

EXPLORING HALAL SCIENCE RESEARCH: DO THEY MEET THE TAWHIDIC PARADIGM? DO THEY NEED ISLAMIZATION OF KNOWLEDGE?

Yumi Zuhani Has-Yun Hashim^{1a*}, Anis Najiha Ahmad^{2b}, Izzah Az-Zahra Ahmad^{3c},
Nurhusna Samsudin^{4d} and Phirdaous Abbas^{5e}

^aInternational Institute for Halal Research and Training (INHART), International Islamic University
Malaysia (IIUM), 53100 Kuala Lumpur, MALAYSIA

E-mail: yumi@iium.edu.my¹

^bInternational Institute for Halal Research and Training (INHART), International Islamic University
Malaysia (IIUM)

E-mail: anisnajiha@iium.edu.my²

^cIndependent Researcher

E-mail: izzahazzahra.ahmad@gmail.com³

^dInternational Institute for Halal Research and Training (INHART), International Islamic University
Malaysia (IIUM),

E-mail: nurhusna@iium.edu.my⁴

^eInternational Institute for Halal Research and Training (INHART), International Islamic University
Malaysia (IIUM),

E-mail: phirdaous.abbas@gmail.com⁵

*Corresponding Author: yumi@iium.edu.my

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ABSTRACT

In recent years, the innovations in halalan toyyiban (HT) products and services have been fueled by science and technology to meet the emerging needs of humanity. This has partly contributed to the expansion of halal and its industry into various sectors that benefited many. However, there is a growing concern that the halal industry is riding on the religious platform to gain economic benefits while losing faith-bound values. The so-called halal science research fueling the innovation of the industry is argued to be undertaken without the true understanding of it being a branch of Islamic science thus not operating in the tawhidic paradigm. Therefore, the aims of the study are to i) identify Islamization elements in halal science research, and ii) to propose the measures to conduct halal science research based on the tawhidic paradigm. A total of 14 dissertations (2017-2021) of Master in Halal Industry Science (MSHIS) are investigated. Other secondary sources including journals, books, electronic sources and documents related to the academic program are also referred. Data is evaluated from the Islamic perspective through the process of relevantization, integration and harmonization. Aspects related to the Sustainable Development Goals (SDGs), science and technology framework, academic program standards, institutes (faculties), and universities framework were also mapped in the analysis to provide a holistic view, deeper insights, and informed perspectives that contribute to a more nuanced understanding of halal science research. It was observed that the MSHIS dissertations contain some elements of halal science

research. However, the elements of tawhidic-based halal science are elusive hence the need for appropriate Islamization of knowledge efforts in realizing the 'true' halal science research. Maqasid methodology approach, along with the establishment of key concepts related to halal science is proposed as part of the Islamization of knowledge efforts in halal science research. To this end, this work shall be able to guide researchers in the halal science research area to conduct their research based on the tawhidic paradigm leading to the development of the wholistic HT products and services that meet the HT criteria, and the creation of HT-related knowledge nestled in the tawhidic paradigm.

Keywords: Halal science, tawhidic paradigm, halalan toyyiban, halal academic program

1. INTRODUCTION

Halal is an Arabic word defined as permissible or legal according to Shari'ah. The opposite of halal is haram which is defined as prohibited or forbidden. Complementary to halal, the concept of toyyib is referred to as clean, wholesome, and beneficial. Together, this constitutes the wholistic term of halalan toyyiban (HT) denoting the status of halal with embedded values of high quality, safety, and integrity. The concept of halal and HT above is the culmination of concepts and elaborations provided by many scholars; one most prominent referral point is Dr Yusuf al-Qaradhawi's book entitled "*Al-Halal wa al-haram fi al-Islam*" (Al-Qaradhawi, 2015).

Embracing and practicing halal are faith-based actions which require the HT products and services to be available for everyone to adhere to a halal lifestyle and living. In the modern world, HT products and services are manufactured and or provided in masses, creating the so-called halal industry. As the global Muslim population is growing and so is its demand for HT goods and services. The HT products are also appealing to all regardless of religion due to their elements of quality, safety, and wholesomeness. In 2021 alone, Muslims spent USD2 trillion on HT goods and services in six major economic sectors (halal food, Islamic finance, halal travel, halal pharmaceutical, halal media and recreation, halal cosmetics and modest fashion), with USD254 billion in halal goods traded, and this figure is projected to reach USD2.8trillion by 2025 (Dinar Standard, 2022).

The expansion of halal and its industry into various sectors (other than food as a readily visible sector for halal) certainly has many positive socio-economic returns. However, there is a growing concern that it is riding on religious platforms (intentionally or unintentionally) to gain economic benefits while losing the faith-bound values. In the world of capitalism, one could arrive at this standpoint from observing the recent aggressive diversification of halal

economic sectors (as described above) to gain economic returns, against the fact that halal has been inherently present in all aspects of life as commanded by Allah s.w.t. in the Qur'an, revealed more than 1400 years ago. The halal market has in fact been touted as a lucrative market for the industry to venture (Rarick et al., 2012). While economic success in Islam is commendable, it is upsetting that the processes and what more the intention could have been derailed from abiding by Islamic principles.

