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Integration of ESG and SDGS Principles in Sustainable Sharia Trade Governance in the Global Digital Era

Abdul Rochim[1)], Linggha Sennakyz[2)], Nur Kholis[3)], Ah. *Ali* Arifin[4)]
[1,2)] Sharia Economics, Faculty of Islamic Economics and Business, Sunan Ampel State Islamic University, Surabaya, Indonesia
[3,4)] Faculty of Islamic Economics and Business, Sunan Ampel State Islamic University, Surabaya, Indonesia

[*]Coresponding Author
Email : abdulrohimzz008@gmail.com, Lingghasennakyz@gmail.com, nurkholis@uinsa.ac.id, aaarifin07@uinsa.ac.id

Abstract

This study aims to develop an integrative governance model for Sharia-compliant digital trade by examining how maqāṣid al-sharīʿah, Environmental, Social, and Governance (ESG) principles, and the Sustainable Development Goals (SDGs) intersect conceptually. Using a narrative review approach, data were collected through purposive searches of academic databases and institutional sources covering Islamic governance, sustainability frameworks, and digital technologies. The selected literature was analyzed using thematic interpretive methods to identify recurring concepts and cross-domain linkages. The literature synthesis reveals four key findings. First, there is a strong convergence between Islamic ethical objectives and the global sustainability framework, as reflected in empirical evidence regarding the role of Islamic financial instruments—such as zakat and green sukuk—in reducing poverty and reducing carbon emissions. The integration of maqāṣid with ESG–SDG indicators also strengthens the moral dimension of sustainability and produces an evaluation framework more suited to Muslim societies. Second, traditional Sharia governance demonstrates significant limitations in addressing the digital ecosystem, particularly related to algorithmic bias, real-time technology audits, and the lack of digital capacity of Sharia Supervisory Boards. Third, digital trade carries ethical, environmental, and social risks not yet addressed by conventional compliance structures, such as systemic bias in AI, high energy consumption in data centers, and data extraction practices that compromise privacy and distributive justice. Fourth, the literature review points to the need for a new governance model that integrates the principles of maqāṣid, global sustainability indicators, and digital technology. This model reframes Sharia governance as proactive and systems-oriented, suitable for the ethical and technological demands of the digital era.

Keywords: Maqāṣid al-Sharīʿah, ESG, Sustainable Development Goals, Digital Trade Governance, Islamic Economics

INTRODUCTION

The contemporary global economy is undergoing a fundamental shift in its paradigm from profit-centered growth to sustainability-oriented development. This transition reflects a growing international concern over climate change, widening social inequality, and persistent governance failures that erode long-term economic resilience (Ricotti, 2022). Within this context, the Environmental, Social, and Governance (ESG) framework and the Sustainable Development Goals (SDGs) have emerged as the dominant global instruments for assessing ethical conduct, inclusive development, and responsible business practices (Lemana et al., 2025). ESG provides measurable indicators for evaluating environmental stewardship, social responsibility, and institutional accountability, while the SDGs offer a universal roadmap for achieving equitable and sustainable development across economic sectors (Chang & Cheng, 2025). Empirical evidence consistently shows that institutions integrating ESG and SDG principles experience strengthened stakeholder trust, enhanced transparency, and improved long-term stability (Deng & Karia, 2025; Huiping et al., 2024). In Islamic economic systems, ESG-

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aligned practices complement Sharia governance, particularly through the roles of the Sharia Supervisory Board (DPS), which emphasizes trust, transparency, and accountability as core ethical principles (Putri et al., 2025). These findings underscore that sustainability and Islamic values can operate synergistically to shape fair, responsible, and ethically grounded economic governance.

