

Conceptualizing the Establishment of BPPKE: Legal Protection for Businesses in Indonesia

Hanny Hilmia Fairuza¹, Nadhila Citra Supriantoro², Ardani Rizky Trianto³

¹Universitas Jember, Indonesia

²Universitas Jember, Indonesia

³Universitas Jember, Indonesia

*Corresponding Author: fairuzahannyhilmia@gmail.com

Article History:

Submitted:

09-02-2024

Received:

11-02-2024

Accepted:

05-04-2024

Keywords:

Supervisory Body;

Business Law;

Electronic Contracts;

Protection; Smart

Contract

Abstract

The development of technology brings significant changes in human life, including in the formation of more efficient electronic agreements. Smart contracts, as programmable contracts using blockchain technology, have facilitated agreements without intermediaries with high efficiency and security. In Indonesia, smart contracts are starting to be used although they still encounter pros and cons, especially regarding the aspect of legal validity. The availability of specific regulations regarding electronic contracts poses a major challenge, where the law must provide guarantees and legal recognition equivalent to conventional contracts. Therefore, the establishment of the Electronic Contract Supervision and Protection Agency (BPPKE) becomes important to create order, certainty, and justice for all parties involved in electronic transactions. BPPKE is expected to oversee and supervise the implementation of applicable regulations so that legal objectives can be achieved well in the digital business era. The research method used is Reform-Oriented Research aimed at assessing the sustainability of existing rules and proposing changes to rules deemed necessary related to electronic contracts in Indonesia. Thus, the conceptualization of the establishment of BPPKE is expected to enhance the investment and business climate in Indonesia, as well as strengthen legal protection for business actors, both nationally and internationally. This is in line with the rapid development of information and communication technology, where electronic transactions are becoming increasingly dominant in global business activities.

1. Introduction

The continuous advancement in human civilization is reflected in the changing dynamics of time from conventional life to a more modern one. This progress is attributed to the positive influence of the development of science and technology, which facilitates the fulfillment of life's needs and social interactions among individuals or groups. This transition is marked by a shift from conventional agreements or collaborations to electronic agreements or collaborations, which are perceived as more modern. With the widespread development of science and technology, society finds itself in a technological transition phase.¹

Electronic contracts, commonly known as e-contracts, facilitate and streamline contracting activities among individuals or groups within society more efficiently and effectively without the need for face-to-face interactions between parties. Alongside the innovation of electronic contracts, smart contracts emerge as a means of providing electronic

¹ Indah Parmitasari, 'Eksistensi Smart Contract Menurut Hukum Kontrak Di Indonesia', 2021.

contract services, facilitating the interests of individuals in making agreements.² Smart contracts are programmatically formed contract services where agreements between parties are encoded and formulated into computer code using blockchain programming systems. They are executed automatically without the need for intermediaries or third parties and cannot be modified once established. The function of smart contracts is to regulate, execute, and negotiate agreements or contracts between involved parties without requiring intermediaries.³

Smart contracts are gaining traction in Indonesia, as they offer a new format of contract with code stored in blockchain technology, enabling automatic processing of transactions when all agreement terms encoded are fulfilled by the transacting parties. While the utilization of smart contracts in Indonesia presents numerous benefits, it also sparks debate. Potential legal issues, such as the validity of smart contracts, arise due to their novelty and the absence of specific regulations governing them in Indonesia⁴ Although smart contracts are allowed in Indonesia under the principle of freedom of contract as stipulated in Article 1338 of the Indonesian Civil Code, specific regulations governing their application are lacking. This condition poses a challenge for the government to develop specialized regulations to regulate various activities conducted through blockchain technology. Therefore, the presence of law is crucial to create order and regulation. Without clear legal provisions, legal certainty and protection for parties engaging in contracts via the internet may become unclear.⁵ Several studies have explored the legal construction related to blockchain-based smart contracts, yet no prior research specifically addresses the formation of a supervisory body for electronic contract protection using blockchain technology and its implementation in Indonesia.

