

Implementation of the Principles of Hifzh Al-Bī'ah and Hifzh Al-Māl: A Sharia-Based Green Digital Business Model In the Printing Industry

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ABSTRACT

Printing industry faces a dual crisis: digital disruption and environmental impacts (waste, resource consumption). This study formulates a revolutionary Green-Digital business model that integrates modern efficiency with Sharia ethics. Its main focus is realizing Hifẓ al-Bī'ah (Environmental Preservation) and Hifẓ al-Māl (Asset Preservation). Through a qualitative-conceptual approach, we identify digital technology as a vital wasilah (means). Hifẓ al-Bī'ah is achieved through adopting Print-on-Demand and a Digital Green Supply Chain to reduce waste. Meanwhile, Hifẓ al-Māl is ensured by data analytics for accurate demand forecasting, minimizing idle capacity, and guaranteeing financial transparency. The primary contribution of this research is a holistic framework that unites digital innovation with Sharia ethics, offering a practical roadmap toward maslahah (universal benefit) — creating a printing industry that is not only efficient and profitable but also ecologically and morally responsible.

INTRODUCTION

The printing industry today stands at a crossroads, facing a dual crisis: digital disruption and urgent environmental issues. Environmentally, the sector is pressured by its reliance on wood resources (paper), chemical waste, and high energy consumption. From a business perspective, shifting consumer behavior towards digital media and intense competition from online printing services force companies to transform or face stagnation. This dual challenge demands the printing industry to transition toward more environmentally friendly and technologically adaptive practices (e-commerce, workflow automation).

Technical solutions alone are deemed insufficient; this transformation requires a strong foundation in universal ethics. Therefore, this study is motivated to fill that gap by formulating an innovative Green-Digital Business Model framework based on Maqāṣid al-Sharī'ah (Objectives of Islamic Law), which is oriented towards achieving maslahah (universal welfare) Islam. (Pamungkas et al., 2025)

The primary goal of this research is to develop a model explicitly rooted in two core Maqāṣid pillars: Hifẓ al-Bī'ah (Environmental Preservation) for ecological responsibility and Hifẓ al-Māl (Asset Preservation) to ensure financial efficiency and ethical business practices (Wahyu et al., n.d.)

Through a qualitative-conceptual approach and legal-ethical analysis, this study examines how digital technology functions as a vital *wasīlah* (means). The key findings show that *Hifẓ al-Bī'ah* is implemented through the adoption of Print-on-Demand (PoD) systems and the development of a Digital Green Supply Chain to eliminate excessive waste. Meanwhile, *Hifẓ al-Māl* is reinforced through the use of Data Analytics for accurate demand forecasting (reducing idle capacity) and ensuring operational transparency.

A significant contribution of this research is the presentation of a holistic framework that unites digital innovation with Sharia ethics. This framework offers practical guidance for the printing industry to transition—creating entities that are not only efficient and competitive but also ecologically and morally responsible—setting a new standard for ethical sustainability in media manufacturing

RESEARCH METHODS

Research Approach Framework and Design

This study employs a descriptive qualitative approach with a normative-conceptual framework, reinforced by an empirical Multi-Case Observation Study. This combined design is justified by the need not only to formulate a theoretically grounded model based on ethics (Normative-Conceptual) but also to verify implementation gaps and identify contrasting behavioral patterns in the field (Empirical-Qualitative). This approach ensures that the resulting business model is ethical, contextually valid, and practical for various business scales.

Research Context and Unit of Analysis

The unit of analysis in this study is the behavioral and operational patterns of printing companies related to the implementation of Sharia ethical principles (*Hifẓ al-Bī'ah* and *Hifẓ al-Māl*) amidst digital disruption. The research context focuses on areas where dynamic variations in printing business occur.

This study uses a Multi-Case Observation Study technique with purposive sampling to cover a broad spectrum of the printing industry. The sample includes:

1. Large-Volume Printing: to analyze asset management challenges and macro-scale technology adoption.
2. Small-Scale/Campus Printing: to identify digital cultural resistance and dependence on the local environment.

Respondent Profile

Qualitative data were collected through in-depth observation, internship experience analysis, and potential interviews (implicit in case analysis) involving business actors, operational managers, or staff engaged in strategic and daily operational decision-making.