Islamic economics has long embedded sustainability within the higher objectives of Islamic law (maqāṣid al-sharī'ah), which prioritize the protection of life (ḥifẓ al-nafs), intellect (ḥifẓ al-'aql), wealth (ḥifẓ al-māl), human dignity (ḥifẓ al-insān), and the environment (ḥifẓ al-bī'ah) (Karimullah, 2023). A growing body of literature highlights the strong conceptual alignment between maqāṣid values and global sustainability frameworks, including the SDGs and ESG indicators, particularly in areas such as ethical production, social welfare, and environmental care (Asmadi & Saimy, 2025). For example, ESG-driven halal supply chain models have demonstrated improvements in efficiency, waste reduction, and inclusive participation across the halal ecosystem. This illustrates how Islamic economic ethics directly reinforce global sustainability goals and provide a moral foundation for equitable and environmentally conscious market systems.

The rapid digitalization of global trade further amplifies the need for integrating ESG, SDGs, and Sharia principles into a unified governance framework. Digital trade today—through halal e-commerce, Islamic fintech, and blockchain-enabled halal verification systems—offers new opportunities for transparency, traceability, and consumer trust (Habib, 2023). At the same time, emerging risks associated with digital systems—including data exploitation, algorithmic bias, digital carbon footprints, and opaque platform governance—pose ethical and social challenges that traditional Sharia governance mechanisms are currently unable to address (Faizin et al., 2025). As digital infrastructures increasingly shape market behavior and economic outcomes, sustainability and Sharia compliance must be operationalized not only at the transactional level but also within the technological architecture that governs digital trade.

A review of previous research shows that studies on sustainability in Islamic economics remain fragmented. Most studies only discuss ESG, SDGs, maqāṣid al-sharīʿah, or digital commerce separately, without linking all four within a unified governance framework. While research by Asmadi & Saimy (2025), Karimullah (2023), and Habib (2023) confirms the alignment of the maqāṣid concept with sustainability goals and the benefits of digitalization for transparency, it fails to explain how these principles can be technically operationalized in modern digital platforms. Furthermore, no research has systematically examined the relationship between digital-era risks—such as algorithmic manipulation, data privacy breaches, and digital carbon footprints—and Sharia governance or sustainability indicators. Consequently, understanding how Islamic ethical values can be translated into measurable indicators and directly applied to digital commerce technology architecture remains very limited.

Accordingly, this study undertakes a narrative review to explore the conceptual convergence of maqāṣid-based Islamic ethics, ESG–SDG sustainability frameworks, and digital governance mechanisms, and to synthesize these insights into an integrative model for sustainable Sharia trade in the digital era. Rather than adhering to the procedural strictness of systematic review methods, the narrative approach enables a flexible and interpretive engagement with diverse literatures, facilitating the development of a conceptual governance model that aligns Islamic normative values with global sustainability goals and the realities of emerging digital infrastructures.

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RESEARCH METHODS

This study employs a narrative review design to synthesize interdisciplinary literature on Sharia governance, sustainability frameworks, and digital trade systems. Narrative reviews are particularly suitable for conceptual and theory-building research because they allow flexible engagement with diverse and evolving bodies of knowledge—a significant advantage when working across fields as epistemically distinct as Islamic jurisprudence, sustainability science, and digital governance (Greenhalgh et al., 2018). This flexibility is essential for exploring how Islamic ethical principles can be connected to contemporary debates on sustainability and technological governance.

Relevant literature was identified through purposive and concept-driven searching, an approach widely recommended for conceptual reviews that seek depth of understanding rather than exhaustive enumeration (Snyder, 2019). Searches were conducted through Scopus, Web of Science, Dimensions, DOAJ, and Google Scholar, complemented by institutional materials such as AAOIFI governance standards, DSN-MUI fatwa documents, UN SDG publications, and global ESG reporting frameworks. The selection strategy followed the principle that a conceptual review should focus on sources that meaningfully inform key analytical domains (Watson & Webster, 2020), namely Islamic governance and *maqāṣid al-sharīʿah*, sustainability frameworks (ESG–SDGs), and digital economic infrastructures such as AI governance, blockchain systems, and data ethics.

The reviewed literature was analyzed using a thematic interpretive approach, which is consistent with qualitative conceptual synthesis and supports the development of integrative theoretical insights. Thematic analysis allows researchers to identify recurring patterns, cluster related ideas, and interpret conceptual relationships across diverse bodies of literature (Nowell et al., 2017). Through iterative reading, comparison, and interpretation, the analysis produced coherent themes that connect Islamic ethical foundations with global sustainability commitments and emerging digital governance challenges.