In recent years, the innovations in HT products and services have been fueled by science and technology to meet the emerging needs of the people. Academic and training programs are developed to educate and nurture the so-called halal talents i.e., the human capital to meet the demand of the halal industry (Rafida et al., 2013; Deuraseh et al., 2022). More recently, in Malaysia, two main bodies of knowledge for halal-related academic programs or studies have been identified to assist in this capacity building, i) management, and ii) applied science (Malaysia Qualifications Agency, 2022).

The components of management in halal studies are clear and readily agreeable by various stakeholders in the halal fraternity (from students, program provider to employers and authorities), however, the components of science in halal (termed as halal science) received diverse feedback and some criticisms. The opponents argued the name and the concept of halal science is misleading such that it does not fit as an independent discipline like any other standard academic discipline definitions coming from the West (such as biology, biotechnology, engineering and many more). This opinion stated that halal science does not or could not contribute to the creation of new knowledge or prove a hypothesis since it is tied to the fundamentals of the Qur'an and Sunnah (Tariqur Rahman, 2021). In contrast, the proponents of the concept of halal science contended that halal science is a branch of Islamic science that works based on three important elements of i) the oneness of Allah s.w.t. (tawhid) as the main pillar, ii) Islamic revelation (wahyu) as a core source of reference, and iii) role of humankind as vicegerent (khalifah) of Allah s.w.t. in managing and using the HT products and services (Said & Hanapi, 2019; Said & Hanapi, 2018).

The proponents of halal science appreciate that the concept is a very important element in the modern halal ecosystem. Definitions of halal science have been offered by several groups (Mat Hashim et al., n.d.; Ahmad et al., 2011; Academy of Sciences Malaysia, 2019; Azman & Ben, 2017). These views are given by scientists, or social scientists and scientific associations which do not come from the perspectives of true religious scholars, rather they are directly educated in multidisciplinary fields of Islam with modern and secular pure sciences or applied sciences background and affiliations. Thus, their generic views are

limited by the superficial definition of halal and using science and technology to address the issues of halal consumerism, trade, commercialization and manufacturing.

More discourses are needed to clearly understand, define, and establish halal science as a discipline. The root cause for misunderstanding halal science is perhaps due to the interpretation of science itself or seeing science from different worldviews other than the Islamic worldview or tawhidic paradigm (Hashim & Samsudin, 2022).

To this end, not doing 'true' halal science can be comprehended as not following tawhidic paradigm. Halal integrity and values could be compromised if the HT-knowledge workforce does not truly understand, internalize and practice the shari'ah requirements such that the academia needs to play their roles in providing education and training in these areas (Rafida et al., 2013). Another author applied the theory of risk of society to the issue of halal. The author argued that although halal is not new and is a revealed concept from the Qur'an, Muslims in the modern world have come to consume 'industrialized' (which is an element of the Western's capitalism and secularism where views of ethics and responsible usage of diminishing natural resources are somewhat distorted from the values in the Qur'an and hadith) HT products and services. In this process, scientific knowledge has been seen to increase syubhah matters that become invisible risks in Muslim consumption. Syubhah, may create chaos when the halal ecosystem imposes a universal halal standard that forces uniform halal standards, globally, although the needs and requirements of both consumers and producers worldwide are global, and influenced by differing conditions, situations and environments.

All these scenarios call for a careful re-evaluation or a re-design of the 'true' halal science based on the 'true' Islamic principles and worldview to uphold the HT integrity and values. This could be achieved through Islamization of knowledge, introduced by Syed Muhammad Naquib Al-Attas in the late 1970s of which has been described as a concept that aimed to 'detach' knowledge from Western culture and civilization to replace it with Islamic concepts, frameworks and values (Musa, 2021). 'Detach' in this context refers to screening of the values and knowledge from the Western world, where full, partial and conditional acceptance over conflicts may be considered. It is also in context of when there is no specific discrimination between Western culture, Eastern or any culture, from the non-muslim world, so long as the knowledge and values propositions do not go against the tenets of Islam.

Al-Attas' concepts also find resonance among numerous scholars, theologians, and philosophers. Isma'il al-Faruqi, a Palestinian-American philosopher, was among those who explored the interaction between Islam and the Western world, with a particular emphasis on the role of Islamic ethics and values in modern life. He passionately supported the revival of Islamic thought across various domains, echoing Al-Attas in the pursuit of integrating Islamic principles into various aspects of life and examining the consequences of secularism on the Muslim world (Hashim and Rossidy, 2000). It is worth highlighting that the Islamic intellectual tradition encompasses a rich tapestry of divergent viewpoints, and unanimity among scholars is far from universal. These varying perspectives often challenge conventional interpretations of Islam, advocating for more autonomy and adaptability in the interpretation and application of Islamic principles in today's contexts. Meanwhile, Nasr Abu Zayd, an Egyptian scholar, was recognized for his progressive and liberal interpretation of Islam, asserting that Islamic texts have historical contextuality and can be subject to reinterpretation in alignment with contemporary values and principles (Najjar, 2000).