In light of the aforementioned issues, this study aims to conceptualize the establishment of the Electronic Contract Supervision and Protection Agency (BPPKE) to realize Business Law Protection in Indonesia. The establishment of this agency is expected to protect the rights of all parties involved in contracts using smart contracts comprehensively. It will also provide legal certainty and protection for potential issues, errors, or mistakes during the electronic system utilization process, which can be regulated effectively. With the establishment of this

² Philipp Hacker Et Al., 'Regulating Blockchain: Techno-Social And Legal Challenges – An Introduction', In *Regulating Blockchain*, By Philipp Hacker Et Al. (Oxford University Press, 2019), 1-24, <https://doi.org/10.1093/oso/9780198842187.003.0001>.

³ Jason Pratama Ong, 'Electronic Contracts In The Digital Age: Foundations And Challenges' (Mik, 2019): - Penelusuran Google', Accessed 30 January 2024, [https://www.google.com/search?q=Electronic+Contracts+In+The+Digital+Age%3A+Foundations+And+Challenges%22+\(Mik%2C+2019\)%3A&sourceid=chrome&ie=utf-8#vhid=zephyrhttps://journal.prasetiyamulya.ac.id/journal/index.php/tlj/article/download/519/355/&vssid=collectionitem-web-desktophttps://journal.prasetiyamulya.ac.id/journal/index.php/tlj/article/download/519/355/&ip=1](https://www.google.com/search?q=Electronic+Contracts+In+The+Digital+Age%3A+Foundations+And+Challenges%22+(Mik%2C+2019)%3A&sourceid=chrome&ie=utf-8#vhid=zephyrhttps://journal.prasetiyamulya.ac.id/journal/index.php/tlj/article/download/519/355/&vssid=collectionitem-web-desktophttps://journal.prasetiyamulya.ac.id/journal/index.php/tlj/article/download/519/355/&ip=1).

⁴ ardiana Hidayah, 'Asas Iktikad Baik Dalam Kontrak Elektronik', *Solusi* 19, No. 2 (1 May 2021): 155-64, <https://doi.org/10.36546/solusi.v19i2.361>.

⁵ Antonopoulos, 'Smart Contracts: Bridging The Gap Between Expectation And Reality | Oxford Law Blogs', Accessed 30 January 2024, <https://blogs.law.ox.ac.uk/business-law-blog/blog/2016/07/smart-contracts-bridging-gap-between-expectation-and-reality>.

agency, regulatory compliance with existing laws can be observed, thus achieving legal objectives such as creating order, certainty, and justice for all parties involved in electronic transactions and other forms thereof.

2. Methods

The research method used in the journal entitled "Conceptualization of the Establishment of the Electronic Contract Supervision and Protection Agency (BPPKE) to Realize Business Law Protection in Indonesia" is the Reform Oriented Research method. This method is employed to assess the sustainability of existing regulations and propose changes to regulations deemed necessary. Additionally, this research method aims to improve the rules found in regulations governing electronic contracts to eliminate legal ambiguities resulting from their existence. A comparative approach is also utilized with countries facing similar issues in regulating electronic contracts in everyday practice. For example, regarding the legality of using electronic contracts, the United States has an independent agency for online business practices that minimize risks and protect human rights. Similarly, in Indonesia, the existence of electronic contracts risks infringing on human rights in business.

This research includes a systematic review of the literature, followed by a description of the discussion flow to draw conclusions and recommendations. This method emphasizes the use of secondary legal materials, such as legislation related to electronic contracts, textbooks, articles, and scientific papers in the field of business law, as primary legal sources. Tertiary legal sources include legal magazines, brochures, the internet, dictionaries, and legal factors occurring in practice. The technique of collecting legal materials in this research is qualitative, meaning that it does not involve calculations and aims to understand, develop, and describe data in a complex manner. Qualitative analysis is conducted using both inductive and deductive approaches to gain a deep understanding and draw conclusions on the issues discussed in this paper.