To enhance transparency regarding the conceptual breadth of the literature informing the model, the final body of sources was categorized according to their primary conceptual contribution, as presented in Table 1. This categorization demonstrates that the narrative synthesis draws upon a balanced combination of Islamic governance literature, global sustainability frameworks, digital governance studies, and Islamic digital trade scholarship.

Table 1. Categories of Included Literature

Category	Number of Sources	Examples of Topics
Islamic governance & maqāṣid	14	Sharia audit, fiqh muamalat, maqāṣid frameworks
ESG & SDGs	10	Sustainability reporting, ESG metrics, SDG targets
Digital economy & technology	12	AI ethics, blockchain, data governance
Islamic digital trade	6	Halal e-commerce, Islamic fintech, digital zakat

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RESULTS AND DISCUSSION

The narrative synthesis of the literature reveals four major thematic domains that collectively explain how maqāṣid al-sharīʿah, global sustainability frameworks, and digital technologies intersect within the governance of contemporary Sharia-compliant trade. Rather than emerging from a mechanical coding procedure, these themes reflect recurring conceptual patterns, shared concerns, and evolving scholarly conversations across Islamic economics, sustainability science, and digital governance.

Convergence of Maqāṣid al-Sharīʿah with ESG-SDGs in Digital Trade

The conceptual alignment between *maqāṣid al-sharīʿah* and global sustainability frameworks represents more than superficial thematic overlap; it reflects a deep normative convergence rooted in shared commitments to justice, equity, environmental stewardship, and intergenerational welfare (Abdullah & Dusuki, 2021; Chapra, 2018). Recent empirical research has substantiated this theoretical alignment by demonstrating measurable outcomes when Islamic financial instruments operationalize maqāṣid principles in conjunction with SDG targets. For instance, a comprehensive study analyzing 30 Islamic financial institutions (IFIs) between 2015 and 2023 found that Sharia-compliant mechanisms such as zakat distribution reduced poverty rates by 12.7%, while green sukuk issuances contributed to a reduction of 2.3 million metric tons of CO_2 emissions annually (Aziz et al., 2024). These findings demonstrate that maqāṣid objectives—particularly ḥifẓ al-māl (protection of wealth), ḥifẓ al-nafs (preservation of life), and *ḥifẓ al-bīʾah* (environmental care)—can be translated into quantifiable sustainability outcomes when integrated with structured ESG-SDG indicators.

Furthermore, integrating maqāṣid principles with ESG frameworks enhances the moral and spiritual dimensions of sustainability governance. While ESG metrics focus primarily on measurable environmental impacts, social equity, and corporate accountability, maqāṣid al-sharīʿah enriches these indicators by embedding them within a broader ethical cosmology that emphasizes divine stewardship (*khilāfah*), justice (*ʿadl*), benevolence (*iḥsān*), and balance (*mīzān*) (Auda, 2008; Mohd Noor et al., 2021). Recent scholarly work has proposed an Integrated Maqāṣid-SDG Index as a practical tool for assessing the socio-environmental performance of Islamic financial products, combining jurisprudential analysis with sustainability metrics to create faith-integrated development models that resonate deeply with Muslim-majority societies (Awang et al., 2025; Aziz et al., 2024). Such integration addresses criticisms that the SDGs lack spiritual grounding and value-based ethical reasoning, thereby strengthening their legitimacy and cultural relevance in Islamic contexts (Anwar et al., 2025).

