

Halal Consumer Protection in The Digital Era: Blockchain Certificates as Legal Evidence

Nurul Islami^{1*}, Zulfiqar Bhisma Putra Rozi²

¹²Faculty of Law, Universitas Brawijaya, Malang
nuruulislami@ub.ac.id; zulfiqarbpr@ub.ac.id

*Corresponding author

Article info

Received: 25 Mar 2026

Revised: 8 Apr 2026

Accepted: 11 Apr 2026

DOI: <https://doi.org/10.31599/krtha.v20i1.5323>

Abstract : *The rapid development of e-commerce has accelerated the circulation of products claiming halal certification. It has also shifted halal product distribution patterns to the digital realm. This shift raises issues related to verification and protection of consumer rights. Blockchain-based electronic evidence in the context of halal certification has become a fundamental issue for muslim consumer protection in the digital era. There are incomplete regulations governing the status and mechanisms for verifying blockchain evidence. These gaps pose challenges in providing evidence in court and create legal uncertainty for consumers. This study aims to analyze the validity of blockchain-based halal certificates as a legal evidentiary tool in consumer protection disputes. The goal is to strengthen muslim consumer protection in Indonesia. This study is a normative legal study using statutory and conceptual approach. The legal materials were obtained from primary and secondary sources by examining the Halal Product Guarantee Law, the Consumer Protection Law, and regulations related to electronic information. The analysis was conducted through systematic interpretation and literature review. The research results show that blockchain-based halal certificates have potential probative validity due to their transparency and decentralization. This can increase the transparency and authenticity of halal products. However, in practice, there are still no technical guidelines regarding the blockchain-based halal certificate verification mechanism. Therefore, comprehensive special regulations are needed from the government, particularly technical guidelines for blockchain-based halal certification, to ensure consumer protection in the digital era. their transparent and decentralized nature, which can enhance the transparency and authenticity of halal products.*

Keywords : *Blockchain; Consumer Protection; Digital Halal Certification*

Abstrak : Perkembangan pesat e-commerce mempercepat peredaran produk yang mengklaim kehalalan dan menggeser pola distribusi produk halal ke ranah digital yang sekaligus menimbulkan masalah terkait verifikasi dan perlindungan hak konsumen. Bukti elektronik berbasis blockchain dalam konteks sertifikasi halal menjadi persoalan mendasar bagi perlindungan konsumen muslim di era digital. Ketiadakhadiran pengaturan yang mengatur tentang status dan mekanisme dalam



verifikasi bukti blockchain menimbulkan tantangan dan mengakibatkan ketidakpastian hukum bagi konsumen. Penelitian ini bertujuan untuk menganalisis validitas hukum sertifikat halal berbasis teknologi blockchain sebagai alat pembuktian hukum dalam sengketa perlindungan konsumen guna memperkuat perlindungan konsumen muslim di Indonesia. Penelitian ini merupakan penelitian hukum normatif dengan pendekatan perundang-undangan dan pendekatan konseptual. Bahan hukum yang digunakan diperoleh dari bahan hukum primer dan bahan hukum sekunder dengan menelaah UU Jaminan Produk Halal, UU Perlindungan Konsumen, dan peraturan terkait informasi elektronik yang dianalisis dengan interpretasi sistematis melalui studi pustaka. Hasil penelitian menunjukkan bahwa sertifikat halal berbasis blockchain memiliki validitas kekuatan pembuktian yang potensial karena sifatnya yang transparan dan terdesentralisasi sehingga dapat meningkatkan transparansi dan keaslian produk halal. Namun dalam penerapannya masih belum terdapatnya pedoman pedoman teknis mengenai mekanisme verifikasi sertifikat halal berbasis blockchain. Oleh karena itu, diperlukan regulasi khusus yang komprehensif dari pemerintah terkait pedoman teknis sertifikasi halal berbasis blockchain guna memastikan perlindungan konsumen di era digital.

Kata kunci : Blockchain; Perlindungan Konsumen; Sertifikasi Halal Digital

Introduction

The digital era has brought fundamental changes to shopping preferences and behavior, driving widespread migration to e-commerce platforms. Convenience, broad product accessibility, and competitive prices are the main attractions of these platforms.¹ Consumers and producers benefit from e-commerce in product marketing, which reduces costs and saves time.² The rapid development of information and communication technology has changed the global economic landscape, including the trade and consumption sectors, by facilitating electronic transactions.³

Through online platforms, consumers can now easily search for information on a product's halal status, access certificates, and even receive notifications about changes in certification status.⁴ The growing demand for halal products underscores the importance of transparent, accountable, and easily accessible

¹ Ni Luh Kadek Dwi Fenny Febriyanti, I. Nyoman Putu Budiarta, and Ni Made Spasutari Ujianti, "Penegakan Hukum Dalam Penyelesaian Sengketa Transaksi Electronic Commerce," *Jurnal Interpretasi Hukum* 1, no. 1 (August 2020): 173–78, <https://doi.org/10.22225/juinhum.1.1.2206.173-178>.

² Shejn Ghalib Jawad and Abbas Hazim Mohammed, "Cost Reduction and Efficiency Boost Through E-Commerce Strategies," *Indonesian Journal of Law and Economics Review* 19, no. 3 (August 2024), <https://doi.org/10.21070/ijler.v19i3.1154>.

³ Ulfa Afrianti, Mochammad Isa Anshori, and Nurita Andriani, "Digitalisasi Marketing Melalui Instagram Dan Facebook Ads Dalam Meningkatkan Skala Usaha Umkm: Systematic Literature Review," *Jurnal Masharif Al-Syariah: Jurnal Ekonomi Dan Perbankan Syariah* 9, no. 1 (2024): 187–98, <https://doi.org/10.30651/jms.v9i1.21058>.

⁴ Abderahman Rejeb et al., "Integrating the Internet of Things in the Halal Food Supply Chain: A Systematic Literature Review and Research Agenda," *Internet of Things* 13 (March 2021): 100361, <https://doi.org/10.1016/j.iot.2021.100361>.

halal certification for consumers. Digital technology plays a strategic role in strengthening the halal certification system by increasing transparency and efficiency, and by speeding up access to information.

