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Activating the Principle "The Default in Things is Permissibility" In Enhancing Digital Food Security in the Food Industry: A Jurisprudential–Informatics Analytical Study

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Abstract: *This research explores the application of the Islamic legal maxim "The default in things is permissibility" in strengthening digital food security within the food industry, in light of the technological transformations shaping the contemporary world. The study highlights the importance of integrating Islamic law with modern technologies, particularly with the rise of smart tracking systems, automated food analysis, and the expanding global halal market. It investigates how this foundational principle can be employed in constructing food information systems capable of classifying ingredients and handling new products within a regulatory framework aligned with both Sharia and health standards.*

The study adopted multiple methodologies—descriptive, inductive, comparative, and applied—and concluded that the principle can be translated into a programming logic within information systems, thereby enhancing regulatory bodies' capacity to support innovation, codify halal food products, and ensure alignment between Sharia objectives and modern safety standards. Practical recommendations were presented for building a Sharia-based food database and developing intelligent decision-support algorithms rooted in this principle.

Keywords: *Islamic jurisprudence, permissibility principle, digital food security, food industry, information systems, artificial intelligence, halal classification, Sharia and technology, processed products, food regulation.*

INTRODUCTION

Food security represents a core pillar of national strategies for ensuring economic and social stability. In the digital age, this issue has become increasingly complex due to the evolution of supply chains, the sophistication of manufacturing processes, and the integration of technologies such as artificial intelligence (AI) and the Internet of Things (IoT) for tracking and evaluating food quality. In this context, there arises a pressing need for a legal and Sharia-compliant framework that keeps pace with these developments and contributes to regulating food products according to Islamic standards—especially amid growing global interest in expanding the halal food market.

Central to this discussion is the well-established Islamic legal maxim: "The default in things is permissibility." This principle is among the most far-reaching and impactful in regulating transactions, especially in dynamic fields such as industry and technology. It establishes that all things are presumed lawful unless a specific Sharia text prohibits them, thereby opening vast opportunities for innovation and development without undue restriction (Al-Zuhayli, 2006).

In the context of the food industry, this principle enhances regulatory agencies' capacity to authorize and assess products without infringing upon Islamic rulings, by relying on precise scientific criteria that evaluate harm and benefit and link physical and informational purity of the product. It also enables the integration of this principle into food information systems to develop smart monitoring mechanisms that analyze product ingredients and classify them automatically as halal or questionable—bridging Islamic law and modern technology.

RESEARCH PROBLEM

The modern food industry faces a complex challenge: it must uphold Sharia rules regarding food permissibility while ensuring quality, safety, and compliance with technical standards.

This demands a comprehensive system of legislation, administration, and oversight.

The Central Research Question is:
How can the Islamic legal maxim "The default in things is permissibility" be activated within the modern informatics framework of the food industry to achieve food security while ensuring Sharia compliance?

Sub-questions Include:
- To what extent does the maxim allow for innovation in modern food products?
- How can exceptions related to harm or impurity in processed foods be managed using food information systems?
- What is the role of this maxim in organizing food databases and automated halal/haram classification?
- What are the practical models that embody this principle within global food tracking systems like GS1 and Codex?

RESEARCH OBJECTIVES
- To provide a juristic and methodological foundation for the maxim "The default in things is permissibility," demonstrating its strength in regulating dynamic aspects of life, particularly modern food industries.
- To clarify the maxim's role in supporting contemporary food security concepts, especially concerning the production and distribution of digitally processed foods.
- To propose a Sharia–informatics framework for applying the maxim within digital food regulation platforms, including halal/haram classification, uncertainty estimation, and setting criteria for prohibition.
- To analyze the challenges of applying the maxim in modern food management systems legally, technically, and institutionally.
- To offer strategic recommendations for Sharia bodies, food manufacturers, and smart system developers, encouraging integration of Islamic law and technology in advancing the halal food sector.