3. Results and Discussion

3.1. The Urgency of Electronic Contract Protection in Realizing Business Legal Protection in Indonesia Through BPPKE

In its legal foundation, the state is highly obligated to protect users of electronic contracts and is fully responsible for its citizens because, according to Human Rights, the state is the primary entity with obligations in Human Rights, one of which is the obligation to protect. On the other hand, the state also has other obligations, namely to enforce the law to maintain justice for individuals who feel aggrieved in using electronic contracts. In its legal basis, Indonesia has enacted laws related to electronic contracts contained in Law Number 19 of 2016 concerning Amendments to Law Number 11 of 2008 concerning Electronic Information and Transactions or the ITE Law. However, there are not many regulations that specifically address electronic contracts and their violations formulated in the ITE Law. This situation poses a risk for every user of electronic contracts due to the lack of specific regulations in the ITE Law, one of which is the absence of regulations governing the dangers of electronic contracts and the protection of victims of electronic contracts as well as their perpetrators' punishment system. Besides the lack of regulations, Indonesia also only has Law Number 8 of 1999 concerning Consumer Protection, which only applies within the jurisdiction of the Republic of Indonesia, even though electronic contract networks have expanded beyond the

country's borders. This situation is highly vulnerable; hence Indonesia needs to establish the BPPKE as a legitimate institution to ensure the safety and rights of individual consumers are not violated.

Electronic contracts, or commonly referred to as smart contracts, operate automatically using blockchain technology when predefined conditions are met.⁶ These smart contracts have begun to be implemented in several countries, particularly within corporate scopes. In Indonesia, the existence of smart contracts still raises pros and cons. Some positive impacts considered include transparency, immutability, acceleration, security, and trust because every transaction and change in smart contracts are recorded in an unchangeable blockchain, thus reducing the risk of fraud. Furthermore, smart contract innovation allows for automation processes, more complex programming, and eliminates intermediaries such as lawyers and notaries, thereby saving costs and time. However, among these positive impacts, there are also negative consequences concerning legal validity. Another entity that may suffer from the existence of smart contracts is individuals; dependence on smart contract technology can lead to vulnerabilities to operational risks such as irreversible errors and inflexibility, as well as the complete absence of protection in case of cyberattacks or contract disputes. In Indonesia, there are no specific regulations governing the legality and consumer protection regarding the use of smart contracts involved in hacking cases. Unlike the State of Illinois in the United States, which has comprehensive legal regulations for the use of smart contracts and blockchain technology through the Blockchain Technology Act of 2019. This law provides legal recognition and protection for a contract stored in electronic record form. It also regulates dispute resolution, data security, and government obligations regarding smart contracts and blockchain. In addition to hacking cases, various issues arise from the use of smart contracts, such as contract dispute resolution. Therefore, specific regulations and legal institutions are needed to provide supervision, protection, and guarantees to users or consumers who collaborate using this technology.⁷

The establishment of a legal institution to oversee, protect, and guarantee all agreements made in smart contracts in Indonesia is essential to uphold and enforce relevant legal principles as blockchain technology evolves. The Electronic Contract Supervision and Protection Agency (BPPKE) is a concept designed to supervise, protect, and guarantee the rights of legal subjects to make agreements based on electronic media such as smart contracts. The establishment of BPPKE aims to prevent losses suffered by individuals in contracts. This urgency involves consumer rights protection in the context of automatic transactions, effective dispute resolution, comprehensive legal framework implementation, and the establishment of security and privacy standards. Furthermore, BPPKE plays a crucial role in fostering business confidence, overseeing technology usage compliance with the law, and stimulating the growth of the blockchain ecosystem in Indonesia through supportive policy development and sustainability.

⁶ Angelia Cristine Jiantoro, 'Mengenai Smart Contract Dalam Blockchain – School of Information Systems', accessed 30 January 2024, <https://sis.binus.ac.id/2023/05/02/mengenai-smart-contract-dalam-blockchain/>.

⁷ Gladyssha Indahcantika Mazalio, 'Problematika Penerapan Smart Contract Terhadap Peran Dan Fungsi Notaris Di Indonesia' 2, no. 3 (2023).