Demand for halal products has grown significantly in recent decades. This growth is driven by a global shift in consumer awareness of food and product quality and ethics.⁵ The increasing awareness of muslim consumers in Indonesia towards halal products has encouraged serious attention to ensuring the authenticity and integrity of halal certification, especially amidst the complexity of the global supply chain and the digital era.⁶ The issue of halal products is also increasingly relevant in online transactions, where many products are circulating without clear halal labels, thus creating challenges in guaranteeing the rights of muslim consumers.⁷ The need for solutions that provide greater transparency and traceability in the halal certification process is becoming increasingly crucial, as consumer concerns about the authenticity of halal products are rising amid the circulation of non-halal food and beverage products on the market.⁸

Amidst the ease of digital transactions, new challenges have emerged regarding consumer protection, especially in the context of halal products, where unclear information can be detrimental to muslim consumers seeking assurance of product halalness.⁹ This digital transformation presents a new challenge: how to guarantee the authenticity, integrity, and legal validity of these digital halal certificates.¹⁰ With the rapid growth of *e-commerce*, the distribution of halal products is now largely digital, particularly in Indonesia, creating challenges in verifying product authenticity and protecting consumer rights.¹¹ Legitimate halal certification is very important in this context, especially in Indonesia, which is the country with the largest muslim

⁵ Stephen Wilkins et al., "The Acceptance of Halal Food in Non-Muslim Countries: Effects of Religious Identity, National Identification, Consumer Ethnocentrism and Consumer Cosmopolitanism," *Journal of Islamic Marketing* 10, no. 4 (November 2019): 1308–31, <https://doi.org/10.1108/JIMA-11-2017-0132>.

⁶ Kn. Sofyan Hasan and Taroman Pasyah, "Challenges of Indonesian Halal Industry in the Digital Economic Era," *Sriwijaya Law Review*, July 31, 2022, 319–35, <https://doi.org/10.28946/slrev.Vol6.Iss2.869.pp319-335>.

⁷ Fadzlurrahman and Susilowati Suparto, *Tinjauan Yuridis Perlindungan Konsumen Muslim Dalam Mendapatkan Jaminan Produk Halal Terhadap Pembelian Secara Online*, June 27, 2019, <https://doi.org/10.5281/ZENODO.3258658>.

⁸ Yuli Yana Fitri, Muhammad Iqbal Fasa, and Suharto Suharto, "Pengaruh Kepuasan Konsumen Terhadap Laju Perkembangan Industri Produk Makanan Dan Minuman Halal Indonesia," *Jurnal Bina Bangsa Ekonomika* 15, no. 1 (February 2022): 122–29, <https://doi.org/10.46306/jbbe.v15i1.128>.

⁹ Irsan Rahman et al., "Hukum Perlindungan Konsumen Di Era E-Commerce: Menavigasi Tantangan Perlindungan Konsumen Dalam Lingkungan Perdagangan Digital," *Jurnal Hukum Dan HAM Wara Sains* 2, no. 08 (August 2023): 683–91, <https://doi.org/10.58812/jhhws.v2i08.605>.

¹⁰ Arlinta Prasetyan Dewi and Mohammad Ichsan Hakiki, "Transformasi Digital Dalam Industri Halal Di Indonesia (Studi Implementasi Teknologi Blockchain Dalam Proses Sertifikasi Halal)," *Indo-Fintech Intellectuals: Journal of Economics and Business* 3, no. 2 (September 2023): 360–70, <https://doi.org/10.54373/ifijeb.v3i2.240>.

¹¹ Budi Harsanto et al., "Digital Technology 4.0 on Halal Supply Chain: A Systematic Review," *Logistics* 8, no. 1 (February 2024): 21, <https://doi.org/10.3390/logistics8010021>.

population in the world. Halal certification provides protection, assurance, and legal certainty for muslim consumers, as well as increasing product trust and competitiveness in both domestic and global markets.¹²

This shift creates both new opportunities and risks, particularly regarding the verification of halal certificate authenticity. In a climate where muslim consumers rely heavily on halal labels as a means of trust, the presence of fake halal certificates or data manipulation poses serious consumer protection challenges.¹³ Challenges in halal certification encompass technical, social, cultural, and economic aspects.¹⁴ According to data from the Halal Product Guarantee Organizing Agency (BPJPH) in 2025, BPJPH halal certification has reached 9.6 million halal-certified products, out of 2.79 million halal certificates issued.¹⁵ However, as the number of products circulating in the digital marketplace grows, the challenges of verifying and protecting consumer rights are becoming more complex. The lack of clear regulations regarding the verification mechanism for blockchain-based halal certification has created problems for several parties.

The shift in transactions from conventional to digital space has created a need for a new form of evidence, namely electronic evidence. This is in accordance with Article 5 Paragraphs (1) and (2) of Law Number 11 of 2008, as amended by Law Number 19 of 2016, as amended by Law Number 1 of 2024 concerning Electronic Information and Transactions (ITE Law), which states and recognizes that electronic information and/or electronic documents are valid legal evidence.

Blockchain, as a technology that offers transparency and security in data storage, is a potential solution to this problem. Due to its decentralized nature, blockchain can store halal certification information permanently and immutably, thereby increasing consumer confidence in product authenticity.¹⁶ Blockchain-based digital halal certificates offer strong evidentiary potential due to their transparency and decentralized nature, but legal barriers remain to their recognition in court. Therefore, specific government regulations, particularly technical guidelines for blockchain-based halal certification, are

¹² A. Alfira Yuningsih M, Riska Erfiana Putri, and Hasse Jubba, "Implikasi Sertifikasi Halal Terhadap Perkembangan Industri Halal Di Indonesia," *Al-Tijary* 8, no. 2 (June 2023): 155–69, <https://doi.org/10.21093/at.v8i2.7652>.

¹³ Ratna Sofiana, Satria Utama, and Abdur Rohim, "The Problems of Halal Certification Regarding Consumer Protection in Malaysia and Indonesia," *Journal of Human Rights, Culture and Legal System* 1, no. 3 (November 2021), <https://doi.org/10.53955/jhcls.v1i3.16>.

¹⁴ Muhammad Nusran et al., "Halal Certification in The Digital Age: Leveraging Online Platforms for Enhanced Transparency and Accessibility," *Jurnal Ekonomi, Akuntansi Dan Manajemen Indonesia* 2, no. 01 (December 2023): 105–15, <https://doi.org/10.58471/jeami.v2i01.379>.

¹⁵ "Jelang Wajib Halal Oktober 2026, BPJPH Berikan Sertifikat Halal Gratis Untuk Warteg Dan Sejenisnya | Badan Penyelenggara Jaminan Produk Halal," accessed October 8, 2025, <https://bpjph.halal.go.id/detail/jelang-wajib-halal-oktober-2026-bpjph-berikan-sertifikat-halal-gratis-untuk-warteg-dan-sejenisnya>.

¹⁶ Dewi and Hakiki, "Transformasi Digital Dalam Industri Halal Di Indonesia (Studi Implementasi Teknologi Blockchain Dalam Proses Sertifikasi Halal)," September 2023.

needed to ensure consumer rights are adequately protected in the digital era.¹⁷ The implementation of blockchain-based halal certification in Indonesia still faces various legal obstacles that must be overcome for it to function as valid evidence in court.

Therefore, this research aims to examine and analyze several problems, including: 1) How is the concept of Muslim consumer protection in the digital era related to the circulation of halal products, and 2) How is the validity of blockchain-based halal certificates as legal evidence in resolving Muslim consumer protection disputes in Indonesia. Therefore, it is hoped that this research can provide concrete recommendations to overcome these challenges and encourage collaboration among the government, certification bodies, and industry players to create a more effective system and legal protection for consumers in digital-based halal certification.

