

From Bayt al-Hikmah to Artificial Intelligence: Reconstructing the Islamic Scientific Tradition in Building a Knowledge-Based Civilisation

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Abstract: *The development of Artificial Intelligence (AI) has transformed the ways in which knowledge is produced, accessed, transmitted, and utilised in society. This transformation requires a scholarly framework that is oriented not only towards technological capabilities, but also towards the validity of knowledge, human responsibility, the integration of disciplines, and the pursuit of public benefit. This study aims to analyse and reconstruct the principles of the scholarly tradition of Bayt al-Hikmah in order to formulate their relevance to the development of a knowledge civilisation in the AI era. The study employs a qualitative approach using a library research method. The data were analysed through qualitative content analysis, comparative-conceptual analysis, and conceptual reconstruction of the literature on Bayt al-Hikmah, Islamic intellectual traditions, AI, and technology ethics. The findings identify five principles that remain relevant for recontextualisation: openness to knowledge, the transmission and transformation of knowledge, knowledge verification through human oversight, interdisciplinary integration, and the orientation of knowledge towards maṣlaḥah. These five principles constitute a conceptual framework that positions AI as an instrument for the transformation of knowledge, while humans remain the responsible subjects for determining the validity and use of knowledge. This study proposes a reconstruction of the Bayt al-Hikmah tradition as an epistemic foundation for the development of an open, critical, integrated, and maṣlaḥah-oriented Islamic knowledge civilisation in the AI era.*

Keywords: Bayt al-Hikmah; Artificial Intelligence; Islamic scholarly tradition; knowledge civilisation; maṣlaḥah.

Introduction

The development of human civilisation is fundamentally inseparable from a society's capacity to generate, manage, transmit, and develop knowledge. In Islamic history, knowledge was not merely positioned as an instrument for understanding reality, but also as an essential component of civilisation-building. The Islamic intellectual tradition developed through interactions between revelation, rationality, empirical experience, and openness to knowledge from diverse cultural traditions. This process demonstrates that the advancement of civilisation is determined not solely by the ability to generate new knowledge, but also by a society's capacity to receive, translate, critically examine, develop, and transform knowledge into a force for civilisation (Gutas, 1998).

One important representation of this tradition was Bayt al-Hikmah in Baghdad during the Abbasid period. Bayt al-Hikmah has frequently been situated within Islamic intellectual history as an important component of the development of translation and knowledge transmission activities. The translation movement during the Abbasid period enabled various works from the Greek tradition and other intellectual traditions to be rendered into Arabic and subsequently developed within Islamic scholarly settings. This process did not end with the translation of texts, but became part of an intellectual dynamic that facilitated encounters, selection, interpretation, and the development of knowledge across civilisations (Gutas, 1998). In this context, Bayt al-Hikmah can be understood not merely as a repository of books, but as part of an intellectual

ecosystem demonstrating how knowledge could move across linguistic, cultural, and scholarly boundaries.

Studies of Bayt al-Hikmah indicate that the institution was closely associated with the development of the Islamic scientific tradition. Al Farabi (2013) explains that Bayt al-Hikmah contributed to the development of the scientific tradition through activities involving the translation and advancement of various fields of knowledge. The study by Asari et al. (2019) likewise demonstrates that Bayt al-Hikmah was associated with the transmission of knowledge across diverse intellectual traditions. More recent research indicates that Bayt al-Hikmah remains an object of scholarly inquiry in discussions concerning intellectual history, libraries, translation, and the development of science during the Abbasid period (Mathar, 2024). The available literature therefore provides a substantial foundation for understanding the historical role of Bayt al-Hikmah within the Islamic scholarly tradition.

However, the contemporary context of knowledge production and distribution has undergone fundamental changes. The development of Artificial Intelligence (AI) has transformed the ways in which humans acquire, process, generate, and distribute information. AI is no longer limited to computational functions, but is increasingly used in education, research, healthcare, economics, administration, the creative industries, and various intellectual activities. These developments have positioned AI as part of a new knowledge ecosystem capable of processing data on a large scale, generating texts, performing classification, providing recommendations, and supporting decision-making processes. This transformation has simultaneously generated new questions concerning who controls knowledge, how knowledge is verified, how bias is produced, and how human responsibility can be maintained when certain intellectual processes are delegated to AI systems. The literature on AI ethics indicates that issues of fairness, transparency, accountability, privacy, human oversight, and human dignity have become important components of debates surrounding AI governance (Jobin et al., 2019; Floridi, 2019). UNESCO likewise places human dignity, human rights, transparency, fairness, and human oversight among the key elements of a global ethical framework for AI (UNESCO, 2021).