ESG integration within Islamic finance has also been empirically shown to reinforce distributive justice and social responsibility. Studies have documented a strong compatibility between ESG best practices and Sharia principles, with both frameworks emphasizing ethical behavior, social development, and long-term sustainability (Awang et al., 2025). Green sukuk has emerged as an auspicious instrument, with empirical evidence from Indonesia demonstrating its capacity to channel significant capital towards renewable energy and climate mitigation projects while adhering to Islamic ethical standards (Yuniawati & Purwanti, 2024). The findings reveal a strong alignment between Maqasid al-Shariah and the SDGs, with a notable emphasis on social finance tools such as zakat and waqf, which contribute to equitable resource distribution, social inclusion, financial stability, and environmental sustainability (Wahyudi et al., 2025). However, challenges remain, including regulatory disparity across jurisdictions, weak

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institutional frameworks, and insufficient stakeholder awareness, which hinder the full operationalization of ESG-maqāṣid alignment in digital trade ecosystems (Rofiq & Khusnudin, 2025). Addressing these gaps requires enhanced regulatory harmonization, capacity-building initiatives, and the development of standardized Islamic sustainability benchmarks suited for the digital era.

Limitations of Traditional Sharia Governance in a Digitalized Economy

Traditional Sharia governance mechanisms, particularly those exercised by Sharia Supervisory Boards (SSBs), face profound structural, regulatory, and technological limitations when applied to contemporary digital trade ecosystems. Historically, Sharia oversight has focused on ensuring transactional compliance with Islamic jurisprudential principles—avoiding prohibited elements such as riba (interest), gharar (excessive uncertainty), and maysir (gambling)—through document-based audits and post-contractual reviews (El-Gamal, 2009; Iqbal & Mirakhor, 2011). However, this compliance-focused approach proves inadequate for addressing the systemic, infrastructural, and algorithmic dimensions of digital trade, where ethical risks emerge not from contractual form but from the computational architectures that govern platform behavior, data flows, and automated decision-making processes (Faizi & Shuib, 2024).

Recent research has identified specific constraints that hinder the effectiveness of SSBs in digital financial ecosystems. A 2025 study analyzing the digital transformation of Islamic finance found that SSBs face three critical challenges: structural constraints, regulatory inadequacies, and technological capacity gaps (Ermiati, 2025). Structural constraints include limited institutional independence, cross-membership issues that compromise objectivity, and insufficient authority to conduct real-time audits of digital platforms. Regulatory inadequacies stem from the absence of specific legal frameworks governing Islamic fintech, blockchain-based transactions, and algorithmic trading, leaving SSBs without clear mandates or enforcement mechanisms for emerging digital services. Technological capacity gaps reflect low digital literacy among SSB members, many of whom lack expertise in artificial intelligence, blockchain, cybersecurity, and data ethics—competencies essential for overseeing contemporary digital financial products (Said, 2025).

The rapid pace of financial technology innovation compounds these limitations. Digital platforms increasingly rely on machine learning algorithms for credit scoring, risk assessment, and personalized marketing, creating ethical challenges related to fairness, transparency, and accountability that traditional Sharia audits cannot address (Eddy et al., 2025). For instance, algorithmic trading systems execute thousands of transactions per second based on predictive models, raising questions about compliance with Sharia principles, as SSBs often lack the technological tools to assess these in real-time (Abu Bakar et al., 2025). Similarly, blockchain-based Islamic fintech platforms operate through decentralized smart contracts that automate transactional logic, requiring SSBs to evaluate not only contractual outcomes but also the underlying code and governance protocols—a domain where most SSBs have limited expertise.

Scholars emphasize that SSBs must transition from reactive, compliance-checking bodies to proactive, adaptive governance entities capable of addressing the ethical and sustainability dimensions of digital trade (Said, 2025). This transformation requires interdisciplinary capacity-building programs that integrate Islamic jurisprudence with digital ethics, sustainability science, and technology governance. It also necessitates regulatory reforms that establish clear mandates for SSB oversight of digital platforms, supported by real-time audit technologies grounded in

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maqāṣid al-sharīʿah principles. Without such reforms, traditional Sharia governance risks becoming increasingly irrelevant to the ethical and operational realities of digital trade, ensuring only superficial compliance while leaving deeper systemic harms unregulated (Kamla & Alsoufi, 2015).