Methods

This study is a normative legal study using statutory and conceptual approaches. The regulatory approach involves examining all laws and regulations related to the legal issue. Meanwhile, the conceptual approach is grounded in the views and doctrines that have developed within legal science.¹⁸ In terms of the legislative approach in this research, it was carried out by reviewing all laws and regulations related to the research, including Law Number 33 of 2014 concerning Halal Product Guarantee, Law Number 8 of 1999 concerning Consumer Protection, Law Number 11 of 2008 concerning Information and Electronic Transactions as amended by Law No. 19 of 2016 and Law No. 1 of 2024, DSN-MUI fatwas, and decisions related to this research.

This research specifically examines laws and regulations, fatwas, and standards related to halal certification, as well as the potential for adopting blockchain technology as a valid legal evidence tool. The legal materials were obtained from primary and secondary sources by examining the Halal Product Guarantee Law, the Consumer Protection Law, and regulations related to electronic information. Secondary legal materials: literature, legal journals, and relevant academic articles. Tertiary legal materials: legal dictionaries and encyclopedias of Islamic law. The analysis was conducted through systematic interpretation and literature review. The analysis was conducted through a systematic interpretation that connected relevant regulations and articles,

¹⁷ Etikah Karyani et al., "Intention to Adopt a Blockchain-Based Halal Certification: Indonesia Consumers and Regulatory Perspective," *Journal of Islamic Marketing* 15, no. 7 (June 2024): 1766–82, <https://doi.org/10.1108/JIMA-03-2023-0069>.

¹⁸ Peter Mahmud Marzuki, *Penelitian Hukum: Edisi Revisi*, 13th ed. (Jakarta: Kencana, 2017), https://books.google.co.id/books?id=CKZADwAAQBAJ&printsec=frontcover&hl=id&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false.

including the article on electronic evidence in the ITE Law, to the article on certification in the Halal Product Guarantee Law.

Result And Discussion

The Concept Of Muslim Consumer Protection In The Digital Era Related To The Circulation Of Halal Products

Consumer protection fundamentally aims to balance rights and obligations between business actors and consumers, ensuring that consumers receive security, safety, and accurate information when consuming goods or services.¹⁹ The Consumer Protection Law, Law Number 8 of 1999, states that consumer protection is any effort that ensures legal certainty and protects consumers. Consumer protection has a broad scope, namely protecting consumers against the possibility that goods delivered to consumers do not match what was agreed and against the imposition of unfair conditions on consumers.²⁰

Consumer protection fundamentally refers to efforts to protect consumer rights from unfair or detrimental business practices, including electronic transactions, which often involve standard clauses that unilaterally benefit sellers.²¹ In Indonesia, consumer protection has become important amid the rapid growth of the digital economy, which opens up new opportunities as well as complexities in protecting consumer rights.²² The government has responded to this phenomenon by implementing Law Number 8 of 1999 concerning Consumer Protection. For muslim consumers, when consuming a product, it must be halal, good, and safe. Not only is there the importance of consumer protection, but also the importance of producers in protecting consumer interests in accordance with provisions derived from the teachings of the religion they adhere to, without ignoring applicable state laws and regulations.²³

Indonesia, as a country with a majority muslim population, has a strong legal basis for guaranteeing halal products, one of which is through Law Number 33 of 2014 concerning Halal Product Guarantee as amended by Law Number 6 of 2023 concerning the Stipulation of Government Regulation instead of Law Number 2 of 2022 concerning Job Creation into Law aimed at providing legal certainty and protection for muslim consumers. This regulation also aims to

¹⁹ Ilham Abdi Prawira, "Legal Protection for Consumers Through Halal Certification Mandate of Law Number 33 of 2014 Concerning Guarantees for Halal Products," *Media Syari'ah: Wahana Kajian Hukum Islam Dan Pranata Sosial* 24, no. 2 (December 2022): 207, <https://doi.org/10.22373/jms.v24i2.11477>.

²⁰ Rosmawati, *Pokok-Pokok Hukum Perindungan Konsumen*, 1 (Kencana, 2018).

²¹ Serlita Okky Vera, "Perlindungan Hak Konsumen Dalam Transaksi Elektronik via Shopee," *Badamai Law Journal* 6, no. 2 (December 2021): 338, <https://doi.org/10.32801/damai.v6i2.11811>.

²² Rahman et al., "Hukum Perlindungan Konsumen Di Era E-Commerce."

²³ Rosmawati, *Pokok-Pokok Hukum Perindungan Konsumen*.

eliminate muslim consumers' doubts about the halal status of products, which is often a major consideration in purchasing decisions.²⁴ In addition, the law also underlines the obligation of business actors to include halal labels on food products as a form of legal protection for muslim consumers.²⁵ Therefore, all products must be halal-certified starting October 17, 2019, as mandated by the Halal Product Guarantee Law, with uncertified food and beverage products at risk of being withdrawn from circulation.²⁶

However, this regulation has not been fully enforced due to a lack of support for easy and affordable halal certification, coupled with low public awareness.²⁷ Law enforcement related to halal certification in Indonesia aims to ensure that all products distributed and traded meet Islamic sharia standards, to assure muslim consumers, and to increase the added value of UMKM products in a competitive market.²⁸ Article 4 of the Halal Product Guarantee Law states that "Products entering, circulating, and traded in Indonesian territory must be halal certified." The importance of halal certification is reinforced by Article 4 of the Halal Product Guarantee Law, which requires that all products entering, circulating, and traded in Indonesian territory be halal-certified. This is in line with Article 8, Paragraph (1), Letter (h) of Law Number 8 of 1999 concerning Consumer Protection, which prohibits business actors from producing and trading goods or services that do not comply with halal production requirements, especially if halal claims are included on the product label.

In relation to this, Islamic law requires us to consume food and drinks that are halal and good (*thayyib*), as stated in the Qur'an, Surah Al-Baqarah, verse 168: "Oh humanity, eat from whatever is on earth [that is] lawful and good and do not follow the footsteps of Satan. Indeed, he is to you a clear enemy."

Based on the explanation in the Qur'an, Allah tells Muslims not to eat and drink excessively, and the food and drink must be halal and good (*halalan tayyiban*).²⁹ Article 3 of the Halal Product Guarantee Law states that the purpose of implementing halal products is to provide comfort, safety, security,

²⁴ Sri Wahyuni, Daharmi Astuti, and Boy Syamsul Bakhri, "Pengaruh Label Halal Terhadap Peningkatan Omset Penjualan Produk Makanan Ringan Umkm Di Kota Dumai," *Jurnal Bilal: Bisnis Ekonomi Halal* 1, no. 2 (March 2021): 43–47, <https://doi.org/10.51510/bilal.v1i2.205>.

