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MAQASID SYARIAH AND DIGITAL TRANSFORMATION OF HALAL SUPPLY CHAIN WITH GOVERNANCE ELEMENTS

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Abstract

This study explores integrating Maqasid Syariah principles and digital transformation in halal supply chain governance. In addition, this study aims to enhance transparency and accountability in the halal industry, ultimately leading to consumer trust and confidence. A qualitative research approach is employed to investigate the complex and multifaceted issues of digital transformation and Halal supply chain governance. Data are collected using individual interviews and focus group discussions with Halal industry experts, including Halal experts from the Halal certification bodies and organisations that have successfully integrated Maqasid Syariah principles and digital transformation into their operations to enhance their Halal supply chain governance. This study provides valuable insights into the current state of Halal supply chain governance in Malaysia and the potential effects of digital transformation on Halal supply chain activities. Integrating Maqasid Syariah principles helps ensure that the halal supply chain is governed ethically and following Islamic principles, contributing to ongoing efforts to strengthen the halal industry and ensure its sustainability.

Keywords: Halal Governance, Maqasid Syariah, Digital Transformation, Halal Supply Chain, Qualitative Research Approach

1. Introduction

Halal governance principles are rooted in Islamic teachings, and their main purpose is to ensure that products and services adhere to Islamic halal guidelines. It applies to all aspects of Muslim life, including food, behaviour, and business practices, with guidelines on honesty, integrity, and fairness in all transactions (Azam & Abdullah, 2020). Muslims fulfil Halal requirements to achieve the five highest objectives based on the Islamic teachings, Maqasid Shariah. Based on the Al-Qaradawi (2009), the five Maqasid Shariah are (1) preservation of religion (Hifz al-Din), (2) preservation of life (Hifz al-Nafs), (3) preservation of intellect (Hifz al-Aql), (4) preservation of lineage (Hifz al-Nasl), (5) preservation of property (Hifz al-Mal). Hence, integrating the principles of Maqasid Syariah into studying Halal governance is essential not only to fulfil the Shariah requirements but to promote sustainability and environmental responsibility (Hasan et al., 2022) and enhance transparency and accountability of the Halal industry players.

Since the Islamic management principles and values are based on the Quran and Hadith, it is hopeful that it promotes excellent strategies suitable for the realm and ecosystem of Halal governance, which elevate the prospects of Halal governance amelioration in Malaysia to reach the status of the most efficient Halal global leader (Zain & Zakaria, 2022). Halal governance based on the Quran and the Hadith aims to ensure that the production and delivery of halal products and services comply with Islamic principles. This is important because these principles create the values and uphold the beliefs of Muslims and are considered essential for leading a virtuous life. However, using new technologies often implies changes in value creation (Chandra et al., 2019; Tan et al., 2022; Wahyuni et al., 2021). A digital halal supply chain provides substantially greater visibility into certification and transactions across the supply chain than traditional siloed and linear halal supply chains. Digital transformation can significantly improve the accountability and transparency of the halal supply chain. Halal governance is critical to ensuring digital systems and processes align with Islamic principles.

The agent theory provides a framework for understanding the relationships between the different stakeholders in the halal supply chain. Establishing a digital transformation framework requires the collaboration and cooperation of these critical stakeholders. Beal Partyka (2022) discusses the agency problem from an agency theory perspective in the context of different types of supply chains, including those in the food industry. According to Beal Partyka (2022), the main agency problem in the halal supply chain is to align the interests of the different actors to maintain the halal certification while ensuring the quality, safety, and ethical standards of the products. Malaysia's Halal Traceability System (MHTS) can be considered a mechanism for executing halal governance of the supply chain, but illegal activities can still occur despite its presence. Therefore, the central agency problem in the halal supply chain is to align the interests of the different actors to maintain the halal certification while ensuring the products' quality, safety, and ethical standards. The development of a digital transformation framework for the halal supply chain, as per Maqasid Syariah Principles, should aim to improve the governance of the supply chain by increasing transparency and accountability and reducing the risk of scrupulous businesses and individuals prospering through cutting corners, cronyism, or corruption. Therefore it is crucial to preliminary investigate the issues of Halal governance to develop an integrated framework of Halal governance with Maqasid Shariah Agency theory and Digital Transformation.