The emergence of electronic contract innovation poses one of the challenges of technology law globally, including in Indonesia. The legal regulation in Indonesia related to this technology is still implicit and scattered across different laws, and it is still not explicitly written regarding the prohibitions contained in electronic contracts, thus creating confusion and ambiguity regarding the emergence of this new innovation. Although Article 1 (8) created by the United Nations, or commonly known as the UN, has been created, this does not mean it serves as a legal reference because it violates constitutional rules if used as legal reference because the legitimate legal reference in the Indonesian legal hierarchy is the law, which is the highest legal hierarchy in regulating legal practices in Indonesia. In addition to the confusion in its regulation, electronic contracts pose a complicated problem because they have many positive and negative impacts that are equally balanced, thus requiring legal protection in addition to laws that can protect Indonesian society regarding this technology. One other legal protection tool besides the law is the existence of an institution that can protect society from the problems that exist in society today. Regarding this protection institution, before taking further steps, it is advisable for the author to provide one example of a comparison related to a special legal protection institution that has been created by other countries so that it can provide a safe space regarding the current electronic contract issues in Indonesia. One country that has created and implemented an electronic contract supervision and protection institution is the United States with the name Federal Trade Commission (Putri, 2020).

The Federal Trade Commission (FTC) is an Electronic Contract Supervision and Protection institution in the United States established in 1914, which has been enacted and is in the process of protecting the rights of the people in the United States with the legal regulations listed in the United States Law. The purpose of this supervision and protection institution is in line with the legal goals of the United States, which create an independent institution in electronic contracts and online business practices that minimize risks and protect human rights if these electronic contracts are along with their lives. The functions and authorities of this institution are to protect consumers and promote business competition. Article 12 of the Federal Trade Commission Act, which regulates electronic contracts, states that electronic contract providers must ensure clear and understandable electronic agreements. This article also limits the use of electronic contracts that do not meet these criteria, and if violated, the provider can be sanctioned by the FTC.⁸

In addition to the FTC, another international institution that operates in the same realm is the United Nations Commission on International Trade Law (UNCITRAL), which increasingly provides guidelines for countries in regulating electronic contracts not yet possessed by Indonesia, such as punishment for violators of rights within electronic contracts. In the same case, there is also the European Commission (EC), which has clearer regulations regarding consumer protection in electronic contracts in Europe. Seeing the existence of these supervisory institutions, it is deemed necessary for Indonesia to also create one form of electronic contract supervision institution that can be used as one legal protection for

⁸ Wahyu Suwena Putri, 'Keabsahan Kontrak Elektronik Dalam Transaksi E-Commerce Ditinjau Dari Hukum Perikatan', *Jurnal Analisis Hukum* 1, No. 2 (30 September 2020): 300, <https://doi.org/10.38043/Jah.V1i2.417>.

Indonesian society.⁹ Considering the existence of the supervisory institution owned by the United States, it is deemed necessary for Indonesia to also establish a monitoring tool regarding electronic contracts that can be used as one of the legal protections for Indonesian society.¹⁰

Meanwhile, the role of the electronic contract supervision and protection agency in Indonesia involves providing mediation forums for disputes in electronic contract violations, reporting to authorities if mediation does not resolve electronic contract violations, acting as a knowledge center in electronic contracts, acting as a monitoring and reporting agency for electronic contract violations in Indonesia, responsibilities for agencies and companies developing in the field of electronic contracts, as well as duties as an institution responsible for designing workflow related to reporting and supervision systems in the field of electronic contracts.