²⁵ Eny Sulistyowati, Nurul Hikmah, and Isye Junita Melo, "Obligations of Business Actors to Publish Halal Labels in Food as a Form of Legal Protection for Muslim Consumers," paper presented at Proceedings of the 1st International Conference on Social Sciences (ICSS 2018), Bali, Indonesia, *Proceedings of the 1st International Conference on Social Sciences (ICSS 2018)*, 2018, <https://doi.org/10.2991/icss-18.2018.23>.

²⁶ EtyZuliawatiZed, "Pengaruh Logo Halal Terhadap Kenaikan Pendapatan Pada UMKM Di Cikarang," *Al-Furqan: Jurnal Agama, Sosial, Dan Budaya* 3, no. 4 (2024): 1629–41.

²⁷ Kn. Sofyan Hasan and Taroman Pasyah, "Challenges of Indonesian Halal Industry in the Digital Economic Era," *Sriwijaya Law Review*, July 31, 2022, 319–35, <https://doi.org/10.28946/slrev.Vol6.Iss2.869.pp319-335>.

²⁸ Neni Ruhaeni and Eka An Aqimuddin, "Halal Food Certification as an Exception Clause under the Rule of the WTO-GATT: An Indonesia Experience," *Cogent Social Sciences* 9, no. 2 (December 2023): 2260160, <https://doi.org/10.1080/23311886.2023.2260160>.

²⁹ Umi Khusnul Khotimah, *Tafsir Ayat-Ayat Hukum Ekonomi Islam*, 1 (Jawa Timur: Nawa Litera Publishing, 2024).

and certainty regarding the availability of halal products for the public to consume and use, and to increase added value for business actors in producing and selling halal products.

In addition, based on Article 1 of the Halal Product Guarantee Law, which has been amended by Law Number 6 of 2023 concerning the stipulation of government regulations instead of Law Number 2 of 2022 concerning Job Creation into law, in this case, halal products are not only to guarantee that the product is halal, but also stipulate that the declared product ingredients must also be halal.³⁰ Products entering, circulating, and being traded in the territory of Indonesia must be halal-certified, as stated in Article 4 of the Halal Product Guarantee Law. Not only are they required to include a halal label, but business actors who distribute and trade non-halal products are also required to include a non-halal statement on their products as referred to in Article 26, paragraph 2 of the Halal Product Guarantee Law.³¹

Currently, many cases of food and beverage products, both local and imported, still lack halal certificate labels, and the existence of halal certificates on food and beverage packaging is doubtful.³² One case that has shocked the Muslim community involves a Widuran fried chicken stall in Solo that used non-halal ingredients, including pork fat, in the cooking process. In response to this case, the Solo MUI (Indonesian Ulema Council) has issued a statement urging the local government to follow up on the matter.³³ Furthermore, there are cases of traders selling imported food products without stating that they are not halal in their e-commerce descriptions. Some businesses claim their products are halal, but when they reach consumers, they find that the packaging lacks a halal label. They also exploit the popularity of imported food products, leaving many consumers unaware that the food, drink, or medicine they are consuming is non-halal. Muslims have the right to feel safe about the products they consume.³⁴ Therefore, government oversight of halal product certification for businesses is necessary. Furthermore, comprehensive regulations on halal product assurance must be implemented, covering goods and/or services related to food, beverages, medicines, and cosmetics used or utilized by the public. This must ensure legal certainty for the protection of muslim consumers in Indonesia.

³⁰ Undang-Undang Nomor 33 Tahun 2014 Tentang Jaminan Produk Halal (Lembaran Negara Republik Indonesia Tahun 2014 Nomor 295, Tambahan Lembaran Negara Republik Indonesia Nomor 5604).

³¹ *Ibid.*

³² Bambang Sugeng Ariadi Subagyono et al., *Perlindungan Konsumen Muslim Atas Produk Halal* (Jakad Media Publishing, 2020).

³³ Tara Wahyu NV, "MUI Solo Sesalkan Ayam Goreng Widuran Ternyata Nonhalal: Ada Unsur Penipuan," *detikjateng*, accessed October 12, 2025, <https://www.detik.com/jateng/bisnis/d-7934670/mui-solo-sesalkan-ayam-goreng-widuran-ternyata-nonhalal-ada-unsur-penipuan>.

³⁴ "Gempuran Makanan Impor Viral Tanpa Label Halal di E-commerce," *kumparan*, accessed October 12, 2025, <https://kumparan.com/putri-nabilla-1668576434105297963/gempuran-makanan-impor-viral-tanpa-label-halal-di-e-commerce-1zG78bx3HyQ>.

The Validity Of Blockchain-Based Halal Certificates As Legal Evidence In Resolving Muslim Consumer Protection Disputes In Indonesia

Indonesia's digital transformation has entered an increasingly complex phase, with the implementation of blockchain technology in various strategic sectors, including the halal industry.³⁵ A halal certificate is not merely an administrative document but also a legal instrument that protects the rights of muslim consumers to obtain products that comply with Islamic law. Therefore, the validity of blockchain-based halal certificates as legal evidence is crucial, particularly for addressing consumer protection issues.³⁶ In this digital era, the problem of fake halal certificates and data manipulation has become increasingly complex, raising doubts among consumers about the authenticity and integrity of halal products.³⁷

Blockchain has the characteristics of immutability (cannot be changed), transparency (transparent), and traceability (can be traced), which make it a suitable supporting system for the validation of halal certification data.³⁸ In a legal context, the validity of evidence is determined by the authenticity, integrity, and legality of its data source. Therefore, integrating blockchain into the halal certification system can guarantee the authenticity and validity of digital evidence under Indonesian law.³⁹ Blockchain-based halal certificates can be recorded through smart contracts running on the Ethereum network. This system enables decentralized data verification without relying on a central server, unlike conventional BPJPH systems. The study showed that the average certificate creation time was only 5.75 seconds, with a cost of approximately USD 20. Certificate verification can be completed in 1 second at no additional cost. The system's primary advantage is that it cannot be tampered with once the data is stored on the blockchain, increasing public trust in the certificate's authenticity.⁴⁰

³⁵ Arlinta Prasetyan Dewi and Mohammad Ichsan Hakiki, "Transformasi Digital Dalam Industri Halal Di Indonesia (Studi Implementasi Teknologi Blockchain Dalam Proses Sertifikasi Halal)," *Indo-Fintech Intellectuals: Journal of Economics and Business* 3, no. 2 (September 2023): 360–70, <https://doi.org/10.54373/ifijeb.v3i2.240>.

³⁶ Anak Agung Gde Agung, Heru Nugroho, and Robbi Hendriyanto, "A Blockchain-Based Halal Certificate Recording and Verification Prototype," *JOIV: International Journal on Informatics Visualization* 6, no. 2 (June 2022): 364, <https://doi.org/10.30630/joiv.6.2.995>.