2. Literature Review

2.1. Halal Ecosystem

Consuming halal is an order of Allah and a fundamental part of the Islamic faith. Allah has repeatedly emphasised the need to consume halal food and services and act ethically in the Quran. "O Messengers, eat from the pure foods and act righteously" [Chapter 23, Verse 51]. The verse expresses the divine commandment using two crucial words: "halal" and "toyyib". Muslims must ensure that they live in this world and consume food that adheres to a rigorous halal standard. Over the past few years, halal food items have become popular amongst Muslim and non-Muslim consumers as they have evolved from an indication of religious observation to an assurance of food safety, hygiene, and reliability.

Malaysia offers a complete halal ecosystem. Malaysia's credibility and leadership in the halal sector are also recognised by the Organization of Islamic Cooperation (OIC). JAKIM (Department of Islamic Development Malaysia) halal certification is internationally recognised as a standardised logo and certification system approved by all Muslim nations. The iconic Malaysia Halal logo is the most demanded, globally-recognized hallmark that emblems the country's reputation as the world's leading halal hub. Malaysia's Halal Development Corporation (HDC) was also established under the Ministry of International Trade and Industry (MITI) in 2006 to lead the development of Malaysia's integrated and comprehensive halal ecosystem and infrastructure to position Malaysia as the most competitive country leading the global halal industry.

2.2. Halal Governance

The global issues of halal governance encompass its entire supply chain and refer to the challenges in establishing a unified and widely recognised system for certifying and regulating products considered halal or permissible according to Islamic law. These challenges encompass the entire supply chain and are part of the global issue of halal governance. According to Abdallah et al. (2021), the Halal industry encounters various difficulties, such as certification, labelling, and supply chain management problems. In certain regions, like the Middle East and Southeast Asia, government agencies supervise the halal certification procedure and ensure it adheres to applicable laws and regulations. Following Othman et al. (2016), while private organisations in Europe and North America are responsible for halal certification, they may have varying standards and procedures compared to other regions. The halal certification market needs to be more cohesive and precise due to the need for a single international standard. Various organisations offer their certifications. As Johan and Schebesta (2022) indicated, the Halal industry needs help maintaining compliance with Halal standards and establishing consumer trust. These challenges arise from the market's fragmentation and the various certification standards different organisations provide. Government regulations and international organisations such as the Organisation of Islamic Cooperation (OIC) should address these issues and promote the growth of the halal industry (Johan & Schebesta, 2022). The presence of conflicting standards, a lack of transparency in the certification process, and concerns over the credibility of certifying organisations can result in problems.

A standardised halal governance system is becoming more crucial as global demand for halal products increases. It is imperative to address this matter to ensure consistency and reliability. According to a Halal Food Market report, the global halal food market will have a value of $1,978 billion in 2021. The market is projected to reach US$ 3,907.7 billion by 2027, with a compound annual growth rate (CAGR) of 11.24% from 2022 to 2027 (Imarcgroup, 2021). According to Husin et al. (2021), Malaysia has a strong presence in the halal industry and boasts a robust halal governance system to oversee its supply chains. According to Husin et al. (2021), Malaysia has made significant efforts to promote halal certification and governance through the establishment of the Halal Industry Development Corporation (HDC) and the Department of Islamic Development Malaysia (JAKIM). The authors provide an overview of the halal industry in Malaysia and its current state. However, the country still needs to overcome certain obstacles and concerns in maintaining the authenticity of its halal supply chains. According to Fuseini et al. (2017), companies have been accused of using non-halal ingredients or making false halal claims to increase profits. This has caused distress among Muslims, potentially leading to a loss of trust and damaging the companies' reputations. Despite the issues highlighted in the literature, it is crucial to preliminary investigate the actual issues of Halal governance so that a framework can be developed to mitigate them.

