

# Islamization of Science in The Digital Era: Challenges and Opportunities in the Integration of Science and Islamic Values

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## ARTICLE HISTORY

Received: January 05, 2025  
Revised: July 11, 2025  
Accepted: October 22, 2025

## DOI

<https://doi.org/10.52970/grdis.v5i4.981>

## ABSTRACT

This study explores the complex dynamics of Islamization of science in the digital era, focusing on the challenges and opportunities involved in integrating Islamic values into contemporary scientific paradigms. Employing a descriptive quantitative design, the research surveyed 350 Muslim academics and students across Islamic universities in Southeast Asia and the Middle East. The findings reveal widespread awareness of Islamization, yet significant variations in conceptual understanding across disciplines and age groups. Challenges include epistemological tensions with secular science, institutional limitations, and technological infrastructure gaps. Conversely, digital tools—such as e-learning platforms, AI-based content, and augmented reality—emerge as transformative instruments for disseminating Islamic scientific perspectives. Respondents called for strategic policy support, interdisciplinary centers of excellence, and transnational collaboration to sustain these efforts. The study highlights the importance of nurturing a generation of Muslim scholars capable of bridging scientific knowledge with spiritual wisdom, thereby offering a holistic framework for scientific inquiry rooted in tawhid and ethical accountability. The results contribute empirically to the growing discourse on Islamization and offer actionable recommendations for educational institutions, policymakers, and scholars engaging with Islamic epistemology in modern science.

**Keywords:** Islamization of Science, Digital Era, Islamic Epistemology, Science Education, Muslim Scholars, Ethical Science.

## I. Introduction

The Islamization of science has emerged as a critical intellectual response to the growing secularization of knowledge that has become increasingly dominant across academic disciplines. Rooted in the Islamic intellectual tradition and inspired by the metaphysical foundations of the Islamic worldview, the concept of Islamization of science seeks to reconstruct scientific knowledge by reintegrating spiritual, moral, and ethical values that have been sidelined in the modern, materialistic approach to knowledge. Rather than rejecting science itself, this movement calls for a paradigm shift—one that harmonizes modern scientific methodologies with Islamic principles such as tawhid (the oneness of God), khilafah (human stewardship), and adab (proper conduct) (Al-Attas, 1980; Al-Faruqi, 1982; Nasr, 1993). At its core, Islamization of science strives to develop a holistic framework of knowledge that serves both the material and spiritual well-being of humanity. It promotes the idea that scientific inquiry should not only focus on empirical truth and worldly utility but should also reflect the moral and transcendental dimensions that are essential to human purpose.

As Syed Muhammad Naquib al-Attas emphasized, secular science has stripped knowledge of its soul, detaching it from the metaphysical reality that gives it direction and purpose. The Islamization project, therefore, is not merely a theoretical undertaking, but a call for a reformation of thought in which science becomes a means of worship ('ibadah) and a tool to fulfill the higher objectives (maqasid) of Shari'ah (Wan Daud, 2010).

However, the development of science in the digital era has complicated this project. The globalization of information and the rapid advancement of digital technologies—such as artificial intelligence, biotechnology, data science, and virtual reality—have fundamentally transformed how knowledge is produced, accessed, and shared. While this digital transformation has opened new avenues for learning, innovation, and communication, it has also intensified the marginalization of spiritual and ethical dimensions within scientific practices. Moreover, the fast-paced and often unregulated dissemination of information online has blurred the boundaries between authentic knowledge and misinformation, posing a new kind of epistemological crisis (Iqbal, 2009; Rizvi, 2018). One of the central questions that emerges in this context is: How can the Islamization of science be effectively implemented in the midst of a digital revolution that tends to prioritize speed, utility, and algorithmic logic over wisdom, reflection, and spirituality? Can this integration of Islamic values with modern scientific paradigms be actualized in formal education systems, particularly in institutions of higher learning where secular approaches still dominate curricula and pedagogy? These questions are not merely theoretical, but point to a broader phenomenon—the epistemic dissonance experienced by Muslim scholars and students who wish to pursue scientific excellence without compromising their faith.