³⁷ Anak Agung Gde Agung, Heru Nugroho, and Robbi Hendriyanto, "A Blockchain-Based Halal Certificate Recording and Verification Prototype," *JOIV: International Journal on Informatics Visualization* 6, no. 2 (June 2022): 364, <https://doi.org/10.30630/joiv.6.2.995>.

³⁸ Christian Bux et al., "Halal Food Sustainability between Certification and Blockchain: A Review," *Sustainability* 14, no. 4 (February 2022): 2152, <https://doi.org/10.3390/su14042152>.

³⁹ Etikah Karyani et al., "Intention to Adopt a Blockchain-Based Halal Certification: Indonesia Consumers and Regulatory Perspective," *Journal of Islamic Marketing* 15, no. 7 (June 2024): 1766–82, <https://doi.org/10.1108/JIMA-03-2023-0069>.

⁴⁰ Anak Agung Gde Agung, Heru Nugroho, and Robbi Hendriyanto, "A Blockchain-Based Halal Certificate Recording and Verification Prototype," *JOIV: International Journal on Informatics Visualization* 6, no. 2 (June 2022): 364, <https://doi.org/10.30630/joiv.6.2.995>.

Under the law of evidence, blockchain technology can be categorized as electronic evidence under Article 5 (1) of Law No. 11 of 2008 on Electronic Information and Transactions (ITE Law), which states that electronic information and/or electronic documents are valid legal evidence. Therefore, halal certificate data stored in the blockchain system has legal standing as long as it meets the integrity and authentication principles stipulated in the ITE Law.

Blockchain uses a decentralized system that enables efficiency. Computer systems connected to the Blockchain network automatically record and validate transactions, resulting in fewer errors, faster, cheaper, and easier transactions.⁴¹ Blockchain helps ensure halal data security by recording, in chronological order, every audit process, MUI fatwa decision, and issuance by BPJPH. This transparency not only strengthens the administrative validity of certificates but also provides digital legal evidence in the event of disputes.⁴² The Halal Product Assurance Law explicitly requires all products circulating in Indonesia to have a halal certificate issued by the Halal Product Assurance Organizing Agency (BPJPH) based on a fatwa from the Indonesian Ulama Council (MUI).⁴³

The Halal product guarantee law explicitly requires that all products circulating in Indonesia be Halal. Halal certificates, in the context of consumer protection law, have a dual function: (1) as a moral and religious guarantee for muslim consumers,⁴⁴ and (2) as a legal guarantee of the accuracy of information on products consumed.⁴⁵ When this certificate is manipulated, falsified, or used without permission, disputes arise regarding the protection of consumer rights to the halal status of products. Indonesia must have a halal certificate issued by BPJPH based on a Fatwa from the Indonesian Ulama Council (MUI).⁴⁶ A halal certificate is not just an administrative document, but also a legal instrument that protects the rights of Muslim consumers to obtain products that comply with Islamic law. Therefore, the validity of blockchain-

⁴¹ "Kementerian Komunikasi Dan Digital," accessed October 18, 2025, <https://www.komdigi.go.id/berita/sorotan-media/detail/beda-blockchain-dengan-bitcoin>.

⁴² Christian Bux et al., "Halal Food Sustainability between Certification and Blockchain: A Review," Op.Cit.

⁴³ Syahrul Bakti Harahap, Surya- Perdana, and Farid- Wajdi, "Authority For Issuing Halal Certification In Indonesia: History, Philosophy, And Institutions," *Pena Justisia: Media Komunikasi Dan Kajian Hukum* 23, no. 2 (July 2024): 1015, <https://doi.org/10.31941/pj.v23i2.4264>.

⁴⁴ Muksalmina et al., "Halal Certification In A Food Product As An Effort To Protect Law Against Muslim Consumers In Indonesia," *Proceedings of Malikussaleh International Conference on Law, Legal Studies and Social Science (MICoLLS)* 2 (December 2022): 00008, <https://doi.org/10.29103/micolls.v2i.78>.

⁴⁵ Aditya Fajri Kurnia Pradana et al., "Legal Protection for Muslim Consumers Regarding Halal Food Certification in Law Number 33 of 2014 (Gazetted)," *Al-Amwal : Journal of Islamic Economic Law* 9, no. 1 (July 2024): 91–109, <https://doi.org/10.24256/alw.v9i1.4959>.

⁴⁶ Kurnia Pradana et al., "Legal Protection for Muslim Consumers Regarding Halal Food Certification in Law Number 33 of 2014 (Gazetted)."

based halal certificates as legal evidence is crucial, particularly in resolving consumer protection disputes.

A blockchain-based halal certification system provides digital traceability that can serve as legal evidence in disputes between consumers and producers.⁴⁷ Blockchain records the entire process, from certification applications and raw material audits to halal fatwas (religious edicts), to the issuance of final certificates by BPJPH and MUI. Due to its distributed and indelible nature, this system provides permanent, authentic proof of a product's halal status.⁴⁸ In a legal context, the validity of evidence is determined by the authenticity, integrity, and legality of its data source.⁴⁹ Therefore, integrating blockchain into the halal certification system can guarantee the authenticity and strength of digital evidence under Indonesian law.⁵⁰ Blockchain-based halal certificates can be recorded through smart contracts running on the Ethereum network. This system enables decentralized data verification without relying on a central server, unlike conventional BPJPH systems.⁵¹

Under the law of evidence, blockchain technology can be categorized as electronic evidence under Article 5 (1) of Law No. 11 of 2008 on Electronic Information and Transactions (ITE Law), which states that electronic information and/or electronic documents constitute valid legal evidence. Therefore, halal certificate data stored on a blockchain system has legal standing as long as it meets the integrity and authentication principles stipulated in the ITE Law.⁵² Furthermore, blockchain plays a role in ensuring halal data security by recording, in chronological order, every audit process, MUI fatwa decision, and issuance by BPJPH. This transparency not only strengthens the administrative validity of certificates but also provides digital legal evidentiary value in the event of a dispute.

⁴⁷ Munawar Munawar and Arif Mugiono, "Framework for Smart Contract Blockchain in Halal Traceability, Integrity, and Transparency," *International Journal of Electrical and Computer Engineering (IJECE)* 14, no. 3 (June 2024): 2875, <https://doi.org/10.11591/ijece.v14i3.pp2875-2884>; Larissa P. Sidarto and Aditya Hamka, "Improving Halal Traceability Process in the Poultry Industry Utilizing Blockchain Technology: Use Case in Indonesia," *Frontiers in Blockchain* 4 (December 2021): 612898, <https://doi.org/10.3389/fbloc.2021.612898>.