3.2. The Concept of Electronic Contract Supervisory and Protection Agency (BPPKE) to Realize Business Legal Protection in Indonesia

In an effort to provide recommendations regarding the establishment of supervisory and protection institutions, the author also provides recommendations regarding the organizational structure of these institutions. This is because it is generally known that every organization, whether in the government or non-governmental sector, should have a clear and orderly organizational structure to reflect its independent nature. Additionally, such institutions, which are not national regulatory bodies, need to undergo effective decentralization and synchronization with other collaborating bodies. The Electronic Contract Supervision Body created by the author is an independent body that synergizes with the Ministry of Trade and the Ministry of Law and Human Rights, with gradual interactions ranging from notification, supervision such as through inspection or examination, then consultation on electronic contract issues, cooperation, regulation completion to complement electronic contract regulations in Indonesia, accreditation in internship programs, public supervision, development, and management. This body is regulated within the draft electronic contract law, where the scope of this body is broad but still related to electronic contracts as the object of supervision and protection within this body.

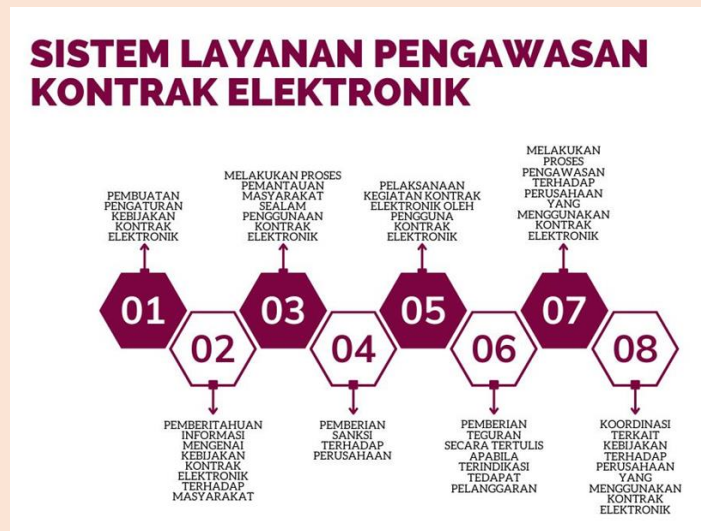
The roles and responsibilities of this institution include providing an arbitration forum for disputes related to electronic contract violations, reporting to authorities if violations of legal regulations related to electronic contracts are not resolved in arbitration, serving as a knowledge center on electronic contracts, acting as a monitoring institution for electronic contract violations in Indonesia, and being responsible for agencies or companies using electronic contracts, as well as being responsible for establishing workflows related to reporting and monitoring systems in electronic contracts.

The integrated service system of the Electronic Contract Supervision and Protection Body in Indonesia recommended by the author aims to maximize the existence of this body,

⁹ M Irfaan Dzakiy, 'Pemanfaatan Smart Contract dalam Blockchain untuk Mengoptimasi E-Commerce', n.d.

¹⁰ Ditiya Salsabila and Budi Ispriyarso, 'Efektivitas Keabsahan Kontrak Elektronik Berdasarkan Hukum Positif di Indonesia', *AL-MANHAJ: Jurnal Hukum dan Pranata Sosial Islam* 5, no. 2 (9 August 2023): 1343–54, <https://doi.org/10.37680/almanhaj.v5i2.3085>.

thus minimizing any ambiguity or misunderstanding for the public who will eventually use electronic contracts, especially the general public. The integrated service system of the supervisory and protection body is one of the innovations presented by the author in this paper by creating a service monitoring and protection system in the form of a flowchart that the government can develop to mitigate the negative impacts of these electronic contracts. One of the processes of the integrated service system along with the complaint stages presented by the author is:



Picture 1. Flowchart of Electronic Contract Supervision Service System



Picture 2. Flowchart of Electronic Contract Protection and Advocacy Service System

3.3. Ius Constituendum Legal Protection of Business in Indonesia

Indonesia has yet to have specific legislation explicitly governing comprehensive legal protection for businesses. Furthermore, the digital technology advancements in Indonesia have significantly impacted the business world, especially in the use of electronic contracts as an integral part of modern business processes. Legal protection for businesses in Indonesia is mainly regulated through a series of sectoral laws and regulations covering various business

aspects such as corporate law, trade, contracts, competition law, and more. Thus far, efforts by the government and related institutions to enhance legal protection for business entities in Indonesia have involved revising and refining existing regulations to improve legal certainty and strengthen protection for business entities. For example, laws such as Law Number 40 of 2007 concerning Limited Liability Companies, Law Number 8 of 1999 concerning Consumer Protection, Law Number 7 of 2014 concerning Trade, and other laws within the domain of civil and commercial law are relevant to the regulation of legal protection for businesses in Indonesia.¹¹