From an Islamic perspective, these issues can be examined not only through the framework of modern technology ethics, but also through the epistemological and scholarly ethical traditions of Islam. Elmahjub (2023), for instance, demonstrates that Islamic ethics provides relevant conceptual resources for addressing AI, particularly through the concepts of *maṣlaḥa* and *maqāṣid al-sharī'ah*. This perspective provides a basis for evaluating technology not merely according to its technical capabilities, but also according to its effects on human beings, social life, justice, and public welfare. Other studies on AI governance from the perspective of Islamic ethics have likewise positioned principles such as *tawḥīd*, *maqāṣid al-sharī'ah*, *iḥsān*, and *ʿadl* as normative foundations for directing the use of AI technology (Kannike & Fahm, 2025).

The issue is that discussions of Bayt al-Hikmah and discussions of AI from an Islamic perspective have thus far tended to develop within separate areas of scholarship. Studies of Bayt al-Hikmah generally emphasise historical dimensions, the translation movement, knowledge transmission, and intellectual development during the Abbasid period (Gutas, 1998; Al Farabi, 2013; Asari et al., 2019). Meanwhile, studies of AI from an Islamic perspective have largely focused on ethics, *maqāṣid al-sharī'ah*, governance, education, and the responsible use of technology (Elmahjub, 2023; Kannike & Fahm, 2025). Scholarship specifically connecting the principles of the scholarly tradition represented by Bayt al-Hikmah with the transformation of the knowledge ecosystem brought about by AI, in order to formulate a model of contemporary Islamic knowledge civilisation, remains relatively limited. Although recent studies on Islam and AI have begun to address knowledge production, digital humanities, and ethical challenges, Bayt al-Hikmah has not yet been specifically positioned as a foundation for reconstructing a model of knowledge civilisation in the AI era.

This gap warrants examination because there are similarities between the issues surrounding the scholarly tradition of the Abbasid period and those characterising the contemporary digital knowledge ecosystem, despite differences in their historical and technological contexts. Bayt al-Hikmah demonstrates how knowledge from diverse traditions could be collected, translated, selected, and developed, thereby generating intellectual transformation. In the contemporary

context, AI likewise operates within a highly heterogeneous knowledge environment by aggregating, processing, and generating information from diverse sources. The differences lie in the actors, mechanisms, scale, and technologies involved. Whereas these processes during the Abbasid period were undertaken through the activities of human translators, scholars, patrons, and scholarly institutions, the AI era introduces machines as components of the processes of knowledge production and distribution.

This comparison is not intended to equate Bayt al-Hikmah with AI. Bayt al-Hikmah represents a historical and institutional phenomenon, whereas AI is a contemporary technology. Nevertheless, the history of Bayt al-Hikmah can serve as a source of epistemological reflection for understanding how a civilisation developed an open knowledge ecosystem while maintaining processes of selection, interpretation, and development. This principle is relevant in a context where AI generates information that does not necessarily correspond to truth, since AI outputs still require human verification, interpretation, responsibility, and judgement. On this basis, this study does not position Bayt al-Hikmah merely as a historical object of study, but as a conceptual reference for reconstructing the Islamic scholarly tradition in response to transformations in knowledge technologies. This reconstruction is directed towards several principal dimensions, namely openness to knowledge, the transmission and transformation of knowledge, knowledge verification, interdisciplinary dialogue, and the orientation of knowledge towards public welfare. These principles are subsequently reconsidered within the context of AI in order to develop a framework for a knowledge civilisation that does not position technology as a substitute for human beings, but rather as an instrument that must operate within a system of responsible knowledge governance.