⁴⁸ Hayyun Durrotul Faridah, "Halal Certification in Indonesia; History, Development, and Implementation," *Journal of Halal Product and Research* 2, no. 2 (December 2019): 68, <https://doi.org/10.20473/jhpr.vol.2-issue.2.68-78>.

⁴⁹ Albert Antwi-Boasiako and Hein Venter, "A Model for Digital Evidence Admissibility Assessment," in *Advances in Digital Forensics XIII*, vol. 511, ed. Gilbert Peterson and Sujeet Shenoj, IFIP Advances in Information and Communication Technology (Cham: Springer International Publishing, 2017), 23–38, https://doi.org/10.1007/978-3-319-67208-3_2.

⁵⁰ Moch Mahsun et al., "Blockchain as a Reinforcement for Traceability of Indonesian Halal Food Information through the Value Chain Analysis Framework," *AL-Muqayyad* 6, no. 1 (June 2023): 49–66, <https://doi.org/10.46963/jam.v6i1.1031>.

⁵¹ Christian Bux et al., "Halal Food Sustainability between Certification and Blockchain: A Review," *Sustainability* 14, no. 4 (February 2022): 2152, <https://doi.org/10.3390/su14042152>.

⁵² Putri Diyah Ayu Anggraini et al., "Electronic Certificates in Indonesia: Enhancing Legal Certainty or Introducing New Challenges?," *Arkus* 11, no. 1 (November 2024): 686–98, <https://doi.org/10.37275/arkus.v11i1.659>.

Legally, the validity of blockchain-based halal certificates can be analyzed based on the acceptance of digital certificates as legal evidence.⁵³ Article 5, paragraph (2) of the ITE Law emphasizes that electronic evidence is recognized as equal to written evidence. Furthermore, Article 6 of the ITE Law states that electronic information is considered valid if it can be accessed and displayed, its integrity is guaranteed, and it can be accounted for. Blockchain, which stores every certification transaction as an encrypted hash, fulfills all of these elements. Therefore, blockchain-based halal certificates are valid legal evidence in Indonesia.

In the Indonesian civil procedural law system, evidence is regulated by Article 164 of the HIR (Hereditary Law) and Article 1866 of the Civil Code, which includes written evidence, witnesses, allegations, confessions, and oaths. Since the enactment of the ITE Law, electronic documents have been considered part of written evidence. Therefore, blockchain-based halal certificates can be categorized as authentic electronic documents.⁵⁴

In cases of disputes between producers and Muslim consumers, the BPJPH (Procurement and Procurement Agency) or the consumer can present blockchain transaction records as proof of the certificate's authenticity. These records are non-repudiable because a digital signature from the issuing institution accompanies each transaction. Under the principle of *lex specialis derogat legi generali*, the specific provisions of the ITE Law can override general evidentiary law, rendering blockchain admissible in court as authentic digital evidence. Furthermore, the existence of a smart contract that records the agreement among BPJPH, LPH, and MUI clarifies the legal relationship among the parties. In the event of a certification violation, blockchain records serve as valid chronological evidence to determine legal liability.

Thus, blockchain can strengthen the legal evidentiary function in cases of: Halal certificate forgery, where digital records of results can prove the authenticity of a valid certificate, Producer liability disputes, because the data chain on the blockchain shows who the parties involved are and when the verification process was carried out, Consumer claims against violations of the halal label, where evidence from the blockchain becomes the basis for assessing administrative and criminal errors.

Conclusion

The results of this research indicate that blockchain-based halal certificates have potential evidentiary strength due to their transparency and decentralization, thereby enhancing the transparency and authenticity of halal

⁵³ Karyani et al., "Intention to Adopt a Blockchain-Based Halal Certification," June 2024.

⁵⁴ Dedy Muchti Nugroho and M. Hum, *The Existence Of Electronic Evidence In Verification*, 1, no. 1 (2017); Sepriyadi Adhan S, Ati Yuniati, and Muhammad Labib Muhadz, "Electronic Certificate Perspective in Civil Law Evidence," January 6, 2022, 339-48, <https://doi.org/10.2991/assehr.k.220102.043>.

products. Blockchain-based halal certificate integration can be used as an extension of electronic evidence tools that fulfill the elements of recognizing information and electronic documents as evidence acknowledged under the provisions of the Information and Electronic Transactions Law (ITE), as well as the halal certification obligations regulated in the Halal Product Guarantee Law, which strengthen the authenticity claims of halal certificates. However, the main obstacle lies in its practical enforcement: the lack of national technical guidelines regulating storage formats, verification mechanisms, and blockchain procedures, which creates legal oversight that hinders the recognition of permits in court.

Recommendation

Therefore, regarding this matter, there are suggestions and recommendations, namely the need for specific government regulations, especially technical guidelines for blockchain-based halal certification, to ensure legal certainty for the rights of Muslim consumers, who are well protected in the digital era.

References

Book

- Antwi-Boasiako, Albert, and Hein Venter. "A Model for Digital Evidence Admissibility Assessment." In *Advances in Digital Forensics XIII*, vol. 511, edited by Gilbert Peterson and Sujeet Sheno, 23–38. IFIP Advances in Information and Communication Technology. Cham: Springer International Publishing, 2017. https://doi.org/10.1007/978-3-319-67208-3_2.
- Bambang Sugeng Ariadi Subagyono, Zahry Vandawati Chumaida, Trisadini Prasastinah Usanti, and Indira Retno Aryatie. *Perlindungan Konsumen Muslim Atas Produk Halal*. Jakad Media Publishing, 2020.
- Peter Mahmud Marzuki. *Penelitian Hukum: Edisi Revisi*. 13th ed. Jakarta: Kencana, 2017. E-book diakses secara online melalui halaman https://books.google.co.id/books?id=CKZADwAAQBAJ&printsec=frontcover&hl=id&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false.
- Rosmawati. *Pokok-Pokok Hukum Perlindungan Konsumen*. 1. Kencana, 2018.
- Umi Khusnul Khotimah. *Tafsir Ayat-Ayat Hukum Ekonomi Islam*. 1. Jawa Timur: Nawa Litera Publishing, 2024.