Proposals regarding the content and scope of the Business Legal Protection Law, encompassing Main Provisions and Protections incorporated in this Law, include:

1. Intellectual Property Rights (IPR) Protection

Strengthening protection for copyrights, patents, trademarks, and other intellectual property rights to encourage innovation and technological development in the business sector, as well as regulating mechanisms for protection against infringement and misuse of intellectual property rights.

2. Contract Protection

This section may also contain rules on the formation, execution, and resolution of business contracts to ensure fairness, legal certainty, and enforcement of valid and effective contracts, as well as mechanisms for effective and fair dispute resolution.

3. Investment Protection

Guaranteeing investment security and protection of investor rights, such as ownership rights, the right to profit, and the right to arbitration in investment dispute resolution, as well as promoting domestic and foreign investment by providing legal certainty and adequate protection.

4. Competition Law Protection

Proposals in this section may include provisions to prevent monopolistic practices, cartels, and other unfair business practices to maintain healthy competition and provide fair opportunities for all business players, as well as mechanisms for supervision and law enforcement against practices detrimental to competition.

5. Protection Against Business Disputes

Addressing the establishment of an efficient legal system for business dispute resolution, whether through judicial avenues or alternatives such as mediation and arbitration, to ensure legal certainty and reduce costs and time associated with business dispute resolution.

6. Electronic Contract Protection

Regulations concerning the validity, security, and resolution of disputes related to electronic contracts and the establishment of a Supervisory and Protection Body for Electronic Contracts (BPPKE) with the authority to oversee, enforce regulations, and protect the rights of business players in the use of electronic contracts.

7. Additional Provisions

¹¹ Kamaluddin Kamaluddin, 'Perlindungan Hukum dalam Kontrak Elektronik pada e-Commerce', *Jurnal Cakrawala Informasi* 2, no. 1 (30 June 2022): 29–45, <https://doi.org/10.54066/jci.v2i1.160>.

This section may include other relevant provisions supporting business legal protection, such as regulations related to companies, trade, and taxation, as well as providing a flexible framework for adaptation to evolving technology and business needs.

By delineating the main provisions and necessary protections, the proposed Business Legal Protection Law will become more feasible and effective in providing an adequate legal framework for business activities in Indonesia. This will enhance business players' confidence, boost investment, and create a stable and competitive business environment in the digital era.

However, along with the advancement of digital technology in Indonesia, new challenges and risks emerge that need to be seriously addressed. These challenges include the authenticity of electronic documents, data security, and dispute resolution related to electronic contracts.¹² In this context, it is insufficient if regulations related to business legal protection in Indonesia only exist in a series of laws and regulations and within the domains of civil law and commercial law. The lack of a comprehensive law specifically regulating business legal protection in Indonesia underscores the need to ensure that legal protection for business players is included within a regulatory framework that plays a role in providing adequate legal framework for business activities in Indonesia, updated and adapted to new technological developments. The scope to be covered in the Business Legal Protection Law in Indonesia may include Intellectual Property Rights (IPR) Protection, Contract Protection, Investment Protection, Consumer Protection, Competition Law Protection, and Protection Against Business Disputes.¹³

The reasons for including the scope of Intellectual Property Rights (IPR) Protection, Contract Protection, Investment Protection, Consumer Protection, Competition Law Protection, and Protection Against Business Disputes in the Indonesian Business Legal Protection Law are as follows:

Firstly, concerning Intellectual Property Rights (IPR) Protection, legislation strengthening protection for copyrights, patents, trademarks, and other intellectual property rights is crucial to encourage innovation and technological development in the business sector. Secondly, Contract Protection, where legislation governing the formation, execution, and resolution of business contracts can help ensure fairness and legal certainty in business relationships between parties involved. Thirdly, Investment Protection, where legal protection for investors, both in terms of investment security and protection of investor rights, such as ownership rights, the right to profit, and the right to arbitration in investment dispute resolution. Fourthly, Consumer Protection, where legislation protecting consumers from harmful business practices, including product quality guarantees, accurate and clear information, and effective consumer dispute resolution mechanisms. Fifthly, Competition Law Protection, where regulations preventing monopolistic practices, cartels, and other unfair business practices to maintain healthy competition and provide fair opportunities for all business players. Sixthly, Protection Against Business Disputes, where establishing an efficient

¹² Suwari Akhmaddhian Dan Asri Agustiwi, 'Perlindungan Hukum Terhadap Konsumen Dalam Transaksi Jual Beli Secara Elektronik Di Indonesia', *Unifikasi : Jurnal Ilmu Hukum* 3, no. 2 (5 July 2016), <https://doi.org/10.25134/unifikasi.v3i2.409>.

¹³ Djefry Welly Lumintang and Renny Nansy S Koloay, 'Tinjauan Yuridis Kedudukan Kontrak Elektronik Dalam Proses Jual Beli Online Berdasarkan Peraturan Hukum Di Indonesia' 13, no. 01 (2024).

legal system for business dispute resolution, whether through judicial avenues or alternatives such as mediation and arbitration, can help minimize uncertainty and costs associated with business disputes. The proposal to establish the Electronic Contract Supervision and Protection Body (BPPKE) is essential to address challenges related to electronic contracts.¹⁴

4. Conclusions

The conceptualization of establishing the Electronic Contract Supervisory and Protection Agency (BPPKE) is a strategic step towards realizing legal protection for businesses in Indonesia, especially in the context of electronic transactions. With the existence of BPPKE, it is hoped that an institution specifically responsible for overseeing and protecting electronic contracts will be created, thereby enhancing the trust of business actors in conducting electronic transactions. This body is expected to formulate clear and comprehensive regulations related to electronic contracts, protect the interests of parties involved in such transactions, and provide effective law enforcement in resolving disputes that may arise. Additionally, BPPKE is expected to provide consultation and legal assistance services for business actors related to electronic contracts, enabling them to operate with greater confidence and efficiency in the digital business environment. Therefore, the conceptualization of establishing BPPKE is expected to improve the investment and business climate in Indonesia, as well as strengthen legal protection for business actors, both nationally and internationally. This is in line with the rapid development of information and communication technology, where electronic transactions are becoming increasingly dominant in global business activities.

5. Acknowledgments

The author expresses gratitude to the Faculty of Law at Jember University for enabling the completion of the article titled "Conceptualizing the Establishment of BPPKE: Legal Protection for Businesses in Indonesia."

6. Reference

- Antonopoulos. 'Smart Contracts: Bridging the Gap Between Expectation and Reality | Oxford Law Blogs'. Accessed 30 January 2024. <https://blogs.law.ox.ac.uk/business-law-blog/blog/2016/07/smart-contracts-bridging-gap-between-expectation-and-reality>.
- Asri Agustiwati, Suwari Akhmaddhian Dan. 'Perlindungan Hukum Terhadap Konsumen Dalam Transaksi Jual Beli Secara Elektronik Di Indonesia'. *Unifikasi : Jurnal Ilmu Hukum* 3, no. 2 (5 July 2016). <https://doi.org/10.25134/unifikasi.v3i2.409>.
- Benuf, Kornelius, Siti Mahmudah, and Ery Agus Priyono. 'Perlindungan Hukum Terhadap Keamanan Data Konsumen Financial Technology Di Indonesia'. *Refleksi Hukum: Jurnal Ilmu Hukum* 3, no. 2 (7 August 2019): 145-60. <https://doi.org/10.24246/jrh.2019.v3.i2.p145-160>.
- Dzakiy, M Irfaan. 'Pemanfaatan Smart Contract dalam Blockchain untuk Mengoptimasi E-Commerce', n.d.
- Hacker, Philipp, Ioannis Lianos, Georgios Dimitropoulos, and Stefan Eich. 'Regulating Blockchain: Techno-Social and Legal Challenges – An Introduction'. In *Regulating Blockchain*, by Philipp Hacker, Ioannis Lianos, Georgios Dimitropoulos, and Stefan Eich, 1-24. Oxford University Press, 2019. <https://doi.org/10.1093/oso/9780198842187.003.0001>.