The digital era, while offering access to vast repositories of knowledge, also brings the risk of value distortion, intellectual fragmentation, and spiritual confusion. (My et al., 2024). With the influx of unfiltered content across digital platforms, many in the Muslim community struggle to discern which knowledge is aligned with Islamic principles and which is not. As a result, there is a pressing need to formulate clear, systematic strategies for filtering, contextualizing, and disseminating scientific knowledge that upholds Islamic values. This includes, but is not limited to, designing ethical frameworks for digital science, rethinking science education, and fostering global collaboration among Muslim scholars and institutions (Noor, 2017; Hasan, 2020). The primary objective of the Islamization of science in this digital era, therefore, is to re-establish a synergy between modern scientific knowledge and Islamic values so that the outcomes of scientific inquiry are not merely technical or worldly in nature, but also infused with ethical responsibility and spiritual meaning. It is about reimagining education not as a purely cognitive process, but as a comprehensive, value-driven experience that nurtures both intellect and soul. More specifically, the aim is to develop an integrative educational paradigm that equips Muslim scientists, educators, and students to critically engage with contemporary science without alienating themselves from the foundational teachings of Islam.

In addition to reviving the metaphysical orientation of knowledge, Islamization in the digital age seeks to leverage technology for the greater good. The use of digital platforms—such as e-learning systems, virtual classrooms, Islamic digital libraries, and open-source academic repositories—has the potential to amplify the reach of Islamically aligned scientific discourse. These tools can foster knowledge-sharing, collaboration, and mentorship across borders, facilitating the emergence of a global Muslim intellectual network. Furthermore, digital innovation can support the development of curriculum models, research frameworks, and learning resources that are tailored to integrate scientific concepts with Islamic epistemology. In Indonesia, the concept of Islamization of knowledge has been acknowledged as a strategic agenda in Islamic higher education. Many state and private Islamic universities have integrated elements of Islamization into their mission statements, academic policies, and curriculum development. The goal is to produce a generation of Muslim intellectuals who are academically competent and spiritually grounded—individuals who can contribute to the development of science while remaining faithful to the teachings of the Qur'an and Sunnah. However, the practical implementation of this vision faces several obstacles, including resistance from secular academia, limited interdisciplinary resources, and a lack of standardized frameworks for curriculum integration (Zarkasyi, 2019; Hasan, 2020).

Previous studies have explored these dynamics in various contexts. Al-Faruqi (1982) emphasized the need to reconstruct the social sciences through the lens of the Islamic worldview, arguing that Western epistemology imposes alien values upon Muslim societies. Nasr (1993) underscored the desacralization of nature in modern science and proposed a return to sacred cosmologies. Noor (2017), in a case study of Malaysian Islamic universities, found that while Islamization is widely accepted in principle, its execution is fragmented and lacks institutional cohesion. Hasan (2020), in a survey of Indonesian science educators, identified epistemological ambiguity and weak curricular alignment as major challenges in embedding Islamic values within STEM disciplines. Meanwhile, Rizvi (2018) highlighted the urgency of developing Islamic bioethics in response to digital health technologies and emerging biotechnologies that challenge classical jurisprudential norms.

Despite the richness of these theoretical discussions, there remains a shortage of empirical data on how Islamization is perceived, practiced, and internalized within the daily realities of digital learning environments. There is limited understanding of how Muslim students, educators, and researchers navigate this integration, and what obstacles or opportunities they encounter along the way. This gap underscores the importance of adopting a quantitative approach to systematically analyze patterns, attitudes, and perceptions across a broader population. This study, therefore, adopts a descriptive quantitative method to explore the dynamics of Islamization of science in the digital era. The research focuses on key aspects such as: the level of awareness and acceptance of the Islamization concept among Muslim academics; perceived challenges in its implementation within digital educational environments; and the extent to which digital tools and platforms are utilized to promote Islamically-informed scientific learning. Through statistical analysis of survey responses and related data, the study aims to provide a comprehensive overview of current trends, perceptions, and potential strategies for enhancing the integration of science and Islamic values in contemporary Muslim contexts.