Using the concept of halal science as a basis, this paper seeks to explore the pressing concern of whether halal science is currently practiced in the tawhidic paradigm as part of worshipping Allah as the Creator. It is hypothesized that the development of HT products and services that fail to abide by the tawhid-based halal science led to halal being too economically centric and losing its soul (*roh*). In contrast, if the intention and processes revolving around the development of HT products and services are based on the tawhidic-based halal science, it could solve the bigger crisis of halal being trapped in the capitalism paradigm. As such, a 'true' halal science based on tawhidic programme is important to uphold the religious aspects of halal from being manipulated.

The halal ecosystem is big with multi-stakeholders and multi-layers of processes. Notwithstanding the presence and importance of halal science in the whole halal ecosystem, this paper focuses on the level of academic program by full research offered in halal science. The work is set to answer the question of whether the halal science research undertaken meets the elements of Islamization of knowledge and as such is being done in the tawhidic programme.

Therefore, the aim of the study is to i) identify the elements of Islamization in halal science research, and ii) to propose the measures to conduct halal science research based on the tawhidic paradigm. Relevant information is collected through content analysis from dissertations of Master in Halal Industry Science

(MSHIS), offered at the International Institute for Halal Research and Training (INHART), IIUM.

The outcome of this work shall be able to guide researchers in the halal science research area to conduct their research based on the tawhidic paradigm leading to the development of the wholistic HT products and services that meet the HT criteria, and the creation of HT-related knowledge nestled in the tawhidic paradigm. Maqasid methodology approach (Auda, 2021) is proposed as part of the efforts to Islamization of knowledge in halal science research.

Following the introduction section, the paper is divided into four parts. The first part briefly discussed the concept of Islamization of knowledge. The second part described the definitions and concepts of halal science as a branch of Islamic science. The third part explains the methodology and examines the elements of Islamization in halal science research. Prior to the conclusion section, the fourth part proposed some measures to conduct halal science research based on the tawhidic paradigm.

1.1 Islamization Of Knowledge And Its Tawhidic Paradigm

The concept of 'Islamization of knowledge' was first introduced in the late 1970s by Syed Muhammad Naquib al-Attas, a contemporary Malaysian philosopher (Al-Attas, 1993) in response to secularization. Many philosophers including prominent scholars like Ismail Raji al-Faruki and Syed Hossien Nasr have built upon the concept with different approaches but the core values remain the same i.e., the tawhidic paradigm (Ahsan et al., 2013). AbdulHamid AbuSulyaman wrote:

"Islamic knowledge' or 'Islamization of knowledge' requires a proper and comprehensive Islamic methodology that seeks guidance from the revelation but does not render reason inter nor suspend its role."

"Through the Islamization of knowledge, the Ummah is cognizant of the need for and importance of the scientific and cultural achievements that the human race has inherited and achieved. However, it must be thoroughly examined and critically checked in the light of Islam, its comprehensive norms, its guidance and its ideals". (AbdulHamid AbuSulayman, 1997)

Within the concept of Islamization of knowledge lies the process of relevantization, integration and harmonization. In the scope of Islamic religious sciences, studies, knowledge, and disciplines which Muslim scholars have founded and developed based on Quran and Sunnah, relevantization is

referred to reforming (islah), renewing (tajdid) and constant improvement in areas that changes over time to maintain their relevance to the contemporary issues of mankind, environment and civilization (Hassan, 2009). This shows that Qur'an and Sunnah are the main and ultimate source as well as the educational model for all aspects and branches of knowledge (Surajudeen et al., 2013).

Meanwhile, integration is posited to realize the Islamization of knowledge through the unification of religious sciences and non-religious sciences (AbuSulayman, 1997) and harmonization between triadic concepts of tawhidic paradigm, values and human potentials in the educational system of contemporary Muslims (Baba, 2009). Earlier debates by the scholars described the process of integration as the merging of Western and Islamic concepts knowledge (Al-Faruqi, 1982) with the argument that this process (integration) can only be done after isolating secular elements of Western knowledge such that the Islamic system does not require modernization to be relevant with the modern world (Al-Attas, 1993).

Harmonization refers to the process of infusing revealed and acquired knowledge of which the tawhidic worldview is the backbone of the study of all branches of knowledge about all creations (such as biology, physics, astronomy, to name a few) (Surajudeen et al., 2013). All three processes although overlapping at some junctions constitute the whole approach of Islamization of knowledge that is laid in the tawhidic paradigm towards the revival of the Ummah.

According to Ali (2006), al-tawhid means belief in the oneness of Allah s.w.t. where it is a central theme in Islam that enables man to understand about everything in the universe. Al-tawhid is the foundation of shari'ah and the sunnah of Prophet Muhammad pbuh raised the observance of al-tawhid in all aspects of life, cementing the fact that the true source of knowledge is from Allah s.w.t through revelation of the Qur'an and the teachings of Prophet Muhammad pbuh.