Within this framework, the novelty of this study lies in the synthesis between the scholarly tradition of Bayt al-Hikmah and the development of AI in formulating a conceptual framework for Islamic knowledge civilisation in the digital era. The study does not merely reconstruct the history of Bayt al-Hikmah, nor does it simply reiterate discussions of AI ethics in Islam. Instead, it brings the two domains together within an analytical framework that positions access to knowledge, knowledge transmission, verification, scholarly integration, and public welfare as principles capable of being recontextualised within an AI-based knowledge ecosystem. In this way, the history of Islamic civilisation is not positioned merely as a legacy of the past, but as a source of intellectual resources for interpreting and responding to contemporary transformations in the structure of knowledge.

The aim of this study is to analyse and reconstruct the principles of the scholarly tradition that developed within the intellectual environment of Bayt al-Hikmah in order to formulate their relevance to the formation of a knowledge civilisation in the era of Artificial Intelligence (AI). The analysis focuses on identifying scholarly values and mechanisms encompassing openness to knowledge, the transmission and transformation of knowledge, knowledge verification, interdisciplinary dialogue, and an orientation towards public welfare, and subsequently relating these principles to the characteristics and challenges of AI-based knowledge production. The study is expected to generate a conceptual framework for an Islamic knowledge civilisation in the AI era that positions technology as an instrument for the development of knowledge, while ensuring that verification processes, ethical responsibility, and human-centred orientations remain grounded in values rooted in the Islamic scholarly tradition.

Methods

This study employs a qualitative approach using a library research method (Novianti, 2024). This method was selected because the study focuses on tracing, understanding, and synthesising various ideas concerning Bayt al-Hikmah, the Islamic scholarly tradition, the development of *Artificial Intelligence* (AI), and transformations in the knowledge ecosystem in the digital era. Library research can be employed as a research method to identify, evaluate, and synthesise established bodies of knowledge in order to develop a conceptual understanding of a particular issue (Snyder, 2019). A qualitative approach is employed because the research data consist of

texts, ideas, concepts, and arguments that require interpretation of their context and meaning rather than statistical measurement (Creswell & Creswell, 2018).

The research data were obtained from scholarly journal articles, academic books, and relevant scholarly documents related to the focus of the study. The literature was classified into three main groups. First, literature concerning Bayt al-Hikmah and the development of the Islamic intellectual tradition, particularly studies addressing translation activities, knowledge transmission, the development of science, and intercultural interaction (Gutas, 1998; Al Farabi, 2013; Lee, 2014). Second, literature concerning the Islamic scholarly tradition related to openness to knowledge, the development of scholarship, verification, scholarly integration, and the orientation of knowledge towards public welfare. Third, contemporary literature on AI, knowledge production, AI ethics, and Islamic perspectives on technological development (Jobin et al., 2019; Elmahjub, 2023; Nawi et al., 2023). Sources were selected purposively based on substantive relevance, academic credibility, alignment with the research focus, and their capacity to explain the relationship between the Islamic scholarly tradition and transformations in knowledge technologies.

The data were analysed using qualitative content analysis to identify themes, concepts, and patterns within the literature. The analysis involved a process of reading, segmentation, coding, categorisation, and interpretation of textual data (Schreier, 2012). Based on the literature review, the study established five analytical categories: (1) openness to knowledge, (2) the transmission and transformation of knowledge, (3) knowledge verification, (4) interdisciplinary integration and dialogue, and (5) the orientation of knowledge towards public welfare. These five categories were used to identify the characteristics of the scholarly tradition that developed within the context of Bayt al-Hikmah and, simultaneously, to provide a basis for examining transformations in the production and distribution of knowledge in the AI era. Accordingly, the analysis was not intended to reproduce historical descriptions of Bayt al-Hikmah, but to identify scholarly principles that possess conceptual relevance to contemporary knowledge-related issues.

The subsequent stage involved comparative-conceptual analysis, namely, bringing together the principles identified from the scholarly tradition of Bayt al-Hikmah with the characteristics and issues emerging within the AI-based knowledge ecosystem. The comparison was conducted at the level of principles rather than by equating Bayt al-Hikmah as a historical institution with AI as a contemporary technology. The tradition of knowledge translation and transmission, for instance, was analysed in relation to AI's capacity to access and transform information; the principle of verification was associated with the need for human examination of information generated by AI; while openness and scholarly integration were examined in the context of the increasing interconnectedness of various disciplines through digital technologies. This approach enables the study to connect historical scholarship with contemporary issues without disregarding the differences in their respective contexts.