Journal Article

- Bux, Christian, Erica Varese, Vera Amicarelli, and Mariarosaria Lombardi. "Halal Food Sustainability between Certification and Blockchain: A Review." *Sustainability* 14, no. 4 (February 2022): 2152. <https://doi.org/10.3390/su14042152>.
- . "Halal Food Sustainability between Certification and Blockchain: A Review." *Sustainability* 14, no. 4 (February 2022): 2152. <https://doi.org/10.3390/su14042152>.
- Dewi, Arlinta Prasetian, and Mohammad Ichsan Hakiki. "Transformasi Digital Dalam Industri Halal Di Indonesia (Studi Implementasi Teknologi Blockchain Dalam Proses Sertifikasi Halal)." *Indo-Fintech Intellectuals: Journal of Economics and Business* 3, no. 2 (September 2023): 360–70. <https://doi.org/10.54373/ifijeb.v3i2.240>.
- . "Transformasi Digital Dalam Industri Halal Di Indonesia (Studi Implementasi Teknologi Blockchain Dalam Proses Sertifikasi Halal)." *Indo-Fintech Intellectuals: Journal of Economics and Business* 3, no. 2 (September 2023): 360–70. <https://doi.org/10.54373/ifijeb.v3i2.240>.
- EttyZuliawatiZed. "Pengaruh Logo Halal Terhadap Kenaikan Pendapatan Pada UMKM di Cikarang." *Al-Furqan: Jurnal Agama, Sosial, dan Budaya* 3, no. 4 (2024): 1629–41.
- Fadzlurrahman and Susilowati Suparto. *Tinjauan Yuridis Perlindungan Konsumen Muslim Dalam Mendapatkan Jaminan Produk Halal Terhadap Pembelian Secara Online*. June 27, 2019. <https://doi.org/10.5281/ZENODO.3258658>.
- Faridah, Hayyun Durrotul. "Halal Certification in Indonesia: History, Development, and Implementation." *Journal of Halal Product and Research* 2, no. 2 (December 2019): 68. <https://doi.org/10.20473/jhpr.vol.2-issue.2.68-78>.
- Febriyanti, Ni Luh Kadek Dwi Fenny, I. Nyoman Putu Budiarta, and Ni Made Spasutari Ujianti. "Penegakan Hukum Dalam Penyelesaian Sengketa Transaksi Electronic Commerce." *Jurnal Interpretasi Hukum* 1, no. 1 (August 2020): 173–78. <https://doi.org/10.22225/juinhum.1.1.2206.173-178>.
- Fitri, Yuli Yana, Muhammad Iqbal Fasa, and Suharto Suharto. "Pengaruh Kepuasan Konsumen Terhadap Laju Perkembangan Industri Produk Makanan Dan Minuman Halal Indonesia." *Jurnal Bina Bangsa Ekonomika* 15, no. 1 (February 2022): 122–29. <https://doi.org/10.46306/jbbe.v15i1.128>.
- Gde Agung, Anak Agung, Heru Nugroho, and Robbi Hendriyanto. "A Blockchain-Based Halal Certificate Recording and Verification

- Prototype." *JOIV : International Journal on Informatics Visualization* 6, no. 2 (June 2022): 364. <https://doi.org/10.30630/joiv.6.2.995>.
- Harahap, Syahrul Bakti, Surya- Perdana, and Farid- Wajdi. "Authority For Issuing Halal Certification In Indonesia : History, Philosophy, And Institutions." *Pena Justisia: Media Komunikasi Dan Kajian Hukum* 23, no. 2 (July 2024): 1015. <https://doi.org/10.31941/pj.v23i2.4264>.
- Harsanto, Budi, Joval Ifghaniyafi Farras, Egi Arvian Firmansyah, Mahir Pradana, and Ardi Apriliadi. "Digital Technology 4.0 on Halal Supply Chain: A Systematic Review." *Logistics* 8, no. 1 (February 2024): 21. <https://doi.org/10.3390/logistics8010021>.
- Hasan, Kn. Sofyan and Taroman Pasyah. "Challenges of Indonesian Halal Industry in the Digital Economic Era." *Sriwijaya Law Review*, July 31, 2022, 319–35. <https://doi.org/10.28946/slrev.Vol6.Iss2.869.pp319-335>.
- . "Challenges of Indonesian Halal Industry in the Digital Economic Era." *Sriwijaya Law Review*, July 31, 2022, 319–35. <https://doi.org/10.28946/slrev.Vol6.Iss2.869.pp319-335>.
- Jawad, Shejn Ghalib, and Abbas Hazim Mohammed. "Cost Reduction and Efficiency Boost Through E-Commerce Strategies." *Indonesian Journal of Law and Economics Review* 19, no. 3 (August 2024). <https://doi.org/10.21070/ijler.v19i3.1154>.
- Karyani, Etikah, Ira Geraldina, Marissa Grace Haque, and Ahmad Zahir. "Intention to Adopt a Blockchain-Based Halal Certification: Indonesian Consumers and Regulatory Perspective." *Journal of Islamic Marketing* 15, no. 7 (June 2024): 1766–82. <https://doi.org/10.1108/JIMA-03-2023-0069>.
- Kurnia Pradana, Aditya Fajri, Muhammad Yunan Hidayat, Sugiyat Sugiyat, and M. Zidny Nafi' Hasbi. "Legal Protection for Muslim Consumers Regarding Halal Food Certification in Law Number 33 of 2014 (Gazetted)." *Al-Amwal : Journal of Islamic Economic Law* 9, no. 1 (July 2024): 91–109. <https://doi.org/10.24256/alw.v9i1.4959>.
- Mahsun, Moch, Yuniarti Hidayah Suyoso Putra, Nur Asnawi, Ahmad Djalaluddin, and Nur Hasib. "Blockchain as a Reinforcement for Traceability of Indonesian Halal Food Information through the Value Chain Analysis Framework." *AL-Muqayyad* 6, no. 1 (June 2023): 49–66. <https://doi.org/10.46963/jam.v6i1.1031>.
- Muksalmina, Tasyukur, Fitri Maghfirah, and Muammar. "Halal Certification In A Food Product As An Effort To Protect Law Against Muslim Consumers In Indonesia." *Proceedings of Malikussaleh International Conference on Law, Legal Studies and Social Science (MICoLLS) 2* (December 2022): 00008. <https://doi.org/10.29103/micolls.v2i.78>.
- Munawar, Munawar, and Arif Mugiono. "Framework for Smart Contract Blockchain in Halal Traceability, Integrity, and Transparency."