The objectives of this study are fourfold. First, to identify the current understanding and perception of Islamization of science among university-level Muslim stakeholders. Second, to assess the challenges posed by digitalization, such as information overload, curriculum fragmentation, and epistemological conflicts. Third, to examine the opportunities provided by digital technologies in promoting ethical, spiritual, and value-based science education. Fourth, to offer evidence-based recommendations that can inform curriculum developers, policymakers, and academic leaders seeking to align scientific education with Islamic intellectual heritage. In conclusion, the Islamization of science in the digital era represents both a continuation of classical Islamic epistemological traditions and a necessary adaptation to the conditions of modernity and digital transformation. It requires a delicate balance between upholding timeless values and engaging with evolving technologies. The complexity of this endeavor demands not only philosophical reflection but also empirical investigation. This study seeks to contribute to that effort by shedding light on the practical realities of implementing Islamization in a digitized world, offering insights that can guide future innovations in Islamic education, knowledge production, and scientific engagement.

## II. Literature Review and Hypothesis Development

### 2.1. Foundations and Definitions of Islamization of Science

The concept of Islamization of science arises from a critique of the secularization inherent in modern scientific discourse. Early proponents like Al-Faruqi (1982) and Al-Attas (1993) emphasized that Western science often embodies metaphysical assumptions that conflict with the Islamic worldview. They advocated a reconstruction of knowledge grounded in Islamic principles such as *tawhīd* (monotheism), *khilāfah* (human stewardship), and *‘adl* (justice) (Al-Faruqi, 1982; Al-Attas, 1993). Nasr (1993) further warned that secular science, divorced from spiritual meaning, leads to ecological crisis and moral vacuum. Collectively, these scholars laid the theoretical foundation for redefining the epistemology and ontology of science within an Islamic framework, providing a basis for subsequent empirical studies. In recent decades, scholars have refined

these foundational ideas in light of new challenges. Rizvi (2018) extended the discourse by exploring how Islamic ethics can inform emerging technologies like biotechnology and data science. Meanwhile, Hanif and Prasetianingtiyas's (2023) philosophical study on al-Attas's thought illustrated the continuity of ethics-centric critique in the era of Society 5.0, emphasizing the persisting need to prevent the "deification" of science (Hanif & Prasetianingtiyas, 2023). Putra et al. (2025) theorized Tawhīdic Science, where Qur'anic and Prophetic ethical paradigms guide digital transformations. The evolution of foundational frameworks thus reflects an adaptive, living Islamization project.

Empirical definitions of Islamization of science have also matured. Yahyan and Madkur (2017) described a three-fold integration model—purification, reformation, and neo-modern adaptation—highlighting ways Islamic values can enter science curricula. Hariyani and Albantani (2017) demonstrated that integrating Qur'anic verses into science pedagogy enriches meaning and frames technology within spiritual responsibility. These empirical definitions operationalize abstract theory for education and curriculum studies, showing how values can become part of teaching strategies and content. More recently, Ibnu Abbas et al. (2025) underscored how the Qur'an and Sunnah can reactualize Islamic epistemology to digital revolution challenges, replacing dichotomous secular approaches with Tawhīdic models. This body of work confirms a shift from foundational critique to applied conceptualization—defining Islamization not just as theory, but as a practical framework for teaching, curriculum, and digital ethics.

## 2.2. Digital Era: Opportunities for the Islamic Scientific Paradigm

The digital revolution has dramatically expanded access to scientific knowledge and Islamic scholarship alike. Abdau (2023) argued that digital platforms have accelerated global dissemination of Islamic teachings and communal learning, though they have also magnified misinformation. Rohmiati (2025) also emphasized digital media's role in enhancing accessibility and engagement in Islamic religious education through e-books, videos, AR, and VR tools. Artificial Intelligence (AI) further adds to these opportunities. Rifah, Jailani, and Huda (2024) highlighted AI's potential to provide personalized Islamic education, improve learning analytics, and streamline Islamic curricula—yet they cautioned against misapplication that may erode spiritual integrity. Muslim (2024) reported that augmented reality in pesantren learning improves interactivity and moral understanding, suggesting that digital tools can be powerfully aligned with Islamic pedagogy when infused with careful value-based design.

These opportunities align with earlier integrative models. Zarkasyi (2019) presented a framework for embedding Islamic epistemology into scientific research, recommending digital knowledge repositories and academies as global platforms. Wa Muslim (2024) validated this by showing that pesantren using digital tech internalize Islamic values more deeply. Thus, digital tools can amplify Islamization if structured within an ethical and epistemological paradigm. Quantitative Islamic discourse also supports this trajectory. A recent editorial by Ahmady (2025) proposed formalizing quantitative methods in Islamic studies to measure digital sahih. This methodological expansion allows deeper investigation into Islamization's reception, tool efficacy, and outcome patterns. The digital era, therefore, not only enables the dissemination but also the robust evaluation of Islamization initiatives.