1.2 Halal Science As A Branch Of Islamic Science

Science (Latin scientia "knowledge") is obtained through systematic observations of nature. In Islam, the concept of doing science transcends the systematic observations of nature to a mere testing of hypothesis, rather, it is an exercise to understand nature and the Creator. This would then guide mankind to properly take the responsibilities as the *khalifah* (vicegerent) as well as the duties of a servitude to Allah, leading towards the attainment of

mardhatillah (the blessing of Allah). Allah said in the Qur'an:

"He is the One Who has laid out the earth for all of you, and set in its pathways for you, and sends down rain from the sky, causing various types of plants to grow, so eat and graze your cattle. Surely in this, are signs for people of sound judgment." [Al-Quran, 20:53-54]

To this end, the philosophy of Islamic science influences the fundamentals of halal science research (Said & Hanapi, 2019). This differentiates halal science from conventional science. While conventional science relies solely on scientific and empirical data; in halal science paradigm, the empirical evidence and research itself cannot override the Islamic revelation (the Quran and Sunnah) (Hashim & Samsudin, 2022).

1.3 Definitions and concepts of halal science

While halal science may have been practiced in the halal industry, the concept and definitions of the term are still vague. Some authors provide definitions while some discussed only the concepts or areas of halal science without clear definitions (Table 1). In a bibliometric study looking at the evolution of halal research from the year 1996 to 2020, the keyword 'halal science' did not emerge as a term or cluster to reflect pure science-related research as hypothesized by the researchers leading to the conclusion that the scenario is caused by the lack of conceptual clarity of the term itself (Hashim et al., 2022). As such, more work needs to be done to establish the true meaning of halal science, nestled in the tawhidic realm.

Table 1. Definitions and concepts/areas of halal science

Definitions	Concept/areas of halal science	Reference
Research activities about halal involving the use of science and technology.		Said and Hanapi, (2019); (Tariqur Rahman, 2021)
Halal knowledge attained systematically through observation and experimentation study and practice to describe and explain natural phenomena that relate to halal practices.		Academy of Sciences Malaysia, (2019); Azman and Ben, (2017)

Scientific knowledge with multidisciplinary programmes which is based on the halal concept of halal framework.

Ahmad et al.,
(2011)

An area of study where a scientific approach is used to support matters that are defined by Shari'ah and the principles of Islam.

Mat Hashim et
al,n.d.

Applications of science and technology in vast areas of contemporary era which includes halal food, halal logistics, halal tourism, halal education and many more

Deuraseh et al.,
(2022)

The role of halal science laboratory is to determine the halal status of raw materials in products. It works as a reference and a source of scientific evidence in halal product verification.

Mohd Nor, (2021)

Science and technology halal discourses that include among others, food technology, animal slaughtering, microbiology, food science, biotechnology and dietary (and many others)

Tumiran et al.,
(2021)

A scientific research pursuit aimed at supporting, expanding and sustaining the halal industry globally. This encompasses analysis and the use of new technology to create innovative products and services with great impact to society and environment.

Academy of
Sciences Malaysia,
(2020)

1.4 Master in Halal Industry Science (MSHIS)

Master in Halal Industry Science (MSHIS) is a full research program offered at the International Institute of Halal Research and Training (INHART), IIUM since 2013. The programme is one of the postgraduate programmes offered at INHART in line with its mission “To cater for a higher level of demands in terms of comprehensive knowledge in the field of halal industry”. Programme Educational Objectives (PEO) for MSHIS include “Halal practitioners demonstrating mastery of knowledge and proficiency in research and innovation to provide creative solutions for halal industry” and “Halal practitioners embodying Islamic worldview and code of practices in their personal, professional, and communal conducts”. PEO is defined as broad statements that describe the career and professional accomplishments that the programme is preparing the graduates to achieve after they graduate (Malaysia Qualifications Agency, 2022).

The programme has incorporated and aligned with the elements of the IIUM Sejahtera Academic Framework (SAF) (Borhan et al., 2021), a comprehensive framework for nurturing IIUM students as holistic human beings principally guided by the IIUM Vision and Mission. The SAF aims to equip the students with useful and relevant knowledge as well as specialised skills, at the same time embedded with Islamic values and practices imbued with integrity as a khalifah. MSHIS is offered to students from science backgrounds intending to pursue their master in the field of science related to halal. MSHIS aims to supply the required well trained human capital or talents for halal industry science related field including encompassing halal food (food production, food packaging, transportation), pharmaceuticals and consumer products as well as various halal service industries like tourism and hospitality.

2. METHODOLOGY

This study employs a qualitative research approach to achieve its objectives of identifying Islamization elements in halal science research and proposing measures to conduct halal science research based on the tawhidic paradigm. The research draws upon analysis of 14 Master in Halal Industry Science (MSHIS) dissertations completed between 2017 and 2021, which serve as the primary sources of investigation (Appendix A shows the full list of dissertations studied)). In addition, a range of secondary sources, including academic journals, books, electronic resources, and documents related to the MSHIS program, are consulted to provide a comprehensive understanding of the topic.

Data is evaluated from the Islamic perspective through the process of relevantization, integration and harmonization. Islamization elements were identified through a three-step process. A comprehensive mapping of elements related to the SDGs, science and technology, academic programme standards, institutes (faculties), and universities was also included in the process (Figure 1). This comprehensive mapping allowed for a thorough understanding and ensured that the research conducted aligned with the goals and objectives of the university, the academic framework, and the larger national framework for science, technology, innovation, and the economy. The analysis is carried out on the title, abstract, first chapter (introduction) and final chapter (conclusion) of the dissertations. Delve software was used to aid some parts of the content analysis.