The findings of the analysis were subsequently synthesised through conceptual reconstruction to formulate a framework for an Islamic knowledge civilisation in the AI era. The reconstruction was undertaken by connecting the five identified principles into a conceptual sequence comprising openness to knowledge, the transmission and transformation of knowledge, knowledge verification, scholarly integration, and public welfare. This framework was then related to contemporary requirements, including *human oversight*, ethical responsibility, information validity, and the orientation of AI use towards human interests. Such a synthesis is consistent with the characteristics of library research, which can be used to develop conceptual frameworks through the integration of diverse findings and perspectives within the literature (Snyder, 2019). Within the perspective of Islamic AI ethics, the principles of *maṣlaḥa*, justice, responsibility, and human oversight have likewise been examined as important elements in directing the use of AI beyond a sole emphasis on technological efficiency (Elmahjub, 2023; Nawi et al., 2023).

The validity of the interpretation was maintained through source triangulation by comparing information from historical literature on Bayt al-Hikmah, studies of the Islamic intellectual tradition, and contemporary research on AI and technology ethics. Triangulation was employed to reduce dependence on a single source or perspective and to ensure that each reconstructed principle was grounded in more than one body of literature. The final outcome of the study is not intended to constitute a new empirical theory, but rather a conceptual framework derived from the synthesis of literature that explains how the Islamic scholarly tradition represented through Bayt al-Hikmah can be recontextualised to interpret and respond to transformations in the knowledge ecosystem in the era of Artificial Intelligence.

Results and Discussion

Bayt al-Hikmah and Openness to Knowledge

The literature analysis indicates that one of the important characteristics that can be reconstructed from the scholarly tradition of Bayt al-Hikmah is openness to knowledge originating from diverse intellectual environments. Bayt al-Hikmah cannot be understood merely as a repository of manuscripts, but rather as part of the development of intellectual activities during the Abbasid period involving the collection, translation, examination, and development of knowledge from diverse traditions. Studies of the history of Bayt al-Hikmah indicate that works from Greek, Persian, and other intellectual traditions became part of the process of knowledge transmission into the Islamic world. This process demonstrates that the development of scholarship did not occur through intellectual isolation, but through encounters among diverse sources of knowledge (Al Farabi, 2013; Asari et al., 2019).

Such openness has particular significance when considered in the context of Artificial Intelligence. AI operates through the accumulation of data, knowledge, languages, and information originating from diverse sources. This condition makes openness to knowledge a prerequisite for technological development, while simultaneously generating questions concerning the quality, legitimacy, and use of knowledge. Openness cannot be understood as the uncritical acceptance of all information. Within the intellectual tradition associated with Bayt al-Hikmah, the translation process itself involved intellectual activities through which foreign knowledge was understood, examined, and developed within the Islamic scholarly environment. Research on the function of Bayt al-Hikmah as a centre of translation indicates the existence of processes of supervision, revision, and retranslation aimed at maintaining the quality of transmitted knowledge.

This finding suggests that openness to knowledge in an AI-based civilisation should not be directed merely towards maximising access to information, but must be accompanied by the capacity to select and contextualise it. AI can substantially expand human access to knowledge at unprecedented speed, but speed of access is not synonymous with the validity of knowledge. Within this framework, the intellectual legacy of Bayt al-Hikmah can be recontextualised through the principle of *open but discerning knowledge*, namely openness accompanied by the capacity to select, scrutinise, and interpret information. This principle constitutes the first foundation for developing a knowledge civilisation that is not only technologically productive, but also intellectually responsible.