¹⁴ Hidayah, 'Asas Iktikad Baik Dalam Kontrak Elektronik'.

- Hidayah, Ardiana. 'Asas Iktikad Baik Dalam Kontrak Elektronik'. *Solusi* 19, no. 2 (1 May 2021): 155-64. <https://doi.org/10.36546/solusi.v19i2.361>.
- Jiantoro, Angelia Cristine. 'Mengenal Smart Contract Dalam Blockchain - School of Information Systems'. Accessed 30 January 2024. <https://sis.binus.ac.id/2023/05/02/mengenal-smart-contract-dalam-blockchain/>.
- Kamaluddin, Kamaluddin. 'Perlindungan Hukum dalam Kontrak Elektronik pada e-Commerce'. *Jurnal Cakrawala Informasi* 2, no. 1 (30 June 2022): 29-45. <https://doi.org/10.54066/jci.v2i1.160>.
- Lumintang, Djefry Welly, and Renny Nansy S Koloay. 'Tinjauan Yuridis Kedudukan Kontrak Elektronik Dalam Proses Jual Beli Online Berdasarkan Peraturan Hukum Di Indonesia' 13, no. 01 (2024).
- Mazalio, Gladysa Indahcantika. 'Problematisasi Penerapan Smart Contract Terhadap Peran Dan Fungsi Notaris Di Indonesia' 2, no. 3 (2023).
- Ong, Jason Pratama. 'Electronic Contracts in the Digital Age: Foundations and Challenges' (Mik, 2019): - Penelusuran Google'. Accessed 30 January 2024. [https://www.google.com/search?q=Electronic+Contracts+in+the+Digital+Age%3A+Foundations+and+Challenges%22+\(Mik%2C+2019\)%3A&sourceid=chrome&ie=UTF-8#vhid=zephyrhttps://journal.prasetiyamulya.ac.id/journal/index.php/TLJ/article/download/519/355/&vssid=collectionitem-web-desktophttps://journal.prasetiyamulya.ac.id/journal/index.php/TLJ/article/download/519/355/&ip=1](https://www.google.com/search?q=Electronic+Contracts+in+the+Digital+Age%3A+Foundations+and+Challenges%22+(Mik%2C+2019)%3A&sourceid=chrome&ie=UTF-8#vhid=zephyrhttps://journal.prasetiyamulya.ac.id/journal/index.php/TLJ/article/download/519/355/&vssid=collectionitem-web-desktophttps://journal.prasetiyamulya.ac.id/journal/index.php/TLJ/article/download/519/355/&ip=1).
- Parmitasari, Indah. 'Eksistensi Smart Contract Menurut Hukum Kontrak Di Indonesia', 2021.
- Putri, Wahyu Suwena. 'Keabsahan Kontrak Elektronik Dalam Transaksi E-Commerce Ditinjau Dari Hukum Perikatan'. *Jurnal Analisis Hukum* 1, no. 2 (30 September 2020): 300. <https://doi.org/10.38043/jah.v1i2.417>.
- Salsabila, Ditiya, and Budi Ispriyarso. 'Efektivitas Keabsahan Kontrak Elektronik Berdasarkan Hukum Positif di Indonesia'. *AL-MANHAJ: Jurnal Hukum dan Pranata Sosial Islam* 5, no. 2 (9 August 2023): 1343-54. <https://doi.org/10.37680/almanhaj.v5i2.3085>.