Data Collection

Data collection was conducted in two main stages:

1. Normative-Conceptual Stage: secondary data collection comprising literature on Maqāṣid al-Sharī'ah, principles of Hifẓ al-Bī'ah and Hifẓ al-Māl, and studies on digital technology and green industry practices to define Sharia ethical criteria in the business model (Inamullah & Lestari, 2023).
2. Empirical Qualitative Stage (Multi-Case Study): primary data were collected through:
 - Direct Observation Study: monitoring waste management patterns (End-of-Pipe solutions), raw material usage (non-vegetable-based inks, availability of FSC-certified paper), and machine energy efficiency efforts. (Pamungkas et al., 2025)
 - Internship Experience Analysis: participatory observation to understand organizational culture, resistance to digitalization, and the role of Gen Z media/content teams.
 - Operational Analysis: identifying digital inconsistencies such as e-commerce limitations, workflow automation, and narrow customer focus.

Analysis and Measurement

The collected data were analyzed using descriptive qualitative methods. The analysis and measurement focus on identifying gaps between Sharia ethical ideals and field realities:

1. Measurement of Hifẓ al-Bī'ah Challenges (Environmental Innovation)
The measurement shifts from End-of-Pipe solutions (legal waste disposal) to upstream prevention and innovation. Indicators include (Anwar & Rozi Anti, 2023)
 - Adoption level of plant-based/vegetable-based inks.
 - Use of FSC-certified paper.
 - Measurable efforts in printing machine energy efficiency.
2. Measurement of Hifẓ al-Māl Challenges (Digital Inconsistencies)
The measurement aims to identify obstacles to revenue and asset optimization, including:
 - Organizational resistance to digital culture.
 - The presence and role of Gen Z Media/Content Teams in following market trends.
 - Dependence on nearby customers (around campuses) as an indicator of potential lost revenue.

Through this multi-case analysis, the study aims to present an adaptive Sharia-Based Green-Digital model for businesses of various scales, ensuring the solutions produced have external validity and practical, ethical contributions.

Results

This study presents a Green-Digital business model that integrates the ethical principles of Maqāṣid al-Sharī'ah with technological innovation, aiming to achieve ecological sustainability and financial efficiency (Ganing et al., n.d.). The findings are grouped based on the role of digital technology as wasīlah (means) and the implementation of the two main ethical pillars.

Role of Digital Technology as Wasīlah (Means)

The main findings confirm that digital technology functions as a vital means (wasīlah) enabling the printing industry to transform and meet Sharia ethical demands. This role is justified by the principles of:

1. Universal Benefit (Maslahah)

Technology provides a platform to align economic gains (efficiency) with environmental protection (waste minimization), achieving broader good.

2. Accountability (Responsibility)

Digitization offers tracking and transparency mechanisms that ensure accountability for resource use and environmental impact.

Implementation of Pillar I: Hifẓ al-Bī'ah (Environmental Preservation)

The Hifẓ al-Bī'ah pillar is achieved through adopting digital-based operational models that directly reduce resource consumption and waste production:

1. Adoption of Print-on-Demand (PoD): PoD eliminates oversupply waste or dead stock, which is a primary source of paper waste in traditional printing. Additionally, PoD reduces the carbon footprint (emissions) related to long-term physical storage needs.
2. Implementation of Digital Green Supply Chain: Integration of a digital supply chain enables route optimization using geospatial data analytics to reduce fuel consumption. It also supports smart raw material management that minimizes chemical waste and the risk of ink expiration.

Implementation of Pillar II: Hifẓ al-Māl (Preservation of Wealth/Assets)

The Hifẓ al-Māl pillar is realized through the use of data technology to improve operational efficiency and ensure financial ethics:

1. Use of Data Analytics for Demand Prediction: Predictive Analytics enables accurate demand forecasting. The result is minimization of idle capacity, where printing machines (key capital assets) operate at optimal utilization levels. This maximizes asset returns and minimizes wasted fixed costs.
2. Reduction of Operational Costs: This efficiency avoids unnecessary storage costs and expenses arising from disposal of unsold printed materials.