- International Journal of Electrical and Computer Engineering (IJECE)* 14, no. 3 (June 2024): 2875. <https://doi.org/10.11591/ijece.v14i3.pp2875-2884>.
- Nugroho, Dedy Muchti, and M. Hum. *The Existence Of Electronic Evidence In Verification*. 1, no. 1 (2017).
- Nusran, Muhammad, Evriza Noverda Nasution, Mustofa Aji Prayitno, and Eko Sudarmanto. "Halal Certification in The Digital Age: Leveraging Online Platforms for Enhanced Transparency and Accessibility." *Jurnal Ekonomi, Akuntansi dan Manajemen Indonesia* 2, no. 01 (December 2023): 105–15. <https://doi.org/10.58471/jeami.v2i01.379>.
- Prawira, Ilham Abdi. "Legal Protection for Consumers Through Halal Certification Mandate of Law Number 33 of 2014 Concerning Guarantees for Halal Products." *Media Syari'ah: Wahana Kajian Hukum Islam dan Pranata Sosial* 24, no. 2 (December 2022): 207. <https://doi.org/10.22373/jms.v24i2.11477>.
- Putri Diyah Ayu Anggraini, Aqhina Dzikrah Aurora, Aprilia Niravita, Muhammad Adymas Hikhal Fikri, and Harry Nugroho. "Electronic Certificates in Indonesia: Enhancing Legal Certainty or Introducing New Challenges?" *Arkus* 11, no. 1 (November 2024): 686–98. <https://doi.org/10.37275/arkus.v11i1.659>.
- Rahman, Irsan, Sahrul, Riezka Eka Mayasari, Tia Nurapriyanti, and Yuliana. "Hukum Perlindungan Konsumen Di Era E-Commerce: Menavigasi Tantangan Perlindungan Konsumen Dalam Lingkungan Perdagangan Digital." *Jurnal Hukum Dan HAM Wara Sains* 2, no. 08 (August 2023): 683–91. <https://doi.org/10.58812/jhhws.v2i08.605>.
- Rejeb, Abderahman, Karim Rejeb, Suhaiza Zailani, Horst Treiblmaier, and Karen J. Hand. "Integrating the Internet of Things in the Halal Food Supply Chain: A Systematic Literature Review and Research Agenda." *Internet of Things* 13 (March 2021): 100361. <https://doi.org/10.1016/j.iot.2021.100361>.
- Ruhaeni, Neni, and Eka An Aqimuddin. "Halal Food Certification as an Exception Clause under the Rule of the WTO-GATT: An Indonesian Experience." *Cogent Social Sciences* 9, no. 2 (December 2023): 2260160. <https://doi.org/10.1080/23311886.2023.2260160>.
- S, Sepriyadi Adhan, Ati Yuniati, and Muhammad Labib Muhadz. "Electronic Certificate Perspective in Civil Law Evidence." January 6, 2022, 339–48. <https://doi.org/10.2991/assehr.k.220102.043>.
- Sidarto, Larissa P., and Aditya Hamka. "Improving Halal Traceability Process in the Poultry Industry Utilizing Blockchain Technology: Use Case in Indonesia." *Frontiers in Blockchain* 4 (December 2021): 612898. <https://doi.org/10.3389/fbloc.2021.612898>.
- Sofiana, Ratna, Satria Utama, and Abdur Rohim. "The Problems of Halal Certification Regarding Consumer Protection in Malaysia and

- Indonesia." *Journal of Human Rights, Culture and Legal System* 1, no. 3 (November 2021). <https://doi.org/10.53955/jhcls.v1i3.16>.
- Sri Wahyuni, Daharmi Astuti, and Boy Syamsul Bakhri. "Pengaruh Label Halal Terhadap Peningkatan Omzet Penjualan Produk Makanan Ringan Umkm Di Kota Dumai." *Journal Bilal: Bisnis Ekonomi Halal* 1, no. 2 (March 2021): 43–47. <https://doi.org/10.51510/bilal.v1i2.205>.
- Sulistiyowati, Eny, Nurul Hikmah, and Isye Junita Melo. "Obligations of Business Actors to Publish Halal Labels in Food as a Form of Legal Protection for Muslim Consumers." Paper presented at Proceedings of the 1st International Conference on Social Sciences (ICSS 2018), Bali, Indonesia. *Proceedings of the 1st International Conference on Social Sciences (ICSS 2018)*, 2018. <https://doi.org/10.2991/icss-18.2018.23>.
- Ulfa Afrianti, Mochammad Isa Anshori, and Nurita Andriani. "Digitalisasi Marketing Melalui Instagram Dan Facebook Ads Dalam Meningkatkan Skala Usaha UMKM: Systematic Literature Review." *Jurnal Masharif Al-Syariah: Jurnal Ekonomi Dan Perbankan Syariah* 9, no. 1 (2024): 187–98. <https://doi.org/10.30651/jms.v9i1.21058>.
- Vera, Serlita Okky. "Perlindungan Hak Konsumen Dalam Transaksi Elektronik via Shopee." *Badamai Law Journal* 6, no. 2 (December 2021): 338. <https://doi.org/10.32801/damai.v6i2.11811>.
- Wilkins, Stephen, Muhammad Mohsin Butt, Farshid Shams, and Andrea Pérez. "The Acceptance of Halal Food in Non-Muslim Countries: Effects of Religious Identity, National Identification, Consumer Ethnocentrism and Consumer Cosmopolitanism." *Journal of Islamic Marketing* 10, no. 4 (November 2019): 1308–31. <https://doi.org/10.1108/JIMA-11-2017-0132>.
- Yuningsih M, A. Alfira, Riska Erfiana Putri, and Hasse Jubba. "Implikasi Sertifikasi Halal Terhadap Perkembangan Industri Halal Di Indonesia." *Al-Tijary* 8, no. 2 (June 2023): 155–69. <https://doi.org/10.21093/at.v8i2.7652>.

Law / Regulation

- Undang-Undang Nomor 33 Tahun 2014 Tentang Jaminan Produk Halal (Lembaran Negara Republik Indonesia Tahun 2014 Nomor 295, Tambahan Lembaran Negara Republik Indonesia Nomor 5604).
- Undang-Undang Nomor 8 Tahun 1999 Tentang Perlindungan Konsumen (Lembaran Negara Republik Indonesia Tahun 1999 Nomor 22, Tambahan Lembaran Negara Republik Indonesia Nomor 3821).
- Undang-Undang Nomor 11 Tahun 2008 tentang Informasi dan Transaksi Elektronik (Lembaran Negara Republik Indonesia Tahun 2008 Nomor 58, Tambahan Lembaran Negara Republik Indonesia Nomor 4843).

Website

- “Jelang Wajib Halal Oktober 2026, BPJPH Berikan Sertifikat Halal Gratis Untuk Warteg Dan Sejenisnya | Badan Penyelenggara Jaminan Produk Halal.” Accessed October 8, 2025. <https://bpjph.halal.go.id/detail/jelang-wajib-halal-oktober-2026-bpjph-berikan-sertifikat-halal-gratis-untuk-warteg-dan-sejenisnya>.
- “Kementerian Komunikasi Dan Digital.” Accessed October 18, 2025. <https://www.komdigi.go.id/berita/sorotan-media/detail/beda-blockchain-dengan-bitcoin>.
- kumparan. “Gempuran Makanan Impor Viral Tanpa Label Halal di E-commerce.” Accessed October 12, 2025. <https://kumparan.com/putri-nabilla-1668576434105297963/gempuran-makanan-impor-viral-tanpa-label-halal-di-e-commerce-1zG78bx3HyQ>.
- NV, Tara Wahyu. “MUI Solo Sesalkan Ayam Goreng Widuran Ternyata Nonhalal: Ada Unsur Penipuan.” detikjateng. Accessed October 12, 2025. <https://www.detik.com/jateng/bisnis/d-7934670/mui-solo-sesalkan-ayam-goreng-widuran-ternyata-nonhalal-ada-unsur-penipuan>.