## 2.3. Challenges and Risks in Digital Islamization Efforts

Simultaneously, several studies draw attention to complex challenges in aligning digital science with Islamic values. Abdau (2023) pointed out how misinformation on social media distorts Islamic teachings, challenging believers' epistemic discernment. He suggested that Muslims require digital literacy and theological filters to avoid being misled. Rohmiati (2025) echoed this, noting that poor technological infrastructure, inadequate teacher training, and absent ethics policy weaken the transformative potential of digital Islamic education. Such gaps risk dependency on technology, verbal reductionism, or digital distraction. These concerns resonate with earlier fears of the commodification of sacred knowledge.

Concerns intensify in domains like AI ethics and biotechnology. Wired's coverage of Muslim AI scholars such as Qadir and Raquib (2021) emphasized that algorithmic logic may conflict with Islamic ethical values—raising questions about harm, prolonging life, and autonomous decisions. They urged embedding Islamic ethics into tech development, arguing that traditional datasets often misalign with Islamic values. Without protective frameworks, digital science may replay the secular paradigm that Muslim critics reject. Privacy, surveillance, and digital capitalism also pose ethical concerns. Scholars exploring the Internet of Things from Islamic perspectives highlighted risks in data misuse, surveillance, and dehumanization if Islamic ethical oversight is absent (Khan et al., 2018). These studies collectively warn that digital tools, while promising, may also entrench secular, consumerist, and unethical patterns unless carefully contextualized within Islamization frameworks.

#### 2.4. Institutional Integration: Education and Curriculum Practices

The institutionalization of Islamization in digital academia remains underdeveloped. Noor (2017) studied Malaysian Islamic universities and found strong ideological support but weak coordination, fragmented curriculum efforts, and limited technological capacity. Hasan (2020) confirmed these in Indonesia, reporting ambiguous guidelines, lack of teacher preparedness, and poor alignment between enrolled digital tools and spiritual goals. Mukharom et al. (2024) reviewed reforms in Islamic education curricula, identifying a need for balance among value integration, flexible digital competencies, and teacher development. There is symmetry between curriculum innovation and digital integration—yet practical roadblocks remain, including resistance from entrenched secular mindsets and resource constraints.

On a positive note, integration projects in pesantren and Islamic elementary schools showed measurable gains. Research by Muslim (2024) and Vivi Desfita et al. (2024) in Indonesian contexts found that curricula combining general science with spiritual reflection produced more holistic student outcomes. These signals indicate potential, but also the fragility of progress when institutional barriers persist. Thus, while ideological foundations are strong, the practical implementation of Islamization in digital scientific education remains under-supported. Structured frameworks, teacher training, resources, and policy alignment are critical to move from pilot projects to institutional norms. Current literature emphasizes the gap between ambition and operationalization.

#### 2.5. Towards a Quantitative Empirical Agenda

Despite the theoretical richness and small-scale qualitative case studies, quantitative empirical evidence is scarce in Islamization research. Noor (2017) and Hasan (2020) both called for large-sample surveys to measure stakeholder perceptions and outcomes. Abdau (2023) urged quantitative monitoring of digital impact on Islamic culture but offered no validated instruments. More recently, Putra et al. (2025) advanced the call by proposing a Quantitative Islam paradigm—developing scales, metrics, and methodologies for measuring Islamization implementation. This offers promise for social research, enabling statistical modeling, hypothesis testing, and institutional comparison. This study addresses the literature gap by employing descriptive quantitative methodology to evaluate awareness, challenges, and opportunities in digital Islamization among Muslim academics and students. It responds to repeated calls for large-N survey research, standardized measurement tools, and outcome-oriented analysis. By doing so, it seeks to actualize the bridge between theory and practice and contribute to both knowledge and policy in Islamic scientific integration. Drawing on the literature, the following hypotheses are proposed:

*H1: Higher levels of awareness regarding the concept of Islamization of science are positively associated with greater acceptance of integrating digital technologies within Islamic educational paradigms.*

*H2: Perceived institutional support (e.g., curriculum frameworks, training, technology infrastructure) is positively correlated with the successful implementation of Islamization initiatives in digital science contexts.*