2.3. Digital Halal Supply Chain

The contemporary understanding of Halal has transcended its religious connotations and evolved into a multifaceted concept with broader implications. The current consensus among Muslim and non-Muslim populations globally is that halal certification has become the norm (Mathew et al., 2014). This shift in perception has been attributed to the evolution of halal certification from a marker of religious identity to a reliable indicator of food safety and hygiene (Masood & Rahim, 2019).

Henceforth, it is imperative that the modalities for overseeing and regulating the governance protocols within the halal supply chain exhibit efficacy and efficiency (Zain & Zakaria, 2022). The exigency for a proficient and productive surveillance and regulation mechanism has been amplified due to the advent of digital technology, which significantly influences the modus operandi. As previously stated, the advent of digital technology has significantly impacted the methods employed for monitoring and controlling religious institutions, including those responsible for overseeing the Halal Supply Chain (Kasim et al., 2021). However, the current state of knowledge regarding the execution of technology's impact on governance within the Halal Supply Chain needs to be improved. Therefore, researching to gain a deeper understanding of this phenomenon is a valuable pursuit.

In the current digital epoch, the supply chain has transformed from its initial version, 1.0, to the latest version, 4.0 (Frazzon et al., 2019). This evolution has been facilitated by the integration of various cutting-edge technologies such as the Internet of Things, advanced robotics, big data analytics, 3D printing, autonomous robotics, intelligent sensors, augmented reality, artificial intelligence, and cloud computing into the supply chain management system (Ferrantino & Koten, 2019). The implementation of digitalisation in the supply chain has the potential to increase transparency and accountability to users within the enterprise. The concept of digital transparency is often perceived as a cost-effective and practical approach to acquiring knowledge about governmental procedures and determinations, as per the

findings of Matheus et al. (2021). Furthermore, the Halal supply chain governance is a crucial aspect in verifying the authenticity of Halal products and services, as highlighted by Khan et al. (2018).

The Department of Islamic Development Malaysia (JAKIM) has implemented various technological advancements to enhance the halal governance of the supply chain. The Malaysia Halal Traceability System (MHTS) is a centralised tracking system for halal products. This system can provide real-time information, as reported by Ab Rashid and Bojei in 2019. As per the findings of Kamarulzaman et al. (2022), it can be inferred that the development of MyEhalal aimed to simplify the process of obtaining halal certification from JAKIM, as reported by Arif Abu Bakar et al. (2019). Additionally, using QR code technology in the SmartHalal App and Verify Halal App, as stated on the JAKIM official website, provides consumers with effortless and accessible information regarding the halal status of products. Implementing novel technologies, including blockchain and artificial intelligence, is imperative for digitalising the halal supply chain process. This will facilitate the establishment of a halal governance system that is more dependable, efficient, and impregnable.

As mentioned above, the assimilation of technologies within the halal industry may be less pervasive than in other sectors, resulting in a dearth of progress in managing the halal supply chain. According to the Economic Planning Unit (2021), it is projected that the halal market will make a significant contribution of 8.1% to the country's GDP by 2025, with an estimated export value of RM56 billion. The circumstance above has catalysed reinforcing legal and regulatory frameworks to ensure all halal market operations' proficient and effective administration. The contemporary understanding of Halal has transcended its traditional religious connotation and has evolved into a multifaceted concept with broader implications. The consensus among Muslim and non-Muslim populations is that halal certification has become the preferred norm (Mathew et al., 2014). This shift in perception can be attributed to the evolution of halal certification from a marker of religious identity to a reliable indicator of food safety and hygiene (Masood & Rahim, 2019).

Henceforth, the modalities for overseeing and regulating the governance protocols within the halal supply chain must be both efficacious and streamlined. The imperative for a proficient and productive monitoring and control mechanism is heightened by the advent of digital technology, which substantially influences how work is executed. As previously indicated, digital technology has significantly impacted the methods employed for monitoring and controlling religious institutions, including those responsible for overseeing the Halal Supply Chain. However, even with extant literature, scant empirical research exists regarding technology's operationalisation in shaping governance within the Halal Supply Chain. Therefore, it is imperative to undertake a comprehensive investigation to elucidate the intricate dynamics involved.