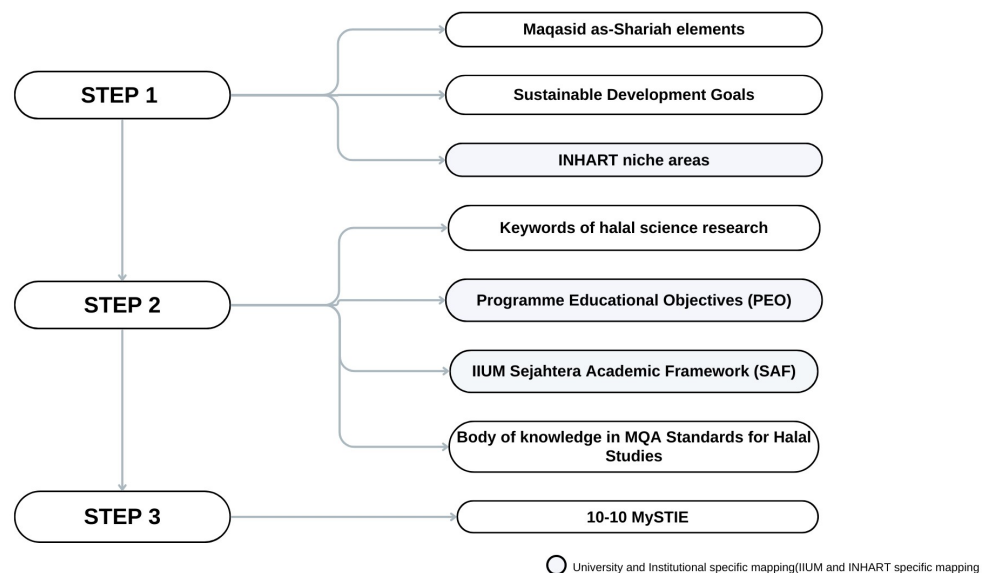


Figure 1. Steps for Identification

3. RESULTS AND DISCUSSION

3.1 *Elements Of Islamization In Halal Science Research*

Analyses of 14 dissertations in the Master in Halal Industry Science (MSHIS) programme were conducted. The first part of the analysis includes mapping the content of the dissertation with i) Maqasid as-Shariah elements, ii) Sustainable Development Goals and iii) INHART niche areas. The second part attempts to determine whether the dissertation can be classified as having done halal science and or included the elements of Islamization of knowledge. This includes, i) the presence of keywords that reflect halal science research, ii) correlation with Programme Educational Objectives (PEO), iii) correlation with IUM Sejahtera Academic Framework (SAF), and iv) correlation with the body

of knowledge in MQA Standards for Halal Studies. Finally, the correlation between the said sections is also mapped with the 10-10 Malaysian Science, Technology, Innovation and Economy (MySTIE) Framework (10-10 MySTIE) (Academy of Sciences Malaysia, 2020).

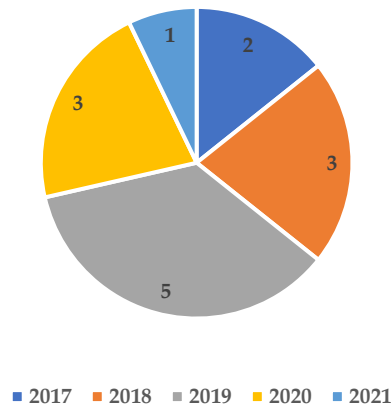


Figure 2. Number of dissertations from the Master in Halal Industry Science (MSHIS) programme between the year 2017 to 2021

3.2 Mapping of dissertations Maqasid as-Shariah, SDG and INHART niche areas

Figure 3 shows that most of the dissertations addressed the element of faith of the Maqasid as-Shariah while some titles addressed two elements (faith; life/soul). However, it is important to note that the mapping between the dissertation (hence research work) is done based on observations of the content. No explicit information or mention of the correlation was disclosed in the dissertation by the authors themselves.

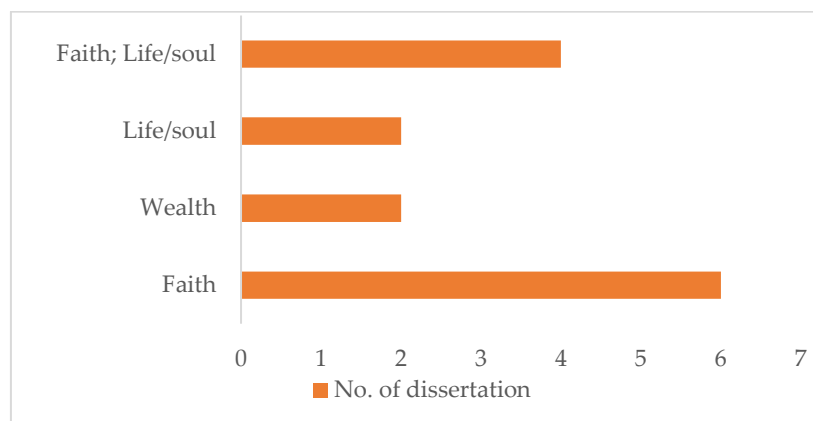


Figure 3. Dissertations from the Master in Halal Industry Science (MSHIS) mapped to elements of Maqasid as-Shari'ah