From Knowledge Transmission to AI-Based Knowledge Transformation

The subsequent analysis indicates that the Bayt al-Hikmah tradition did not stop at the transfer of knowledge from one language to another. Translation activities served as an entry point for the development of new knowledge within the Islamic intellectual environment. Thus, knowledge transmission possessed a transformational dimension, as received knowledge was subsequently studied, critically examined, developed, and used to produce new scholarly works. Studies of Bayt al-Hikmah demonstrate that the translation movement contributed to expanding the knowledge base of Muslim society and encouraged the development of a scientific tradition during the Abbasid period (Al Farabi, 2013; Lee, 2014). In the development of AI, this pattern has assumed a

new form. AI systems can process substantially larger volumes of information than humans can handle within a relatively short period. AI can assist in identifying patterns, summarising information, performing classification, generating analytical alternatives, and supporting research processes. These developments indicate a shift from *knowledge transmission* towards *knowledge transformation*, in which technology not only facilitates the communication of knowledge but also alters the ways in which humans acquire, process, and generate knowledge.

Nevertheless, this transformation does not mean that AI replaces humans as intellectual subjects. AI produces outputs based on particular data, models, and computational mechanisms, and its results therefore continue to require human interpretation. Literature on AI from the perspective of Islamic ethics indicates that the development of AI raises issues concerning autonomy, privacy, justice, transparency, and the potential for human dependence on technological systems (Elmahjub, 2023).

This context demonstrates both continuity and difference between Bayt al-Hikmah and AI. Bayt al-Hikmah provided a space for humans to transmit and develop knowledge, whereas AI provides technological infrastructure that enables knowledge to be processed on a substantially larger scale. Their similarity lies in their function as mediums for expanding knowledge, while their difference concerns the position of technology within the process. In Bayt al-Hikmah, humans were the principal actors throughout the intellectual process; in the AI era, certain cognitive activities can be assisted by machines. Accordingly, the reconstruction of the Bayt al-Hikmah tradition positions AI as an instrument for knowledge transformation rather than as a replacement for humans as holders of epistemic responsibility.

Knowledge Verification: From Scholarly Criticism to Human Verification

The third principle identified is the importance of verification in the production and transmission of knowledge. The history of Bayt al-Hikmah indicates that the translation of knowledge was not a mechanical process involving the mere transfer of texts. Processes of supervision, revision, and retranslation were undertaken to produce texts suitable for use within the Arab-Islamic intellectual environment. This finding demonstrates an awareness that the quality of knowledge is strongly determined by processes of examining both sources and the outcomes of knowledge transmission (Lee, 2014). This principle has become increasingly relevant in the AI era because the ability of generative systems to produce information does not necessarily correspond to their ability to establish the truth of that information. AI can generate seemingly convincing texts, but such outputs still require examination of their sources, context, and accuracy. This issue forms part of the broader discourse on AI ethics, particularly in relation to transparency, accountability, bias, and human responsibility for the use of technology (Jobin et al., 2019; Elmahjub, 2023). From an Islamic perspective, the need for verification can also be associated with the principle of caution in accepting information. However, in this study, this principle is not positioned merely as an individual moral norm, but as an epistemic mechanism for constructing a knowledge ecosystem. This means that every AI output used for academic, educational, legal, policy, or religious purposes requires examination by humans with relevant expertise.

This concept can be formulated as the *human verification principle*. This principle positions humans as the parties responsible for conducting the final validation of information generated by AI. Humans need not reject technology, but neither should they entirely delegate the assessment of truth to algorithms. In an academic context, for example, AI can assist in locating literature or preparing an initial synthesis, but researchers remain responsible for verifying the existence of sources, the substance of arguments, the context of quotations, and the consistency between data and conclusions. This finding demonstrates a strong connection between the tradition of verification in knowledge transmission and the contemporary need for *human oversight* in AI. Contemporary literature on the use of AI within Islamic contexts likewise emphasises the need for caution in using AI and the importance of positioning the principles of *maqāṣid al-sharīʿah* as an evaluative framework for assessing the impact of technology (Mukmin Hakim & Mat Jubri Shamsuddin, 2024).