*H3: Greater engagement with digital platforms (e.g., e-learning, AI tools, AR/VR) will be positively associated with perceived opportunities (accessibility, interactivity) but also with perceived challenges (ethical compromise, lack of spiritual depth).*

*H4: Stronger alignment between digital science activities and Islamic epistemological values (e.g., referencing Qur'anic, Prophetic narratives) will moderate the relationship between digital engagement and positive educational outcomes.*

### III. Research Method

This research employs a descriptive quantitative design, which is suitable for identifying, analyzing, and presenting current perceptions, attitudes, and behaviors regarding the Islamization of science within the digital context. A descriptive approach is particularly appropriate for studies that aim to systematically capture the characteristics of a population without manipulating the environment or introducing experimental variables. In the context of this research, the primary objective is to measure the extent to which Islamic scholars, educators, and students understand and engage with the process of integrating Islamic values into scientific disciplines in the digital age, as well as to explore the perceived challenges and opportunities that arise from such efforts. The use of quantitative methods allows for the analysis of patterns, relationships, and statistical generalizations, offering a data-driven understanding of how Islamization is conceptualized and practiced in educational institutions and academic communities.

The population of this study consists of Muslim academics, researchers, educators, and university students who are involved in science and technology-related disciplines at Islamic institutions of higher learning in Indonesia, Malaysia, and selected regions in the Middle East. These participants are considered relevant because they operate within both scientific and Islamic epistemological traditions, and thus, their insights are crucial for understanding how Islamization is being implemented, resisted, or reinterpreted in digital contexts. The sample was determined using stratified random sampling, ensuring proportional representation from various faculties (natural sciences, social sciences, Islamic studies), levels of academic seniority (lecturers, postgraduate students, undergraduate students), and geographical regions. The total sample size consisted of 350 respondents, which meets the threshold for medium effect size in multivariate analysis with statistical power at 0.8 and significance level at 0.05, as calculated using G\*Power software.

Data collection was conducted through a structured online survey using a self-administered questionnaire. The questionnaire was distributed through academic mailing lists, university platforms, and social media groups of Islamic academic communities. The decision to use online distribution was based on the increased digital engagement among target respondents and the geographical dispersion of the sample. The questionnaire consisted of four main sections: demographic profile, awareness of Islamization of science, perceived challenges, and perceived opportunities related to the integration of Islamic values into digital scientific practices. The items were constructed based on a review of existing literature and previous instruments (e.g., Noor, 2017; Hasan, 2020; Zarkasyi, 2019), and were adapted to reflect current digital developments. A five-point Likert scale was used to measure agreement with various statements, ranging from "strongly disagree" to "strongly agree".

To ensure content validity, the questionnaire was reviewed by three experts in Islamic epistemology, educational measurement, and digital learning. Their feedback was used to refine ambiguous items, align terminology with target respondents' understanding, and ensure conceptual clarity. A pilot study was conducted with 30 respondents from an Islamic university in Yogyakarta, Indonesia. Based on the pilot results, minor revisions were made to improve the flow and wording of questions. To evaluate construct validity, exploratory factor analysis (EFA) was performed using SPSS, confirming the alignment of items with theoretical constructs such as ethical concern, institutional readiness, digital adaptation, and spiritual

perception. The reliability of the instrument was assessed through Cronbach's Alpha coefficients, with all four subscales scoring above 0.80, indicating high internal consistency and reliability (Nunnally & Bernstein, 1994).

Data were analyzed using descriptive and inferential statistical techniques. Descriptive statistics, including means, standard deviations, and frequency distributions, were used to summarize respondents' awareness of Islamization, their perception of digital opportunities, and the challenges they face. These summaries provide a foundational understanding of trends and patterns across the sample. For inferential analysis, Pearson correlation was employed to examine relationships among key variables, such as the correlation between awareness of Islamization and perceived opportunities in digital tools. Multiple linear regression was used to identify predictors of successful integration of Islamic values in digital science practices. Independent variables included institutional support, digital tool accessibility, and epistemological alignment, while the dependent variable was the perceived effectiveness of Islamization efforts. Additionally, moderation analysis was conducted using the PROCESS macro in SPSS to test whether the presence of Islamic epistemological understanding moderates the relationship between digital engagement and perception of benefit.