Holistic Green-Digital Framework

These findings culminate in the formulation of a Holistic Green-Digital Framework, where Hifẓ al-Bī'ah and Hifẓ al-Māl serve as the main objectives (Maqāṣid), while digital technologies (PoD, Data Analytics, Green SCM) act as wasīlah (means). This framework ensures that financially efficient business transformation is inherently ecologically responsible.

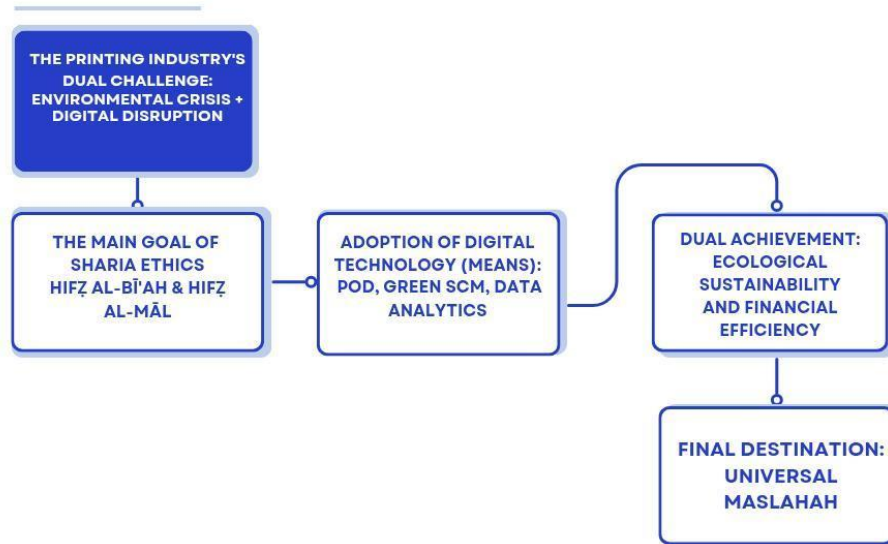
This table aims to present contrasting qualitative data obtained from a Multi-Case Study (Micro vs. Macro Printing) on the implementation of the two pillars of Sharia ethics.

Table 1. Comparison of Printing Behavior Patterns

Indicator	Principles of Sharia Ethics	Micro-Scale Printing (Campus Case)	Macro-Scale Printing (Large Volume Case)	Implementation Gap
Upstream Waste Prevention	Hifẓ al-Bī'ah	Low; Focus on End-of-Pipe (legal waste disposal).	Medium; Limited adoption of PoD or Green SCM.	Minimal Prevention Innovation (Vegetable Ink, FSC Paper)
Digital Culture	Hifẓ al-Māl	Very Low; Organizational Resistance; Considers PoD unnecessary.	Moderate; Partial adoption of e-commerce; Frequent digital inconsistencies.	Dependence on Local Geography; Failure to Optimize Digital Markets
Asset Optimization (Machinery)	Hifẓ al-Māl	Low; The machine is often idle because it only serves walk-in customers.	Medium; Demand Prediction Efforts, but not yet based on advanced data analytics.	High Idle Capacity (Wasted Capital Assets)
Transparency & Accountability	Hifẓ al-Māl & Maslahah	Low; Manual documentation; Minimal carbon footprint tracking.	Moderate; Partial ERP/Accounting system; Limited tracking of inventory.	Lack of Digital Mechanisms for Resource Accountability

"To visually illustrate this holistic framework, Figure 1 presents a flow diagram linking ethical objectives (Maqāṣid), technological means (Wasīlah), and operational outcomes:

Ethical Green-Digital Transformation



Discussion

Theoretical and Ethical Gap Analysis

The dual challenge of digital disruption and the need for sustainability demands a transformative business model for the printing industry. Theoretically, the failure of the conventional model (as observed in Printing Company A – P-A) is caused by the traditional trade-off between profit and ethics. However, the Maqāṣid al-Sharī'ah framework rejects this dichotomy, emphasizing that environmental protection (Hifẓ al-Bī'ah) and asset efficiency (Hifẓ al-Māl) are mutually reinforcing obligations that must be realized in business operations. This principle positions sustainability as a fundamental ethical requirement.

Implementation of Hifẓ al-Māl: Efficiency through Digital Means

Field findings show that asset utility is key to fulfilling Hifẓ al-Māl in this sector. Printing Company A (P-A), which avoids e-commerce, faces significant idle capacity. This condition is ethically categorized as *isrāf* (wastefulness), which is asset misuse contrary to the principle of wealth preservation.