The governance of the Halal supply chain is a crucial aspect in verifying the authenticity of Halal products and services, as stated by Khan et al. (2018). The Department of Islamic Development Malaysia (JAKIM) has implemented various technologies to enhance the halal governance of the supply chain. For example, the Malaysia Halal Traceability System (MHTS), a centralised tracking system for halal products, has been adopted to provide real-time information (Ab Rashid & Bojei, 2019; Kamarulzaman et al., 2022). Additionally, MyEhalal has been developed to simplify the application process for halal certification from JAKIM (Arif, Abu Bakar, et al., 2019). Furthermore, the SmartHalal App and Verify

Halal App have been introduced, utilising QR code technology (JAKIM official website) to offer consumers easy and convenient access to information regarding the halal status of products. Implementing novel technologies, including blockchain and artificial intelligence, is imperative for digitalising the halal supply chain process. This will facilitate the establishment of a halal governance system that is more dependable, efficient, and secure.

Nevertheless, the assimilation of these technologies within the halal industry may not be as pervasive as in other sectors, resulting in a dearth of progress in the halal supply chain management domain. According to the Economic Planning Unit (2021), it is projected that the halal market will make a significant contribution of 8.1% to the country's GDP by 2025, with an estimated RM56 billion in exports. The circumstance above has reinforced legal and regulatory frameworks to ensure the efficient administration of all halal market endeavours.

2.4. Maqasid Syariah and Agency Theory

Incorporating Maqasid Syariah principles and Agency Theory into the governance of the digital halal supply chain can enhance adherence to Islamic principles and protect the interests of both Muslim and Non-Muslim consumers. Within the digital halal supply chain context, the Maqasid Syariah serves as a fundamental basis for ensuring adherence to Islamic principles and establishing ethical and moral guidelines for all parties involved in the supply chain. As such, it plays a crucial role in shaping the overall governance framework, as Zain and Zakaria (2022) noted. Establishing accountability mechanisms is imperative for effectively operating the digital halal supply chain. Implementing a system of accountability among all stakeholders is crucial in ensuring their adherence to prescribed actions and decisions, thereby facilitating the attainment of Maqasid Syariah, as Hashim et al. (2022) posited. Implementing transparency measures enhances consumer agency in making informed decisions and bolsters stakeholder trust. This technology has been observed to enhance adherence to Maqasid Syariah through streamlining compliance monitoring and identifying potential issues, as Matheus et al. (2021) noted. The principle-agent theory constitutes a valuable conceptual framework for comprehending the intricate dynamics that underlie the interplay between principals and their agents within an organisational setting.

The theoretical framework can be effectively operationalised within the halal supply chain domain to facilitate the augmentation of governance, accountability, and transparency via digital transformation. The initial phase entails identifying diverse principal-agent relationships within the halal supply chain. The present study examines the interrelationships among halal consumers, industry players, certification bodies, and government regulators. Upon identifying the principal-agent relationships, it is imperative to analyse each stakeholder's respective roles and responsibilities thoroughly. In the halal supply chain, many agents are implicated in producing and disseminating halal commodities, encompassing slaughterhouses, food manufacturers, distributors, and retailers. Differentiated interests and motivations between agents and principals can give rise to agency predicaments, resulting in non-adherence to halal mandates or unethical conduct. The implementation of digital transformation has the potential to mitigate these challenges by enhancing accountability and transparency. Implementing digital transformation can enhance accountability and transparency in government financial practices by providing real-time data

and information, deploying comprehensive financial management systems, and augmenting public access to information. According to Ariesmansyah et al. (2021), digital transformation can enhance financial accountability and transparency in government practices by providing real-time data and information.