When mapped against the Sustainable Development Goals (Figure 4), it was

found that around 40% of the dissertations contain SDG9 Industry, Innovation and Infrastructure goals, with innovation being the highlights of the research work. Meanwhile, if combinations of SDG goals are considered, almost 70% of the dissertations were found to have SDG9 Industry, Innovation and Infrastructure goals. As quoted from UN website (United Nations, n.d.):

“SDG9 aims to build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.”

“Inclusive and sustainable industrialization, together with innovation and infrastructure, can unleash dynamic and competitive economic forces that generate employment and income.”

While targets and action plans of SDG can guide the research efforts in halal science, the SDG itself lacks spiritual elements hence pose a risk of being imprisoned in capitalism. As described earlier, the so-called ‘industrialised’ halal has been shown to have “risk society” that increase syubhah matters (Sumimura, 2022) which could be perceived as a destructive aspect of the scientific results that caused insecurity to the Muslims. To this end, the research work conducted thus far in MSHIS programme may be lacking the true Islamic science elements hence the need for Islamization of knowledge.

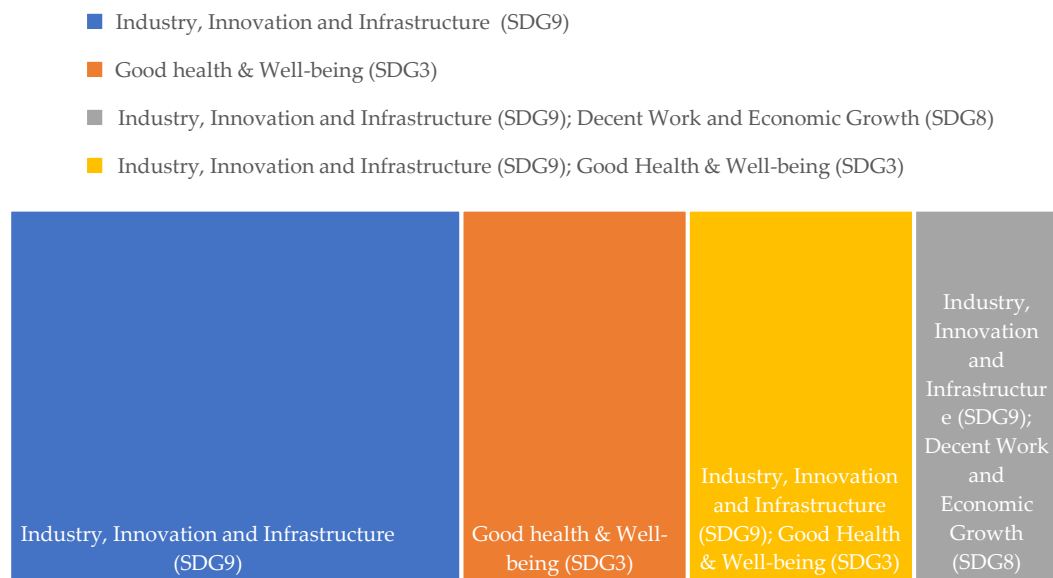


Figure 4. Dissertations from the Master in Halal Industry Science (MSHIS) mapped to elements of Sustainable Development Goals

It is worth highlighting that Islam does not pose any barriers to excelling in technology and innovating when they bring benefits and repels harm, all while following the principles and teachings of the Qur'an and Sunnah (Abdelgalil,

2023). Both Islamic and conventional innovation share the goal of creating new and valuable solutions, yet the underlying motivations, ethical considerations, and sources of inspiration distinguish Islamic innovation as a unique approach deeply rooted in Islamic faith and principles.

Wan Abdullah et al.'s (2021) study delves into the distinct characteristics of innovation in Islam, highlighting seven core themes. These encompass recognizing imperfection and the constant pursuit of improvement, drawing inspiration from Allah, emphasizing benefits to society, ensuring Shariah compliance, tailoring solutions to specific needs, integrating innovation with traditional knowledge, and promoting sincere intentions in service to Allah and humanity.

In terms of research focus, INHART has three main niche areas; i) alternative materials and ingredients, ii) authentication and sensors; and iii) shariah, management, marketing, and contemporary halal issues. Niche i) and ii) are readily related to halal science while niche area (iii) forms the backbone of the two areas and could also stand on its own. From the 14 dissertations studied, majority falls under the niche area alternative materials and ingredients (Figure 5).

