingly sophisticated artificial intelligence can understand and respond to individual personality characteristics. This raises the risk of regulatory conflicts related to privacy rights and freedom of expression.
10. Changes in Job and Market Dynamics
    The use of artificial intelligence in business could impact the job market

and employment dynamics. Regulatory challenges arise in managing these changes fairly and providing protection for workers who may be affected.

CONCLUSION AND SUGGESTION

The results of the study show that the implementation of a regulatory framework for the use of artificial intelligence in business faces a number of complex challenges, such as regulatory uncertainty, unclear regulatory obligations, data privacy and security, algorithmic bias, compliance with regulations and standards, ethical challenges in autonomous decisions, accountability in cases of failure, understanding by stakeholders, risks at the personal level, and changes in job and market dynamics.

Addressing the ethical and regulatory aspects of artificial intelligence in the future requires a holistic approach that continues to evolve as technology advances. Here are some suggestions for further research and practice:

1. Development of an International Regulatory Framework
   A collaborative effort is needed from the international community to develop a global regulatory framework to address the ethical and regulatory challenges of artificial intelligence. This will help create uniform standards across the world.
2. Stakeholder Engagement and Education
   It is important to further involve stakeholders such as consumers, civil society, and non-governmental organizations in the process of developing and assessing artificial intelligence technologies. Continuous education on the ethical and regulatory implications of artificial intelligence is also needed to increase public understanding.
3. Responsive Regulatory Updates
   Regulations should be designed in such a way that they can quickly adapt to the development of artificial intelligence technology. Responsive and adaptable mechanisms need to be implemented to accommodate innovation and changes in the industry.
4. Independent Audit and Certification
   Encourage independent audit and certification approaches to assess ethical and regulatory compliance in artificial intelligence implementations. Such certification can provide stakeholders with additional assurance about the compliance and ethical use of artificial intelligence technologies.
5. Responsible Algorithm Development
   Focus on research to develop more responsible and transparently explainable algorithms. Initiatives such as fairness-aware machine learning and explainable artificial intelligence can be leveraged to address bias and improve interpretability.
6. Innovation in Differential Privacy
   Further research in differential privacy can help mitigate privacy risks while enabling the use of data for training artificial intelligence models. This will be a critical step in achieving a balance between innovation and privacy protection.
7. Multidisciplinary Dialogue Forums
   Encourage the establishment of dialogue forums involving experts in regulation, computer science, ethics, and business stakeholders. These dialogues can help identify complex issues and provide holistic solutions.
8. Collaboration with Industry
   Closer collaboration between researchers, regulatory practitioners, and industry players can accelerate understanding of the regulatory and ethical implications of artificial intelligence across sectors.
9. Social Impact Research
   Conduct in-depth research on the long-term social impacts of implementing artificial intelligence technologies, including potential changes to the labor market, economic inequality, and the integration of technology across sectors.
10. Increased Organizational Awareness

Encourage organizations to prioritize ethical and regulatory awareness, by incorporating ongoing education and training into organizational culture.

11. Cross-Sector Collaboration
    Increase collaboration between the private sector, government, and civil society to create balanced policies and ensure that the use of artificial intelligence reflects the values of society at large.

Declaration by Authors

Acknowledgement: None
Source of Funding: None
Conflict of Interest: No conflicts of interest declared.

REFERENCES

1. Adams, M., L. (2012). Kolaborasi Pemerintah dan Sektor Swasta untuk Inovasi Berkelanjutan: Pelajaran dari Pendekatan Hukum. *Jurnal Pembangunan Berkelanjutan, 15*(2), 167-185.
2. Ansori, M. 2020. *Metode Penelitian Kuantitatif*. Edisi 2. Airlangga University Press.
3. Johnson, R., M. (2019). Insentif Hukum untuk Inovasi Berkelanjutan: Sebuah Studi Perbandingan. *Jurnal Hukum dan Ekonomi, 42*(3), 315-336.
4. Klein, E., S. (2015). Hukum Ekonomi dan Teknologi Hijau: Membangun Masa Depan Berkelanjutan. *Jurnal Hukum Lingkungan Harvard, 32*(4), 589-612.
5. Marzuki, Peter Mahmud. (2013). *Penelitian Hukum*. Cetakan ke-8. Edisi Revisi. Jakart: Kencana Prenada Media Group.
6. Moleong, Lexy J. (2008). *Metodologi Penelitian Kualitatif*. Bandung: PT Remaja.
7. Salam, Burhanuddin. (1997). *Etika Sosial: Asas Moral dalam Kehidupan Manusia*. PT Rineka Cipta.
8. Simbolon, Yolanda. (2023). Pertanggungjawaban Perdata Terhadap Artificial Intelligence yang Menimbulkan Kerugian Menurut Regulasi di Indonesia. *9*.
9. Smith, J., K. (2020). Peran Hukum Ekonomi dalam Mendorong Inovasi Teknologi Berkelanjutan. *Jurnal Hukum Lingkungan dan Kebijakan, 28*(2), 145-168.
10. Watson, P., D. (2014). Kerangka Hukum untuk Inovasi Teknologi dalam Praktik Bisnis Hijau. *Jurnal Hukum dan Lingkungan, 21*(1), 112-130.

How to cite this article: Purwanti, Nur Arifudin, Mita Sonaria, Sukirman. Development of artificial intelligence in business ethics and regulatory responsibilities in the era of artificial intelligence. *International Journal of Research and Review*. 2024; 11(11): 26-32. DOI: *https://doi.org/10.52403/ijrr.20241104*

******