2.5. Conceptual Framework

In conclusion, a proposed conceptual framework (Figure 1) for digital halal supply chain maturity for effective governance has been proposed based on the literature reviews. An organization could use the Maqasid Shariah to identify its ethical and social objectives and then apply agency theory to design governance structures that align with these objectives. The digital transformation framework could assess the organization's technological capabilities and identify opportunities for digital innovation that support its objectives. Finally, accountability and transparency could be embedded in the organization's governance structures and reporting mechanisms to ensure it acts responsibly and ethically.
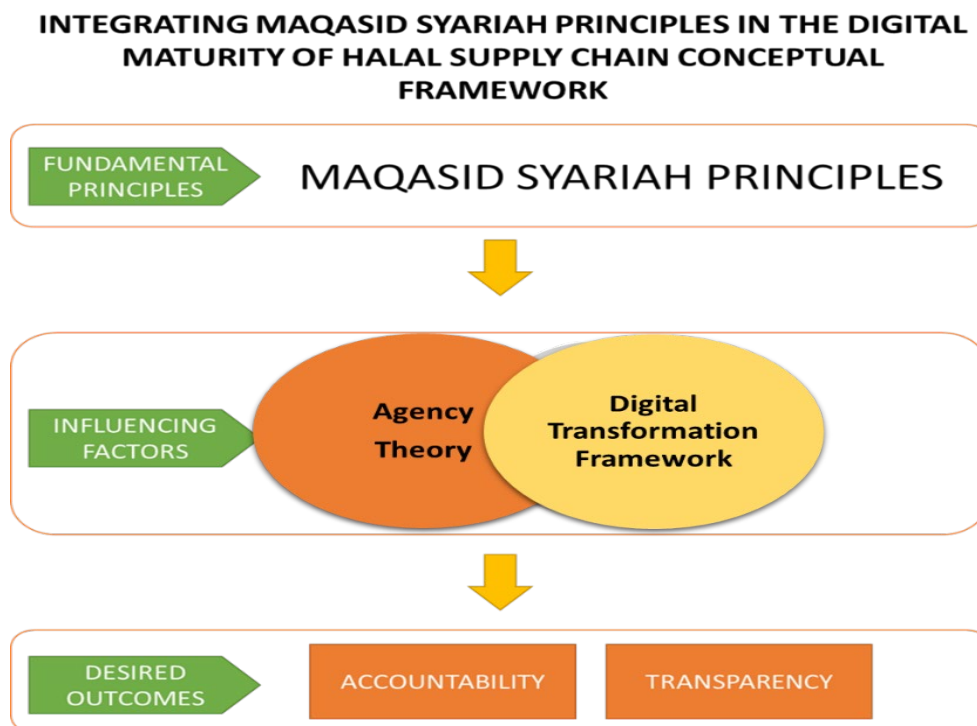

Figure 1. Maqasid Syariah Principles

3. Methodology

3.1. Introduction

This study reviews the literature on digital transformation's role in improving halal supply chain governance by Maqasid Syariah Principles, including the potential benefits and challenges of implementing IR 4.0 technologies in this context. A qualitative approach could be appropriate for this topic as it allows for an in-depth exploration of key stakeholders' perceptions, attitudes, and experiences within the halal supply chain, such as industry experts, suppliers, manufacturers, and consumers. This

study can provide valuable insights into the industry's challenges and opportunities in digitalisation and governance and inform recommendations for future improvements.

3.2. Research paradigm

A qualitative study would be appropriate for researching the digital transformation of the Halal supply chain to enhance governance. A qualitative study would allow for an in-depth exploration of the complex and multifaceted issues related to digital transformation and governance in the Halal supply chain. This approach would enable researchers to understand stakeholders' experiences, attitudes, and perceptions in the supply chain (Muneeza & Mustapha, 2021). Qualitative research methods can be used to develop new theories or refine existing ones, which would help advance knowledge about digital transformation and governance in the Halal supply chain in accordance to Maqasid Syariah Principles. Qualitative data can be used to identify patterns and themes, which can then be used to develop theoretical frameworks to guide future research or practice (Zain & Zakaria, 2022).

3.3. Research design

The digital maturity of the Halal supply chain is a complex issue involving multiple stakeholders and interactions. A case study approach and agent theory offer strengths for research, providing detailed analysis of specific cases and insights into the impact of digital maturity on governance. This approach explores real-world problems and issues, allowing a holistic understanding of digital maturity's impact on governance (Azmi et al., 2021; Zain & Zakaria, 2022). The agent theory provides a theoretical framework for analyzing relationships between stakeholders in the Halal supply chain, ensuring a rigorous and systematic research approach.