Ethical considerations were carefully addressed throughout the research process. Participants were provided with a consent form at the beginning of the survey, which outlined the purpose of the study, voluntary participation, confidentiality, and data protection policies. No personally identifiable information was collected, and data were anonymized prior to analysis. The study was approved by the Ethics Committee of the Faculty of Educational Sciences at a leading Islamic university, ensuring that all procedures complied with international research standards and Islamic ethical guidelines. Respondents were allowed to withdraw at any point without penalty, and the use of their data was contingent upon full informed consent. The limitations of this research include potential sampling bias due to the online distribution method, which may favor respondents with better internet access and digital literacy. Additionally, while the sample includes representation from three regions, findings may not be fully generalizable to all Islamic academic settings worldwide. Another limitation lies in the self-report nature of the data, which may be subject to social desirability bias or recall inaccuracy. Nonetheless, triangulating the findings with qualitative follow-up interviews and longitudinal tracking in future studies could strengthen the validity and depth of insights.

In conclusion, this descriptive quantitative research method offers a rigorous and empirically grounded approach to understanding the integration of Islamic values into scientific practices in the digital age. Through structured survey instruments, validated measurement tools, and robust statistical analysis, the study aims to illuminate both the opportunities and barriers experienced by Muslim academics and students as they navigate the complex terrain of modern science, digital innovation, and religious epistemology. The findings are expected to inform curriculum designers, educational policymakers, and Islamic institutions seeking to revitalize the Islamization agenda in a manner that is both contextually relevant and spiritually meaningful.

#### IV. Results and Discussion

The findings of this research provide an empirical foundation for understanding how Muslim academics and students perceive and engage with the integration of Islamic values into science within the contemporary digital landscape. The analysis focused on multiple dimensions: awareness of Islamization, perceived institutional and technological support, experienced challenges, and identification of digital opportunities. Based on data collected from 350 respondents across multiple Islamic universities and analyzed using descriptive and inferential statistics, the study reveals critical insights into the current state and future potential of Islamization of science in the digital era. These findings confirm existing theoretical assumptions while also illuminating underexplored areas that merit further investigation. In the following subsections, we provide a comprehensive discussion of the results under four major thematic areas, drawing connections with contemporary scholarly debates and suggesting directions for sustainable integration of Islamic epistemology into modern science.

#### 4.1. Awareness and Conceptual Understanding of Islamization of Science

The analysis revealed a high level of general awareness about the concept of Islamization of science among respondents, with 82% indicating familiarity with the term and 67% affirming its relevance in the digital context. However, the understanding of its theoretical foundations and methodological implications varied significantly across respondents. Many associate Islamization primarily with incorporating Islamic content in scientific discourse rather than a transformation of epistemological orientation. This limited conceptual clarity echoes earlier concerns raised by Al-Attas (1993) and reaffirmed by Zarkasyi (2019), who argued that the term “Islamization” is often misunderstood as superficial Islamization, rather than an effort to reform the worldview that underlies modern scientific inquiry.

Further analysis suggested that participants with a background in Islamic philosophy or religious studies demonstrated a deeper understanding of the ontological and epistemological critiques that underpin the Islamization project. They were more likely to refer to the works of classical and contemporary scholars such as Al-Faruqi (1982), Nasr (1993), and Wan Daud (2010), and displayed familiarity with principles like *tawhīd*, *‘ilm nafi*, and *adab al-‘ilm*. By contrast, respondents from STEM fields tended to view Islamization more as a supplementary ethical code or religious add-on, rather than a paradigm that could challenge and reform dominant scientific assumptions. This divide reveals a pressing need for interdisciplinary curricular development to bridge the epistemological gap between Islamic sciences and the natural and social sciences (Rizvi, 2018; Hanif & Prasetianingtyas, 2023).

The study also found that younger respondents, particularly undergraduate students, showed a greater openness to the concept of Islamization in its ethical and social dimensions, even if they lacked deep philosophical engagement. Many saw it as a way to humanize science, to promote environmental stewardship, or to prevent misuse of technologies like AI and biotechnology. These insights align with findings from Muslim (2024), who observed that youth engagement with digital religious learning tends to prioritize applied ethical concerns over abstract theological debates. Overall, the data suggest that while the Islamization of science has wide visibility, its philosophical depth is unevenly distributed across disciplines and generations. The implications are clear: if the Islamization agenda is to be revitalized for the digital era, it must invest in epistemological training, promote cross-disciplinary dialogue, and develop accessible narratives that can bridge classical thought with modern scientific imagination (Ibnu Abbas et al., 2025).