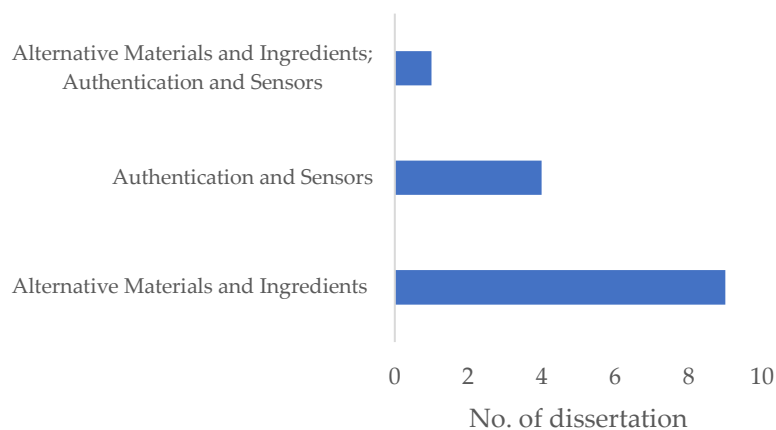


Figure 5. Dissertations from the Master in Halal Industry Science (MSHIS) mapped to elements of Sustainable Development Goals

3.3 Identification of components of *halalan toyyiban* in the dissertation

Use of the correct term in at least title, abstract (and keywords in the case of journal article) is very important to allow a publication output to be correctly categorized into its academic disciplines. This will allow the dissertations to be readily recognizable as research outputs from a halal science research programme. Figure 6 showed that most dissertations contain the keyword

halal. Only three dissertations appear to use the term *halalan toyyiban*. Two dissertations have not included any related terms of *halalan toyyiban*. This suggests that the dissertations of MSHIS may not have clearly portrayed its halal science scope.

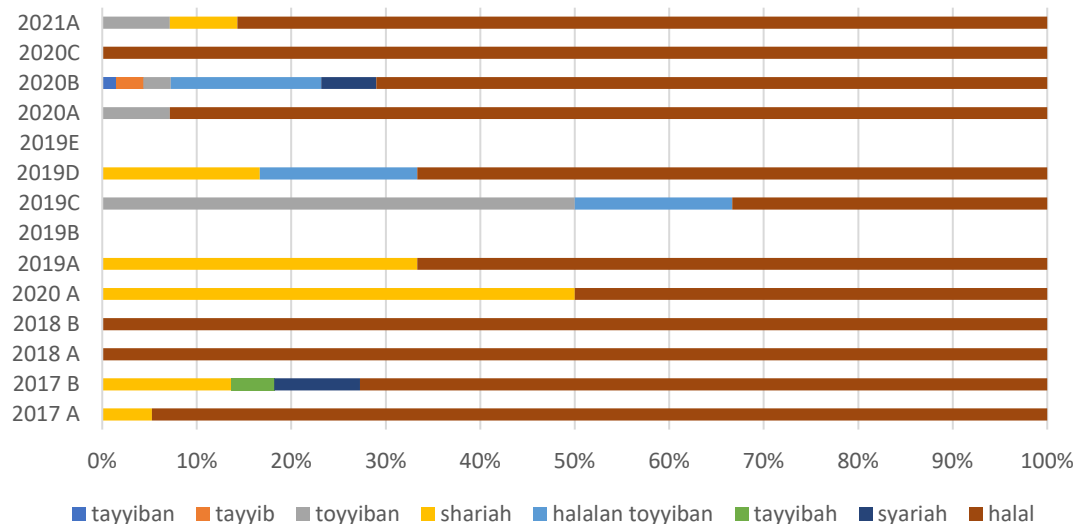


Figure 6. Occurrence of keywords related to *halalan toyyiban* including their various spelling in the dissertations of the Master in Halal Industry Science (MSHIS) programme. The keywords are searched in the title, abstract, first chapter (introduction) and final chapter (conclusion)

3.4 Identification of components of halal science research and elements of Islamization of knowledge

The Programme Educational Objectives (PEO) for MSHIS include “Halal practitioners demonstrating mastery of knowledge and proficiency in research and innovation to provide creative solutions for halal industry” and “Halal practitioners embodying Islamic worldview and code of practices in their personal, professional, and communal conducts”. In general, the dissertations met the PEO in terms of research and innovation (similar to the mapping to SDG9 as described earlier), but it is not clear if it meets elements of Islamization of knowledge.

To see the correlation with the IIUM Sejahtera Academic Framework (SAF), the dissertations were mapped with UniCORE (University Required Courses) (Borhan et al., 2021). For postgraduate programmes, UniCORE courses are designed to have elements of Islamization of knowledge. While it is not evident that elements of Islamization of knowledge are present in the dissertations, MSHIS programme structure includes several courses which are categorised as Special Requirement courses (compulsory), of which one of the courses entitled

Values, Ethics and Sustainability in Halal Industry highlights the contributions of Muslim scientists of the past that formed the bedrock of the current modern science. This is an element of Islamization of knowledge that would lead the graduates to be appreciative of their critical role to continue the legacy.

Next, the correlation with the halal body of knowledge (halal common core) as stated in the MQA Standards for Halal Studies was investigated. Table 2 shows the halal common core that should be included in the halal-related academic programmes. These halal common core courses reflect the elements of Islamic knowledge. A full research programme doesn't need to have these halal common courses. However, MSHIS offered Special Requirement courses and several others for students to audit. These courses contain some of the components of the halal common core courses. In terms of the dissertation itself, it is difficult to see the components of the halal common core courses in the content, or rather they are not explicitly described. To this end, it can be suggested that the content of the MSHIS dissertation should also include elements of these halal common courses.