Conversely, the adoption of e-commerce by Printing Company B (P-B) as a *wasīlah* (means) successfully:

1. Increases Asset Utilization: A stable and sustainable stream of single orders minimizes losses from idle machinery assets, directly preserving investment value.
2. Realizes Transparency: Automatic transaction recording on the digital platform enhances accountability and financial transparency, meeting Islamic business ethics requirements for honesty and truthfulness.

Hifẓ al-Bī'ah: Minimizing Ecological Waste

The pillar of Hifẓ al-Bī'ah is realized through a digitally driven operational model. Print-on-Demand (PoD) applied by P-B is a practical manifestation of environmental preservation. PoD implementation:

1. Eliminates Oversupply Risk: This model functions as a fundamental mechanism to reduce dead stock waste, which is the primary source of paper-based pollution in the industry. The digital solution directly mitigates the waste risk inherent in the traditional make-to-stock model (P-A).
2. Fulfills Environmental Responsibility: By prioritizing waste minimization at the beginning of the production cycle, the company proactively meets the ecological responsibility principle mandated by Hifẓ al-Bī'ah.

Holistic Conclusion and Contribution

The proposed Green-Digital model makes an important contribution: it empirically (through the cases of P-A and P-B) and theoretically proves that economic profit (efficiency) is a byproduct of ethical compliance (environmental protection). This synergy, driven by digital technology, eliminates the conventional trade-off. This framework serves as an ethical-financial roadmap for the printing industry to shift from a high-risk model (isrāf) to a responsible digital circular economy, realizing universal benefit (maslahah).

Conclusion

This study successfully formulated a Green-Digital Business Framework that integrates Hifẓ al-Māl (Preservation of Wealth/Assets) and Hifẓ al-Bī'ah (Environmental Preservation) with digital technology in the printing industry. The main conclusion is that digital technology (such as e-commerce and Print-on-Demand) acts as an essential wasīlah (means) that eliminates the traditional trade-off between profit and ethics.

The implementation of the digitally supported Print-on-Demand (PoD) model (as observed at Printing Company B) simultaneously:

1. Realizes Hifẓ al-Māl by maximizing asset utilization (reducing idle machine capacity) and enhancing financial transparency.
2. Realizes Hifẓ al-Bī'ah by eliminating oversupply waste and dead stock risks, which are major issues in the conventional model (Printing Company A).

Thus, the Green-Digital Framework provides an ethical, financially efficient, and ecologically responsible solution for transforming the printing industry.

Bibilography

Anwar, K., & Rozi Anti, A. (2023). Pengelolaan dan Pengembangan Bisnis Percetakan Pada Rumahgrafika Pekalongan dalam Perspektif Etika Bisnis Islam. *Manis: Jurnal Manajemen Dan Bisnis*, 6(2), 81–90. <https://doi.org/10.30598/manis.6.2.81-90>

Inamullah, M., & Lestari, N. M. (2023). Maqashid Syariah Terhadap Keberlanjutan Kehidupan. *Jurnal Ilmiah Ekonomi Islam*, 9(2), 2259. <https://doi.org/10.29040/jiei.v9i2.8437>

Ganing, M., Khatimah, N. K., & Adawiyah, S. U. Al. (n.d.). Inovasi Pengolahan Limbah Kertas untuk Kemasan Ramah Lingkungan di Percetakan Daenk Fajar, Bone.

Pamungkas, S. D. P., Belinda, T. D., & Ramadhani, P. M. I. (2025). Transparansi Informasi Kebijakan Pengelolaan Limbah Industri Guna Mewujudkan Ekonomi Hijau Menuju Indonesia Emas 2045. *Jurnal Pemerintahan Dan Kebijakan (JPK)*, 6(2), 68–82. <https://doi.org/10.18196/jpk.v6i2.22223>

Wahyu, R., Utama, A., Muhtadi, R., Arifin, N. R., & Mawardi, I. (n.d.). Tinjauan Maqashid Syariah DAN Fiqh Al-bi'ah dalam Green Economy. <http://journal.uhamka.ac.id/index.php/jei>