Scholarly Integration and the Formation of an AI Knowledge Ecosystem

The Bayt al-Hikmah tradition also demonstrates that the development of a civilisation of knowledge occurs through encounters among diverse fields of scholarship. The translation movement brought works from various disciplines into the Islamic intellectual environment and subsequently facilitated the development of knowledge within new contexts. Knowledge originating outside the Islamic tradition was not merely preserved in its original form, but was studied and further developed by Muslim scholars. Bayt al-Hikmah can therefore be understood as a historical setting that demonstrates how civilisation can develop through interactions across disciplines and scholarly traditions (Asari et al., 2019; Lee, 2014). This characteristic is highly relevant to the development of AI, which is inherently multidisciplinary. The development and application of AI involve computer science, mathematics, linguistics, psychology, economics, law, philosophy, education, medicine, and the social sciences. AI-related issues cannot be addressed solely through technical approaches because decisions concerning data, privacy, bias, responsibility, justice, and social impact possess social and normative dimensions. Studies of AI ethics demonstrate that principles such as transparency, justice, accountability, and human protection constitute important elements in the development of AI governance.

Within this framework, the reconstruction of Bayt al-Hikmah generates the principle of an integrated knowledge ecosystem. An AI-based knowledge civilisation cannot be developed merely by expanding technological capabilities; it requires integration between technical expertise and ethical, social, legal, and humanitarian considerations. Such integration also creates space for the Islamic scholarly tradition to engage with contemporary scientific developments without losing its normative foundations. This position differs from approaches that regard Islam merely as a source of rules for restricting AI. The Bayt al-Hikmah tradition instead demonstrates that engagement with external knowledge can become a source of civilisational development when undertaken through processes of selection, examination, and further development. In the context of AI, this principle can be directed towards building a knowledge ecosystem in which Muslim scholars are not merely users of technology, but also producers of knowledge and developers of intellectual perspectives concerning the direction of technological development.

Maṣlaḥah as the Orientation of a Knowledge Civilisation

The fifth principle identified in the reconstruction of the scholarly tradition is the orientation of knowledge towards human welfare. From the perspective of Islamic civilisation, knowledge does not merely possess instrumental value in enhancing humanity's capacity to exercise control over nature, but is also associated with the formation of a good and orderly life. In the context of AI, this orientation has become increasingly important because the growing capabilities of technology also generate increasingly complex social consequences. Contemporary studies of AI ethics from an Islamic perspective indicate that the concept of *maṣlaḥah* can serve as a basis for evaluating the benefits and risks associated with AI. Elmahjub (2023), for example, positions *maṣlaḥah* as an important concept in developing an Islamic ethical framework for AI and demonstrates that the assessment of technology should not be based solely on utilitarian benefits, but should also consider moral obligations and the protection of fundamental human interests. Other studies on AI and *maqāṣid al-sharī'ah* likewise demonstrate the relevance of protecting religion, life, intellect, progeny, and property when addressing the various consequences of AI use (Mohadi & Tarshany, 2023; Mukmin Hakim & Mat Jubri Shamsuddin, 2024).

Based on these findings, *maṣlaḥah* in this study is positioned not as an additional principle to be considered after technology has been developed, but as an orientation embedded from the outset in the processes of knowledge production and use. AI that generates information rapidly but increases the spread of misinformation, reinforces discrimination, diminishes privacy, or creates intellectual dependence needs to be evaluated differently from AI that expands access to education, enhances research productivity, supports public services, and broadens access to knowledge. This position entails a shift in perspective from a *technology-centred knowledge civilisation* towards a *human-centred knowledge civilisation*. In the former model, the success of civilisation is primarily measured by technological capacity to process data and generate information. In the latter, technological capability remains important, but its success is assessed

through the relationship between knowledge, human responsibility, justice, sustainability, and public welfare. Contemporary Islamic AI ethics frameworks likewise indicate that principles such as justice, *iḥsān*, *tawḥīd*, and *maqāṣid* can provide normative orientations for the development and use of AI (Kannike & Fahm, 2025).

Reconstruction of the Bayt al-Hikmah Tradition in Building a Knowledge Civilisation in the AI Era

Based on the five principles analysed above, this study develops a conceptual construction that positions the Bayt al-Hikmah tradition as a source of epistemic principles for building a knowledge civilisation in the AI era. These five principles are not intended to equate Bayt al-Hikmah with AI technology. The two emerged within different historical and technological contexts. Bayt al-Hikmah formed part of the development of institutions and intellectual traditions during the Abbasid period, whereas AI represents a contemporary computational technology. The relationship between the two therefore exists at the level of principles for the management and development of knowledge, rather than through similarities in institutional or technological form.