Table 2. Halal common core courses as compulsory requirements in the MQA Standards for Halal Studies (Malaysia Qualifications Agency, 2022)

Halal common course courses (MQA Programme Standard: Halal Studies)	
1	Islamic Theology (Aqidah Islamiah)
2	Islamic Jurisprudence (Usul Fiqh)
3	Islamic Legal Maxim (Qawaid Fiqhiyyah)
4	Islamic Law of Consumerism (Fiqh al-Istihlak al-Islami)
5	Objectives of Islamic Law (Maqasid al-Shariah)
6	Halal Regulatory and Governance - Compliance
7	Halal Regulatory and Governance - Quality
8	Halal Regulatory and Governance - Governance

Finally, the correlation of the dissertations with the 10-10 Malaysian Science, Technology, Innovation and Economy (*MySTIE*) Framework (10-10 MySTIE) is also studied. Aiming to position the Malaysian Halal ecosystem as a producer of premium products and services for the global halal market, the Academy of Sciences Malaysia (ASM) has mapped the national STIE areas with the socioeconomic drivers in the landscape of halal (Academy of Sciences Malaysia, 2020). Some of the MSHIS dissertations meet the nexus in the 10-10 MySTIE framework. However, it is difficult to see any elements of Islamization of knowledge in the correlation.

3.5 Proposed Measures To Conduct Halal Science Research Based On The Tawhidic Paradigm

It is important to reiterate that the definition and concept of halal science are not well established to date. However, based on the understanding that halal science exists as a component of Islamic science, findings from the above section showed that the MSHIS dissertations studied contain some elements of halal science research. In contrast, the elements of tawhidic-based halal science are vague. In the dissertations, there is no, or very limited discussion being made about the belief in the oneness of Allah s.w.t (tawhid), or the true source of knowledge (Allah s.w.t.) or the relationship with the sunnah of the Prophet Muhammad pbuh or the teachings of the companions and the *solafusoleh* to the later generations. To this end, there is a dire need of appropriate Islamization of knowledge efforts in realizing the 'true' halal science research.

First, it is proposed that halal science research is undertaken following the Maqasid methodology as described by Prof Jasser Auda in his recent book. Maqasid methodology is a process by which re-envisioning the Islamic scholarship is possible which is started with the setting of one's intent/purpose or *niyyah* (Auda, 2021). Figure 7 shows the five overlapping and interconnected Maqasid methodology steps.

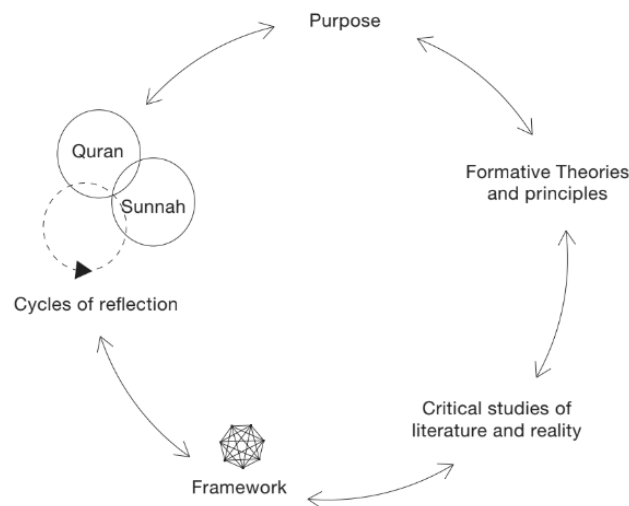


Figure 7. Five steps of Maqasid methodology (source: Auda, 2021)

It is also proposed that more elements of Islamization of knowledge are embedded in MSHIS courses with deliberate and clear inclusion of the elements. A mechanism must be in place to ensure that the correct keywords reflecting the HT, halal science research and elements of Islamization of knowledge are explicitly mentioned such as in the title, abstract, chapter one (introduction) and the conclusion. A checklist of minimum components of

selected criteria to qualify such work as halal science research must be established to guide the research work as early as the proposal defense. To do this, the programme provider must establish the key concepts, definitions or components of halal science. One example of a key concept in halal science is halal built in. The programme provider could also determine and make clear the halal science niche area to enable the research to map their scope of work.

4. CONCLUSION

It can be concluded that the MSHIS dissertations studied contain some elements of halal science research. However, the elements of tawhidic-based halal science are elusive hence the need of appropriate Islamization of knowledge efforts in realizing the 'true' halal science research. Maqasid methodology approach, along with establishment of key concepts related to halal science are proposed as part of the Islamization of knowledge efforts in halal science research. To this end, this work shall be able to guide researchers in the halal science research area to conduct their research based on the tawhidic paradigm leading to development of the wholistic HT products and services that meet the HT criteria, and creation of HT-related knowledge nestled in the tawhidic paradigm.

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