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The Future of Hadith Studies in The Digital Age: Opportunities and Challenges

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Abstract

In this study that we have conducted, which is concerned with the digital progress in the study of Hadith science, which is related to Islamic studies, with a focus on the social and religious opportunities and challenges that this shift from ancient studies to a new type of studies in Hadith science brings, we begin our study by providing an overview of the religious and historical importance as well as the scientific importance of one of the most important Islamic sciences, which is Hadith science in Islamic studies. This study indicates the potential of digital technology in reshaping the traditional methodology of Hadith science.In this research paper, we will discuss the benefits that digital technology offers, especially in preserving ancient manuscripts that contain Prophetic hadiths and facilitating access to comprehensive databases, i.e. facilitating the researcher's access to a huge number of hadiths and using artificial intelligence to analyze the complex networks of narrators and classifying hadiths according to their sources This research also addresses the challenges facing the development of Hadith science between the past and the present, i.e. between the digitization of Hadith science and the old methods used in transferring and studying Hadith science, such as preserving the accuracy of texts when converting them from the paper system to the digital system, as well as the potential challenges in designing algorithms and ethical issues related to digital interpretations of modern texts or Hadith texts.This research paper also emphasizes the need to develop standards that include guarantees for trust, authenticity and honesty, and it addresses the social impacts resulting from the spread of hadiths via social media over the Internet, which may lead to misuse of these tools or misinterpretations of hadiths or by publishing unverified hadiths. In the future vision of this research paper, we envision this study as an integration between the traditional style in the science of hadith and modern technology and digital tools used in the science of Islamic hadith. It also contributes to establishing research networks and enhancing cooperation between hadith scholars and scholars in the digital technology system. At the end of the research paper, we analyzed a comparison between traditional and digital styles, focusing on the weaknesses and strengths of each of these two approaches. In the end, the study shows the potential of digital innovation in developing the science of hadith, provided that this modern system is used with respect for scientific accuracy and ethical standards to avoid using it in unethical and unscientific ways.

Keywords: *opportunities; hadith; technology.*

Introduction

The science of Islamic Hadith is considered one of the basic pillars of Islamic heritage, as it is considered one of the basic means of transmitting and documenting the Noble Prophetic Sunnah of the Messenger Muhammad, may God bless him and grant him peace (1).

The Noble Hadith is considered the second legislation after the Holy Quran. The science of Hadith expression is a series of methodologies and controls that Muslim scholars have developed over the centuries in order to verify the authenticity of these Noble Prophetic Hadiths through a series of studies called the chain of transmission or the text of the Hadith. Consequently, this has led to the emergence of a highly accurate knowledge institution that has contributed to effectively creating the foundations of the Prophetic Sunnah (2).

The development of this science over generations by scholars who have striven to interpret and document the Hadiths has led to a large accumulation of Islamic sciences and knowledge and left a solid scientific legacy (3).

The development of modern sciences and the remarkable and rapid progress in the system of technology, communications and information technologies has made it possible to reconsider the old traditional methods followed by scholars and researchers in studying the science of the Prophetic Hadith. It has become possible to develop this approach of studies in line with the current modern digital age, as digital technologies such as artificial intelligence systems, information technology systems and data analysis have made it possible to understand, classify and analyze the Prophetic Hadiths (4).

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The honorable in modern ways that were not possible in the past centuries,

Digital studies also contribute to preserving the Islamic heritage by preserving manuscripts and ancient religious texts that contain a wealth of hadiths and Islamic texts, thus ensuring that the original sources remain away from damage and loss over time. Digital technology also facilitates access to texts by researchers and readers, which enhances research opportunities and increases the spread of knowledge (1).

There are major challenges facing these technological techniques, and despite the great potential in modern development, on the other hand, dealing with this type of texts requires serious, highly accurate, and superior scientific integrity, with the resulting ethical consequences, as a simple error in digital copying or analysis may lead to distortion of religious and linguistic meanings and the dissemination of inaccurate information, which in turn leads to the spread of inaccurate science (1).

On the other hand, the use of artificial intelligence in religious sciences raises several questions about the extent to which this type of digital technological tools is compatible with Islamic Sharia controls, especially since the science of hadith relies heavily on the chain of transmission and sources that require accurate evaluation that cannot be fully relied upon on new digital tools (2).

The science of transmission requires an in-depth study of the conditions Narrators and in the form of chains of transmission, which is difficult to achieve completely through technology without human intervention by scholars and researchers with expertise.

With all these challenges, we cannot ignore the great and significant benefits provided by this modern technology at the present time, which enables access to a huge number of hadiths through a huge database that classifies hadiths according to their topics, sources, and degrees of authenticity(2).