3.4. Research stages

This study will be conducted in two stages.

A) Stage 1:

Problem statement:

The first stage is clearly defining the problem the research aims to address. This stage involves identifying the challenges and gaps in the current halal supply chain governance and the potential benefits of digital technology in improving it.

Preliminary interviews:

The first stage involved using preliminary interviews to develop comprehensive research objectives that analyze the digital transformation of the digital halal supply chain to strengthen the governance of the halal ecosystem, particularly in terms of accountability and transparency. The preliminary interviews were conducted with a representative from Halal Development Corporation (HDC), a Halal Integrated Platform department business analyst, on August 8, 2022, and also with the Deputy Director of Sekretariat Majlis Halal Malaysia of JAKIM on September 24, 2022.

Literature review:

The first stage is also to review the existing literature on Maqasid Syariah principles, halal supply chain governance, digital transformation, and the intersection of the two. Literature on agency theories that can support the integration of Maqasid Syariah principles into digital transformation of halal supply chain was also reviewed. The data will be analysed using the systematic literature review method. Based on the systematic literature review findings, researchers can develop interview protocols that focus on the most relevant and essential topics related to the research question.

Conceptual framework:

Development of a conceptual framework that outlines the key factors and relationships involved in the digital transformation of the halal supply chain and its impact on governance. This stage provides a roadmap for the research and guides the data collection and analysis process.

B) Stage 2:

Data Collection:

Data will be gathered in different ways, such as through surveys, interviews, case studies, or the analysis of secondary data. The data collected should be useful for the conceptual framework and give information about how digitally mature the halal supply chain is and how that affects governance.

Data Analysis:

The data will be analyzed to identify patterns, relationships, and trends.

Results and Findings:

The second stage is also to present the results and findings of the data analysis in a clear and concise manner. This stage should provide insights into the digital transformation of the halal supply chain and its impact on governance, and it should also address any research limitations and future research directions.

Conclusion and Implications:

The final stage is to draw conclusions and implications from the results and findings and to provide recommendations for the halal supply chain industry and policymakers. This stage should also discuss the broader implications of the research for the fields of supply chain governance and digital technology.

4.   Preliminary Findings and Discussions

JAKIM, Deputy Director of Sekretariat Majlis Halal and business analyst of the Halal Integrated Platform from Halal Development Corporation (HDC), have been interviewed as part of the initiative to strengthen the proposal for a digital halal supply chain maturity framework for halal ecosystem governance. Some results of the interviews exhibited the same consistency. Officers in charge of JAKIM and HDC believe that there are currently considerable differences in the levels of digital transformation between MNCs and SMEs involved in the halal supply chain. MNC businesses typically perform better when it comes to digital transformation. JAKIM now uses a semi-digital certification procedure for halal products. Applicants must apply for Malaysian halal certification through the MyEHalal online system. After reviewing their application, the applicant must submit hardcopy documents to JAKIM.

Not all Malaysian halal certification applicants have an excellent technological infrastructure, such as internet accessibility, especially in rural areas. For example, during the lockdown during the COVID-19 pandemic, JAKIM conducted remote audits (online audits) and used the Google Meet application and others. However, some constraints caused the audit to run poorly, as the limited and poor level of internet accessibility caused the session to be obstructed by audits and the display of images that are not clear, as well as the issue of lack of digital literacy for some applicants, who are mainly SME entrepreneurs in rural areas. HDC offered SMEs training and awareness on the importance of obtaining domestic and international halal certificates to explore opportunities to become multinational corporation (MNCs) suppliers. HDC also introduced the Halal Integrated Platform (HIP) to enable SME businesses with the competitive edge to tap into the growing halal industry digitally. However, the overall rate of digital adoption by SME businesses could have been more encouraging due to a lack of digital literacy, inadequate technology infrastructure, and SME business owners' lack of conviction in digital transformation. According to the JAKIM officer in charge, the majority of businesses in Malaysia have different levels of digital literacy, which makes it challenging to implement a digital halal supply chain. As part of Malaysia's halal certification requirements established by JAKIM, halal executives (for MNCs) and halal supervisors (for SMEs) are required for Malaysia's halal business operators. Future digital halal supply chain operations may be influenced by how well-versed in digital literacy halal executives and supervisors are.