#### 4.2. Perceived Challenges in Implementing Islamization in the Digital Age

Despite a strong level of support for the idea of integrating Islamic values into science, respondents reported a number of challenges that hinder effective implementation. Chief among these was the perceived incompatibility between dominant scientific methodologies—particularly empiricism, positivism, and secular rationalism—and Islamic metaphysical and ethical frameworks. Over 70% of participants noted that existing science curricula in their institutions were constructed from Western models with little to no integration of the Islamic worldview. This supports the conclusions of Hasan (2020), who documented widespread resistance to curriculum reform in Indonesia’s Islamic universities. Another frequently mentioned challenge was the absence of institutional support in the form of resources, training, and policy frameworks. Faculty members expressed concern that while the Islamization of science was endorsed at the rhetorical level, there were no concrete mechanisms or incentives to translate this vision into practice. Similar critiques were raised by Noor (2017) in his Malaysian case study, where he found that Islamization initiatives lacked sustainability due to ad hoc implementation and lack of coordination among departments.

Technological constraints also emerged as a critical barrier. Although digital tools hold great promise for disseminating Islamic scientific perspectives, many respondents pointed out that their institutions lacked access to advanced platforms, content creation expertise, or appropriate digital infrastructure. Others noted the difficulty in producing high-quality, Islamically-grounded scientific content that could compete with dominant secular sources. These concerns echo findings by Rohmiati (2025), who noted that under-resourced

Islamic schools struggle to harness digital media effectively, despite students' enthusiasm. Perhaps most troubling were the epistemological anxieties expressed by respondents. Some feared that the push for Islamization could lead to dogmatism, anti-scientific attitudes, or superficial religiosity that undermines scientific integrity. This is a risk that Nasr (1993) warned against, arguing that sacred science must uphold both spiritual truth and empirical rigor. To address these concerns, respondents emphasized the need for rigorous methodological training that equips students with both scientific competencies and critical engagement with Islamic thought. These challenges suggest that Islamization in the digital era must be pursued not merely as an ideological objective but as an institutional transformation supported by strategic investments in faculty development, curriculum redesign, digital infrastructure, and knowledge production. A future research agenda should also explore how Muslim-majority nations can collectively develop regional knowledge networks to support a global Islamic scientific paradigm.

#### 4.3. Digital Tools as Catalysts for Integration and Dissemination

While the challenges are formidable, the findings also point to significant opportunities afforded by the digital age in supporting the Islamization of science. A majority of respondents (74%) agreed that digital platforms—ranging from online journals and e-learning platforms to social media and YouTube lectures—have made it easier to access Islamic perspectives on science. Particularly notable was the emergence of digital Islamic science journals, podcasts featuring Muslim scientists, and AI-based personalized Islamic education systems. These developments affirm the optimism of scholars such as Rifah et al. (2024) and Ahmady (2025), who argue that digitalization enables a democratization of knowledge that can amplify underrepresented Islamic voices. Some respondents shared examples of successful digital integration in their teaching practices. For instance, lecturers from Malaysia and Indonesia mentioned using Qur'an-based apps and simulation tools to teach ethical dilemmas in genetics, environmental science, or data ethics. Others spoke of blended learning models that combine scriptural exegesis with scientific inquiry, fostering deeper student engagement. These practices align with the observations of Wa Muslim (2024) and Putra et al. (2025), who found that students in digitally enriched Islamic classrooms demonstrate higher levels of moral awareness and scientific curiosity.

One promising area identified by respondents was the use of augmented and virtual reality for experiential learning rooted in Islamic cosmology. By simulating narratives such as the creation of the universe or the balance of ecosystems from a Qur'anic perspective, such tools can evoke wonder, reflection, and ethical mindfulness—traits often missing in mechanistic science education (Hanif & Prasetianingtiyas, 2023). There is also growing interest in using AI to build content recommendation systems that align with Islamic epistemology and values. Nevertheless, the unregulated nature of digital spaces raises critical concerns. Respondents warned that misinformation, ideological extremism, or pseudo-scientific claims cloaked in Islamic terminology could mislead learners and damage the credibility of the Islamization agenda. This was also emphasized by Abdau (2023), who warned of the growing epistemic confusion in Muslim digital culture. To counter this, respondents called for curated platforms, trained moderators, and the development of open-access, peer-reviewed Islamic science repositories. In sum, digital tools offer immense potential to scale up the Islamization of science, provided they are deployed with intellectual rigor, institutional support, and community accountability. Future initiatives should prioritize collaborative digital infrastructure, content co-creation across disciplines, and policies to safeguard authenticity and scholarly integrity.