Ethical, Environmental, and Social Challenges in Digital Sharia Trade

Digital trade ecosystems present a constellation of ethical, environmental, and social challenges that intersect directly with Islamic commitments to justice, dignity, environmental protection, and equitable wealth distribution. One of the most pressing concerns is algorithmic bias, which systematically disadvantages marginalized groups through discriminatory decision-making processes embedded within AI-driven platforms. Algorithmic bias arises from multiple sources, including biased training data that reflects historical inequalities, flawed model assumptions that prioritize efficiency over fairness, and insufficient diversity in the datasets used to train machine learning systems (Browne, 2023). These biases manifest across critical economic domains, including credit scoring, hiring algorithms, pricing strategies, and risk assessment models, often reinforcing societal inequities rather than mitigating them (Taeihagh, 2021).

The "black box" nature of many algorithms makes it difficult for affected individuals and oversight bodies to understand or challenge discriminatory decisions (Brożek et al., 2024). Studies demonstrate that vulnerable populations are disproportionately affected by structural and technical sources of bias, with fairness metrics being inconsistently applied across various domains (Radanliev, 2025). Such practices directly contradict Islamic principles of *ʿadl* (justice), *raḥmah* (compassion), and equitable treatment, yet they remain largely unaddressed by traditional Sharia governance mechanisms, which are focused exclusively on contractual compliance (Abdullah & Dusuki, 2021).

Beyond algorithmic bias, the environmental footprint of digital infrastructure poses significant challenges to *ḥifẓ al-bīʾah* (environmental protection), a core maqāṣid objective. Data centers, which underpin all digital trade platforms, consume massive amounts of electricity and contribute substantially to global carbon emissions. A rigorous recalibration of global data center energy estimates found that data centers accounted for approximately 1% of global electricity use in 2018, with projections indicating continued growth (Masanet et al., 2020). More recent forecasting research using AI models estimates that overall CO_2 emissions in the US could increase by up to 0.4–1.9% by 2030 due to the expansion of data centers, with significant implications for climate goals (Jha et al., 2025). This hidden environmental burden contradicts Islamic sustainability ethics embedded within maqāṣid al-sharīʿah, yet remains invisible within traditional Sharia audits that assess only transactional compliance (Andrae, 2020).

Social accountability challenges increasingly complicate digital trade governance. Contemporary research indicates that platform algorithms are often optimized for efficiency, scale, and commercial objectives, thereby reproducing structural inequalities and undermining Islamic commitments to fair access and distributive justice (Crawford, 2021). Digital platforms also embed opaque decision-making processes within their technical architecture, limiting transparency and making it difficult for users or regulators to trace how rankings, recommendations, or risk assessments are generated. Simultaneously, pervasive data extraction and behavioral profiling practices enable forms of surveillance that erode privacy, autonomy, and human dignity by transforming user behavior into commercial assets without meaningful consent (Pasquale, 2021). These dynamics illustrate that digital trade is shaped not merely by

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contractual interactions but by deeper algorithmic infrastructures and platform power structures that influence market behavior, social outcomes, and ethical risks. Addressing such challenges requires Sharia governance to move beyond its traditional focus on transactional legality and engage directly with the technological, organizational, and political economies that underpin digital trade ecosystems.

Toward an Integrated Digital Sharia Governance Model

The integrated Digital Sharia Governance Model synthesizes Islamic ethical principles, global sustainability frameworks, and digital technologies into a unified governance architecture suited to the emerging challenges of Sharia-compliant digital trade. In this model, *maqāṣid al-sharīʿah* serve as the normative anchor, while ESG and SDG indicators translate these ethical imperatives into measurable accountability tools that support structured monitoring and continuous improvement (Fang et al., 2022). Digital technologies operationalize these commitments through compliance-by-design, embedding transparency, fairness, and ethical safeguards directly into platform infrastructures.

Blockchain plays a central role in enhancing transparency and traceability across digital trade networks. Recent studies demonstrate its effectiveness in strengthening supply chain integrity, enabling tamper-resistant record-keeping, and providing end-to-end visibility in complex trade ecosystems (Tan et al., 2022). Blockchain's decentralized architecture aligns with Islamic principles of *amānah* and accountability by reducing information asymmetry and mitigating fraud.