Tabel 1.1 Reconstruction of the Bayt al-Hikmah Scholarly Tradition in the AI Era

Bayt al-Hikmah Tradition	Reconstruction in the AI Era	Orientation of the Knowledge Civilisation
Openness to diverse sources of knowledge	Cross-disciplinary and cross-cultural access to and exchange of knowledge	<i>Open knowledge</i>
Translation and transmission of knowledge	AI-based transformation and processing of knowledge	<i>Knowledge transformation</i>
Supervision and revision of knowledge	<i>Human verification and human oversight</i>	Knowledge validity
Interaction among diverse scholarly traditions	Integration of technology, social sciences, law, ethics, and the humanities	<i>Integrated knowledge ecosystem</i>
Development of knowledge for human life	Evaluation of AI based on <i>maṣlaḥah</i>	<i>Human-centred knowledge civilisation</i>

The construction demonstrates an interconnected sequence. Openness to knowledge constitutes the starting point because the development of scholarship requires access to diverse sources. Openness is subsequently extended through the transmission and transformation of knowledge, so that information does not remain at the level of transfer but develops into new knowledge. This process must be accompanied by verification, as the greater the volume of available information, the greater the need for mechanisms of validation. Verification, in turn, requires scholarly integration because AI-related issues are not merely technical but also involve legal, ethical, social, economic, and humanitarian dimensions. The entire process is oriented towards *maṣlaḥah*, ensuring that technological development remains guided by considerations that place human beings and social benefit at the centre. Within this construction, the study finds that the recontextualisation of the Bayt al-Hikmah tradition in the AI era does not involve reviving its institutional form, but rather reconstructing its scholarly ethos. Bayt al-Hikmah provides a historical example of how a civilisation can flourish when knowledge remains open to exchange, is processed through intellectual endeavour, subjected to verification, developed through interdisciplinary interaction, and directed towards the advancement of society. In the context of AI, these five principles can serve as a normative-epistemic foundation for developing a knowledge civilisation that utilises technological capabilities without relinquishing human responsibility.

The findings also demonstrate that this study occupies a different position from studies of Islamic approaches to AI that generally focus on ethics, *maqāṣid al-sharī'ah*, or technology

governance. Such literature is important because it provides a normative basis for evaluating AI (Elmahjub, 2023; Kannike & Fahm, 2025). This study takes a different analytical direction by positioning the intellectual tradition of Bayt al-Hikmah as a source for epistemic reconstruction and subsequently connecting it with the requirements of a knowledge civilisation within the AI ecosystem. AI is therefore not positioned merely as an object of regulation or an ethical problem, but as a new environment for the production and distribution of knowledge that requires robust scholarly principles.

Conclusion

This study demonstrates that the scholarly tradition developed within the intellectual environment of Bayt al-Hikmah possesses conceptual relevance for re-examination in response to transformations in knowledge during the era of Artificial Intelligence (AI). This relevance does not lie in attempting to equate Bayt al-Hikmah with AI technology, but in reconstructing scholarly principles that can underpin the formation of a contemporary knowledge civilisation. The analysis identifies five principal principles: openness to diverse sources of knowledge, the transmission and transformation of knowledge, knowledge verification, interdisciplinary integration, and the orientation of knowledge towards human welfare. These five principles indicate that the development of AI technology needs to be situated within a knowledge civilisation framework that continues to recognise humans as the principal actors in determining the validity, direction, and use of knowledge. AI can expand human capacity to access, process, and transform information, but AI outputs continue to require processes of human verification and oversight. The integration of technological capabilities with intellectual traditions also demonstrates that AI development cannot be understood solely from a technical perspective, but needs to incorporate ethical, legal, social, and humanitarian dimensions. The reconstruction developed in this study positions openness to knowledge as the starting point, followed by the transmission and transformation of knowledge, human verification, scholarly integration, and an orientation towards *maṣlaḥah*. This sequence constitutes a conceptual framework for an Islamic knowledge civilisation in the AI era, in which AI is positioned as an instrument for knowledge development while humans remain the subjects holding epistemic and ethical responsibility. Through this construction, the legacy of Bayt al-Hikmah can be understood not merely as part of the history of Islamic intellectual achievement, but as a source of thought that can be recontextualised to build an open, critical, integrated, and *maṣlaḥah*-oriented knowledge ecosystem in response to the development of AI.