METHODOLOGY
The study used a multi-faceted scientific methodology addressing jurisprudential, informatics, and regulatory dimensions:

1. Descriptive–Analytical Method:
This was used to present and interpret the maxim, its Sharia evidence, application parameters, and exceptions. Sources included classic jurisprudential texts (Al-Zuhayli, 2006; Ibn Taymiyyah, 1995; Al-Shawkani).

2. Inductive Method:
Contemporary applications of the maxim were traced in processed food production, including smart manufacturing, packaging, monitoring, and food databases. Models from Islamic countries and global health organizations (WHO, 2021; EFSA, 2022) were analyzed.

3. Comparative Method:
Islamic food policy based on legal maxims was compared with modern regulatory systems like GS1, HACCP, and ISO 22000 to identify convergences and divergences in standards and procedures.

4. Applied Practical Method:
The feasibility of designing a decision support system (DSS) that incorporates the maxim was studied. The system would evaluate food ingredients using AI and machine learning based on permissibility and safety data.

FINDINGS

The study revealed several fundamental jurisprudential and informatics-based insights for implementing the maxim in modern food security systems:

- The maxim is adaptable and technologically applicable, providing a robust Sharia tool that permits the use of new food ingredients unless proven harmful or prohibited. It supports innovation and product development (Al-Zuhayli, 2006; Ibn Taymiyyah, 1995).
- Sharia permissibility can form the basis for intelligent food classification systems, allowing AI-supported platforms to automatically evaluate ingredient permissibility based on verified databases.
- Harm is the principal constraint on permissibility. It can be measured through sensor technologies and analytical intelligence in production lines, enabling informed implementation (WHO, 2021; EFSA, 2022).
- The maxim supports jurisprudential governance of modern food issues by allowing broader halal classifications for complex processed products, aiding the expansion of halal supply chains without premature prohibition.
- The maxim can be converted into an algorithm used in food quality systems and consumer apps to guide users toward permissible and safe products.

DISCUSSION

The discussion highlights several key dimensions:

1. Linking Jurisprudence and Food Information Management:
Modern technologies in food analysis and smart monitoring make it possible to digitize the maxim. Integrated databases can distinguish between permissible and impermissible items and update rulings based on real-time data (Gibney et al., 2013).

2. Informatics Challenges in Applying Permissibility:
Difficulties include verifying raw material sources and assessing whether chemical reactions nullify or preserve impermissible traits (e.g., pork or alcohol). Collaboration between scholars and food scientists is vital (Fewtrell et al., 2011).

3. Maqasidic Dimension—Preserving Life and Religion:
Applying the maxim in this context fulfills two higher objectives: safeguarding life by ensuring food safety and protecting religion by avoiding forbidden or harmful items (Ibn al-Qayyim, 1423 AH).

4. Supporting Halal Food Innovation:
The maxim legitimizes new halal food projects such as plant-based meat alternatives, halal infant supplements, and therapeutic meals for diabetics, provided they are safe and Sharia-compliant (FDA, 2021).

CONCLUSION

The study confirms that "The default in things is permissibility" is a foundational principle that can address the challenges of digital food security and food information management. It not only legitimizes new food technologies and ingredients but also offers a logical and methodological base for digital classification systems that evaluate products according to Islamic and scientific criteria.

Integrating this maxim with smart food analytics (AI, automated chemical analysis) enables the creation of a hybrid "Sharia–nutrition" database. This database allows regulatory bodies to issue rapid judgments on product permissibility using dynamic, verified data.

The maxim also demonstrates Islamic jurisprudence's capacity to adapt to industrial and informational shifts, provided that collaboration between scholars and technologists is institutionalized.

RECOMMENDATIONS

- Develop unified Islamic food databases categorizing ingredients by permissibility, updated in cooperation with jurisprudential and scientific institutions.
- Integrate the maxim into digital food control regulations, embedding it in regulatory software and decision support tools.
- Promote joint research between jurists and IT engineers to build smart algorithms that interpret fatwas and classify food ingredients.
- Train food industry professionals on Sharia compliance in food innovation, particularly concerning additives and chemical reactions.
- Support halal digital food industries that adhere to the permissibility principle and provide transparent data for intelligent Sharia audits.

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