In addition to this great development in the science of technology in the science of hadith and the increasing use of digital tools in analyzing and classifying hadiths, the need to take into account ethical and legal controls increases when dealing with this type of technology, as it requires setting a precise context that ensures the integrity and reliability of the results and prevents any intentional interventions aimed at tampering with the accuracy of the information. Here begins the role of hadith scholars and specialists in digital technology to reach scientific solutions that combine traditional knowledge with modern tools and verify the information provided from time to time, and that this integration will contribute to enhancing the accuracy of information and expanding its scope(3).

Digital progress and its impact on Islamic studies

Table 1: Digital Progress and Its Impact on Islamic Studies

Section	Description
Overview	Rapid technological development has benefited academic and cultural fields, including the humanities and Islamic sciences. Digital progress has transformed the study, documentation, translation, and teaching of Islamic heritage, enhancing research accuracy and efficiency.
2.1 Modern Digital Technologies	Digital technologies have introduced new tools facilitating access to and preservation of Islamic sources, leading to a transformation in Islamic sciences research.
Tools and Their Impact	
1. Digital Databases	Convert Islamic manuscripts into searchable digital copies, facilitating access. Universities and research institutions provide databases with Qur'an texts, hadiths, and other references accessible online.

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2. Data Mining and Text Analysis	Analyze large volumes of Islamic texts to discover patterns, similarities, and styles. This aids in verifying authenticity or confirming transmission chains in Hadith and Fiqh studies.
3. Artificial Intelligence	AI analyzes transmission chains, recognizes linguistic patterns, and detects errors in texts. It enhances Hadith classification based on machine learning algorithms.
4. Machine Translation	AI-based translation makes Islamic texts accessible in various languages, supporting global learning. Researchers can access accurate translations of Hadith and jurisprudence books, enriching cultural diversity.

An overview of the impact of digitalization on heritage sciences in general

Digitalization has not only revolutionized Islamic sciences on its own, but as digital technologies have changed how we study heritage at large. For instance, digitization has enabled saving of ancient manuscripts that were at stake since there were threats of damage by factors such as natural and environmental systems. The digitizing of these manuscripts allows researchers to work with the originals without having the actual originals in risks of destruction. Digital technologies have also become a major tool in comparative research between ancient texts in the field of literature, history, philosophy and any other science (3,4).

Likewise, digitization is very useful in the purpose of improving academic understanding of heritage sciences, since nowadays it has been possible to have digital libraries where copies of ancient works are gathered, for example manuscripts or historical references, making possible the research and study of it. Digital databases are allowing researchers access to all types of sources which were once unavailable to the researchers or hard to get at.

The impact of digitalization on research and study methods in Islamic sciences

In the days of digital advancement, the task of conducting research on Islamic studies was arduous because one had to spend a lot of time and effort navigating among libraries and so many paper sources. Now, as we enter the digital age, research methods were made easier and also more effective. With this eLibrary, researchers can perform accurate, e.g., keyword searches in electronic platforms comprised of hundreds of thousands of books, articles, manuscripts and Islamic documents. Filters can also be applied to results based on topics, ages or other criteria and search tools with advanced search (5).

Major changes are also observed in teaching Islamic sciences due to digital development. Today, educational content such as reference classes and courses is becoming available online by universities and other educational institutions, making the classes and content accessible to students and researchers around the globe at a time convenient to them. Furthermore, they have been able to have virtual classes and scientific seminars in which people attend them remotely, which is in addition to the number of students that these courses can reach (6).

However, all these benefits come with some challenges to digitalization in Islamic Sciences. One of these challenges is the absence of scientific and some academic people who don't have digital expertise and this would mean them reaping fewer benefits of modern tools. In addition, the processes of digitization may bring with it worries over the loss of a traditional modes of undertaking texts and scholarship based on original manuscripts, through reading and analysis there. Keeping up with the research of Islamic studies is no longer an option, but a necessity for the advancement of digitalism in Islamic studies (5).

Modern technology tools, methods of analysis and research, and hopefully the means to expand access to Islamic sources can be improved. With this increase in technology, it is expected that such tools become even more radical in ways that the Prophet's hadiths are being studied and the way in which the Islamic heritage is being understood in general. But as these new opportunities present themselves, we need to

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remember to ensure that as these technologies join this science of hadith to help build our understanding of the Islamic heritage, they don't compromise the accuracy or credibility of it(8).