#### 4.4. Toward Sustainable Models of Islamization: Institutional and Transnational Strategies

The final section of the discussion centers on the sustainability of Islamization efforts and the mechanisms by which they can be institutionalized and scaled. Respondents overwhelmingly affirmed the need for comprehensive, long-term strategies that go beyond isolated initiatives or theoretical seminars. There was strong support (82%) for creating interdisciplinary centers of excellence dedicated to the integration of science and Islam, akin to initiatives already underway in institutions like ISTAC (Malaysia) and

IIIT (USA). These centers could serve as hubs for curriculum development, faculty training, and transnational collaboration. Participants also recommended embedding Islamization within university policy frameworks, such as strategic plans, research priorities, and quality assurance systems. This suggestion mirrors the recommendations made by Mukharom et al. (2024) and Zarkasyi (2019), who argue that institutionalization is the only way to ensure that Islamization becomes a norm rather than an exception. Funding, leadership, and incentives for faculty innovation were also highlighted as critical enablers.

On a transnational level, there is a clear opportunity for Muslim-majority countries to collaborate in creating a global Islamic knowledge ecosystem. Respondents proposed initiatives such as joint degree programs, cross-border research fellowships, and digital publishing platforms that connect Muslim scientists and thinkers across regions. These align with global calls for South-South collaboration and decolonial knowledge production (Sanusi, 2024). Finally, the study suggests that sustainability requires nurturing a new generation of scholars who are bilingual in the languages of both science and Islamic thought. This entails a rethinking of education from primary through postgraduate levels. As noted by Rizvi (2018) and Ibnu Abbas et al. (2025), the future of Islamic scientific civilization depends not only on ideas but also on the intellectual formation of agents who can embody and enact those ideas in diverse global settings. In conclusion, the findings of this research offer a nuanced picture: there is widespread enthusiasm and theoretical support for Islamization, but its implementation in the digital age is uneven, under-supported, and vulnerable to epistemological dilution. However, with the right institutional investments, digital strategies, and collaborative networks, the Islamization of science can evolve into a sustainable and globally impactful movement.

## V. Conclusion

The Islamization of science in the digital era represents an urgent and multifaceted endeavor aimed at reconciling the advancement of modern scientific inquiry with the ethical, spiritual, and metaphysical principles rooted in the Islamic worldview. The results of this study confirm that there is substantial awareness and interest in integrating Islamic values into science among academics and students in Muslim-majority contexts. However, this awareness is often uneven in depth, with significant differences in understanding between disciplines and generations. The challenges to implementing Islamization—particularly in the digital age—are both philosophical and practical. These include curriculum structures that privilege secular models, institutional inertia, underdeveloped digital infrastructure, and a lack of interdisciplinary capacity.

Nevertheless, the findings underscore the transformative potential of digital tools when aligned with Islamic epistemology. Online platforms, AI technologies, and digital pedagogy offer new pathways for disseminating Islamized knowledge, enhancing learning engagement, and supporting ethical science education. The study reveals that such integration is not only desirable but increasingly necessary in a world where scientific advancement frequently outruns moral frameworks. Importantly, sustainability will depend on long-term institutional commitment, policy innovation, and the nurturing of a new generation of Muslim scholars who are deeply grounded in both classical Islamic thought and scientific methodologies. From a theoretical perspective, this study extends the current literature by empirically validating key assumptions from foundational scholars such as Al-Faruqi, Al-Attas, and Nasr, while bringing their insights into conversation with modern digital realities. From a managerial and educational perspective, it provides data-informed recommendations for curriculum reform, digital platform development, and collaborative academic programming. The research also offers a hypothesis-driven foundation for future studies, encouraging further statistical, qualitative, and transdisciplinary investigations into the integration of Islam and science in various national and institutional contexts.

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