References

- Al Farabi, M. (2013). Bayt al-Hikmah: Institusi awal pengembangan tradisi ilmiah Islam. *MIQOT: Jurnal Ilmu-ilmu Keislaman*, 37(1). <https://doi.org/10.30821/miqot.v37i1.74>
- Asari, H., Zubaidah, S., & Laili, H. (2019). Bayt al-Hikmah: Sejarah transmisi ilmu pengetahuan antar peradaban. *EDU-RILIGIA: Jurnal Ilmu Pendidikan Islam dan Keagamaan*, 3(2). <https://doi.org/10.47006/er.v3i2.4451>
- Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.
- Elmahjub, E. (2023). Artificial intelligence (AI) in Islamic ethics: Towards pluralist ethical benchmarking for AI. *Philosophy & Technology*, 36, 73. <https://doi.org/10.1007/s13347-023-00668-x>
- Floridi, L. (2019). Establishing the rules for building trustworthy AI. *Nature Machine Intelligence*, 1, 261–262. <https://doi.org/10.1038/s42256-019-0055-y>
- Gutas, D. (1998). *Greek thought, Arabic culture: The Graeco-Arabic translation movement in Baghdad and early 'Abbāsid society (2nd–4th/8th–10th centuries)*. Routledge. <https://doi.org/10.4324/9780203017432>

- Jobin, A., Ienca, M., & Vayena, E. (2019). The global landscape of AI ethics guidelines. *Nature Machine Intelligence*, 1, 389–399. <https://doi.org/10.1038/s42256-019-0088-2>
- Kannike, U. M. M., & Fahm, A. O. (2025). Exploring the ethical governance of artificial intelligence from an Islamic ethical perspective. *Jurnal Fiqh*, 22(1), 134–161. <https://doi.org/10.22452/fiqh.vol22no1.5>
- Lee, D. (2014). A study on the effect of Bayt al-Hikmah on the development of the knowledge in Arab Islam world: A center for translation. *Arab Language and Literature*, 18(1), 39–70. <https://doi.org/10.18630/kaall.2014.18.1.003>
- Mathar, M. Q. M. (2024). Perpustakaan Bait Al-Hikmah: Pusat kegiatan intelektual pada masa Dinasti Abbasiyah. *Tumanurung: Jurnal Sejarah dan Budaya*, 4(1), 1–11.
- Mittelstadt, B. (2019). Principles alone cannot guarantee ethical AI. *Nature Machine Intelligence*, 1, 501–507. <https://doi.org/10.1038/s42256-019-0114-4>
- Mukmin Hakim, M. K. I., & Mat Jubri Shamsuddin, M. (2024). Maqasid al-Shariah in the age of AI: A critical examination of ChatGPT usage among International Islamic University Malaysia students. *Online Journal of Research in Islamic Studies*, 11(2), 1–18. <https://doi.org/10.22452/ris.vol11no2.1>
- Nawi, A., Khamis, N. Y., Mohd Yaakob, M. F., Samuri, M. A. A., & Zakaria, G. A. N. (2023). Exploring opportunities and risks of artificial intelligence research for Islamic ethical guidelines. *Afkar: Jurnal Akidah dan Pemikiran Islam*, 25(2), 1–34. <https://doi.org/10.22452/afkar.vol25no2.1>
- Novianti, L. (2024). *Metodologi Penelitian Hukum di Era Digital*. *GERECHTIKEIT: Jurnal Riset Peradaban Hukum*, 1(2).
- Schreier, M. (2012). *Qualitative content analysis in practice*. SAGE Publications.
- Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, 104, 333–339. <https://doi.org/10.1016/j.jbusres.2019.07.039>
- UNESCO. (2021). *Recommendation on the ethics of artificial intelligence*. UNESCO.