Ensuring fairness and privacy in AI-mediated digital systems requires advanced privacy-preserving technologies. Federated learning combined with modern privacy mechanisms provides a viable approach for enabling collaborative data analysis without exposing sensitive information. Empirical studies demonstrate that federated learning frameworks can maintain model performance while preserving data confidentiality, making them suitable for ethically sensitive domains, such as Islamic finance and halal certification (Wen et al., 2023). Such architectures support *ḥifẓ al-ʿaql* and *ḥifẓ al-insān* by protecting user autonomy, cognitive integrity, and personal data.

The model also highlights the importance of interdisciplinary collaboration and harmonized governance. Comparative analyses of global AI ethics guidelines reveal broad convergence around principles of transparency, fairness, accountability, and human oversight—all values deeply consistent with Sharia-based ethical governance (Jobin et al., 2019). These shared principles provide a foundation for integrating Islamic jurisprudential reasoning with contemporary sustainability and technological governance practices.

Overall, the Digital Sharia Governance Model reframes Islamic oversight as a proactive, systems-oriented process that addresses not only transactional validity but also the ethical, environmental, and social dimensions of digital trade. By grounding governance in *maqāṣid*, operationalizing it through ESG-SDG indicators, and enabling it via blockchain transparency and privacy-preserving AI systems, the model offers a coherent and future-ready pathway for ensuring justice, sustainability, and human dignity in the digital economy.

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CONCLUSION

This narrative review has demonstrated that governing Sharia-compliant digital trade in the contemporary global economy requires a conceptual shift from traditional, transaction-focused oversight to a more holistic, systems-oriented framework. The synthesis of the literature indicates that the ethical objectives embedded in *maqāṣid al-sharīʿah*—including the protection of life, intellect, wealth, dignity, and the environment—align closely with the values promoted in global sustainability frameworks such as the Environmental, Social, and Governance (ESG) standards and the Sustainable Development Goals (SDGs). While Islamic economic thought has long emphasized justice, stewardship, welfare, and balance, ESG and SDG frameworks offer structured, measurable indicators that translate these ethical commitments into operational governance criteria. This alignment suggests that Islamic governance can be strengthened through the integration of sustainability-based accountability tools.

However, the review also reveals significant limitations in traditional Sharia governance structures when applied to digital trade ecosystems. Digital platforms operate through algorithmic systems, data-driven infrastructures, and computational processes that shape market behavior before, during, and after transactions. These dynamics create new categories of ethical and sustainability risks that classical jurisprudential tools are ill-equipped to address. Issues such as data exploitation, algorithmic bias, digital carbon emissions, and opaque platform governance operate at infrastructural layers that evade conventional contract-centric assessments. As a result, current Sharia oversight practices risk ensuring only formal compliance while leaving deeper systemic harms unregulated.

To address these challenges, this study proposes an integrative Digital Sharia Governance Model that unites Islamic ethical principles, global sustainability indicators, and digital governance technologies. In this model, *maqāṣid al-sharīʿah* provide the normative foundations; ESG–SDG frameworks operationalize these values through measurable performance metrics; and digital technologies—such as blockchain transparency, AI fairness tools, and privacy-preserving architectures—serve as mechanisms for embedding compliance by design. This conceptual framework reimagines Sharia governance as proactive rather than reactive, emphasizing continuous ethical alignment within digital infrastructures rather than reliance on after-the-fact documentation.

The implications of this model are far-reaching. Islamic financial institutions, halal e-commerce platforms, and Islamic fintech providers must adopt governance practices that address both ethical intentions and technological realities. Sharia Supervisory Boards require expanded competencies in digital ethics and sustainability metrics, while regulators and educational institutions must foster interdisciplinary expertise that bridges Islamic jurisprudence, sustainability science, and digital governance.

Future research should empirically evaluate the model in real-world digital trade settings, explore Islamic perspectives on algorithmic justice and digital rights, and develop sustainability benchmarks tailored to Islamic economic contexts. By integrating ethical reasoning, sustainability indicators, and digital architecture design, Islamic financial institutions can uphold Sharia values while navigating the complex governance demands of the digital age.

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