Nevertheless, most MNCs have already begun digitally transforming their operations. However, SME systems could be more organised, have minimal exposure to technology, and most still use manual systems for managing company data and documentation. JAKIM also emphasised that to ensure the success of the company's digital transformation, Malaysia's IT infrastructure must be upgraded in line with all digital initiatives. JAKIM and HDC acknowledged that the Digital Halal Supply Chain enhances the halal ecosystem's performance governance. Digital transformation of the supply chain can also improve governance and enable JAKIM to respond more effectively to halal certification requirements. Malaysia is also trying to dominate the global halal market. Technology can also provide better transparency to preserve the halal integrity of products and services used by all users. JAKIM's digital initiatives include the Malaysian Halal Portal, the Smart Halal application, and the Verify Halal application, which has been created to help make it easier for users to check and verify the halal status of companies, food and beverage products, food premises, consumables, pharmaceuticals, and others that have been halal certified in Malaysia. According to HDC, digitalisation enables organisations to manage data more effectively, which might be advantageous for the future decision-making process and planning of Malaysia's halal industry. Based on this preliminary investigation, there is still a dearth of research in Halal governance. Hence, further research is strongly recommended in this area.

5. Conclusion

Several fundamental distinctions exist between a conventional supply chain and supply chain 4.0. Supply chain 4.0 integrates IR 4.0 technologies, resulting in increased supply chain efficiency. As emphasized in the preliminary interview with JAKIM and HDC, the readiness of the technology infrastructure and digital competencies are common obstacles. To comprehend the actual challenges of

the transformation of the halal supply chain, additional research is required. However, these obstacles are disguised opportunities. In order to create an effective Digital halal supply chain transformation framework from the outset, understanding these challenges can give halal business actors a competitive advantage and provide strategies for addressing current and future challenges.

Developing a comprehensive digital transformation framework that incorporates Maqasid Syariah principles can aid in enhancing halal supply chain governance. This can enhance transparency and accountability, thereby increasing consumer confidence in halal products. Global demand for halal products is rising, resulting in a burgeoning halal industry. By providing a framework for more efficient halal certification and traceability solutions, the development of a comprehensive digital transformation framework can support the growth of the halal industry. A digital transformation framework will transform traditional, linear supply chains into digitally connected supply chain networks where information on halal certification and any transaction across the entire supply chain can be accessed rapidly and in real-time, thereby enhancing halal governance. In addition, a comprehensive digital transformation framework can help halal businesses become more competitive by enhancing their ability to comply with regulatory requirements, reducing costs, and boosting customer satisfaction.

The development of a comprehensive framework for digital transformation can contribute to the corpus of knowledge on halal governance and supply chain management. This can further research in these areas and inform policy and practice in the future. In conclusion, the study will identify crucial aspects of the digital transformation process that only some researchers have looked into, such as the conjunction of digital transformation and digital maturity level. Kasim et al. (2021) also emphasized the need for more existing research that addresses supply chain management practices from an Islamic perspective that adheres to Maqasid Syariah's fundamental principles.

As a conclusion, integrating the Maqasid Syariah principles and digital transformation from the agency theory perspective into the halal supply chain can provide a holistic approach to halal governance. By incorporating the Maqasid Syariah principles such as justice, transparency, and accountability into the digital transformation of the halal supply chain, halal governance can be improved, and agency problems can be effectively mitigated. This can enhance consumer trust in halal products and services and promote ethical and sustainable business practices within the halal industry. Halal industry players and policymakers must understand the significance of integrating Maqasid Syariah principles and digital transformation to ensure the halal supply chain's compliance with Islamic principles and global standards.

Acknowledgment

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