Digitization Opportunities in Hadith Science

Table 2: Digitization Opportunities in Hadith Science

Section	Description
Digitization and Preservation of Manuscripts	Technology helps preserve Islamic heritage by converting old manuscripts into digital copies, protecting them from environmental damage. Modern scanning allows libraries to maintain high-quality digital copies accessible worldwide, facilitating text extraction and analysis for researchers.
Access to Comprehensive Databases	Digital databases provide vast collections of documented hadiths, allowing researchers to search efficiently using keywords or classifications. These databases save time and effort, enable advanced filtering, and help scrutinize transmission chains and analyze authenticity.
Artificial Intelligence in Analyzing Chains of Transmission	AI analyzes transmission chains and discovers complex patterns, enhancing research credibility. It detects duplications or contradictions, classifies hadiths based on narrator credibility, and links content by topics, aiding in faster, more accurate investigations.
Data Mining: Accessing Fine Details and Analyzing Texts	Data mining extracts hidden information and analyzes hadith texts in depth, revealing patterns and verifying narrations against others. It aids in examining ancient manuscripts on a larger scale, discovering rare texts not previously indexed.
Machine Learning in Hadith Classification	Machine learning automates hadith classification by authenticity, topics, or narrator credibility. It assesses hadith authenticity efficiently, identifies fabricated texts, and reduces manual work through advanced algorithms.

Challenges Facing the Digitization of Hadith Science

Digitization of Hadith science opens up many new avenues for research, documentation, and textual analysis, but with many challenges with regard to the authenticity and accuracy of Hadith texts, the influence of software algorithms, ethical issues, Sharia controls that are required, and the effects of digitization on the social and cultural perception of Hadith. Because addressing these challenges involves careful study, cooperation between scholars, programmers, and specialists in Islamic studies, the digitization process must be carefully carried out to avoid destroying the authenticity and vitality of Hadith science(9).

Authenticity and accuracy of documentation: maintaining the accuracy of texts when digitizing them

The digitization of Hadith science is undoubtedly one of the most challenging task; since one of the main issues facing the digitization of texts from ancient manuscripts is to have the same authenticity and accuracy of the original texts while translated to digital copies. Whether digitizing texts or preserving minute details in study of Hadith, technological advances in scanning, and digitization techniques, however, have not eliminated unintended errors in the conversion process. Errors here can be things such as failing to copy a word or allowing letters to slip past or leaving some paragraphs out of it(5).

If there is any error in the digitization process and this is not corrected, this will damage credibility of the texts under study; we may lose or distort an important part of information required in order to correctly understand the hadiths. Thus, because institutions that digitize texts must do so accurately, namely the digital documentation is followed by a comprehensive audit by experts in the hadith science, institutions that digitize texts—as long as their ambition doesn't reside solely in publishing—have to undertake great efforts to ensure the accuracy of the digital conversion.

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Programmatic bias: The impact of algorithms on the results of hadith analysis

One additional problem of the science of hadith concerns the role of programmatic bias on its results in digitalisation. As it turns out, when you want to apply artificial intelligence or digital analysis in your company, algorithms usually get used that were trained on a big pool of data. However, if these algorithms are not trained to take all the fine and complicated atmospheres that describe and understand the hadith of Prophet, these algorithms may lead to wrong or deceptive results (6).

For example, historico-doctrinal context may prevent algorithms from grasping the differences between authentic and weak hadiths even in the face of the historical or doctrinal context in which they were mentioned. The input data that is also inaccurate to the interpretation or modulated by irregularities may also affect algorithms, thus there is misclassification of hadiths. To address these challenges we need to improve on the Islamic hadith algorithmic processing accuracy of these texts (5).

Ethical Challenges: Dealing with Hadith Interpretations in the Digital Context

Important issues to consider when digitizing the science of hadith are ethical challenges. It is hardly surprising, and in some sense desirable, that publishing hadiths on line invites a host of ethical dilemmas on how to handle reliable and unreliable texts, weak hadiths, even fabricated hadiths. Some hadiths will be subject to misinterpretation or inappropriate use in electronic contexts and can mislead people to understanding them.

Also, there is an issue of intellectual property rights, specifically concerning the uses of ancient texts for marketing or advertising purposes. Legal and academic authorities need to establish clear standards about how digitization is used so that digitization is not used for unholy or business uses that damage science and heritage(4).

The need for Sharia controls: Ensuring the accuracy and reliability of digital content

The growing use of digital technologies in the field of the study of Hadith requires, as a step to Sharia and ethical standard, an ethico legal framework to guarantee the reliability and accuracy of the digital content. The process of digitizing Prophetic Hadiths ought to be regulated by precise controls so that if a Hadith is weak or fabricated, it is not mistakenly published.

The first major barrier lies in guaranteeing that all texts found in the plane of screen reading by specialized scholars and from reliable sources in the science of Hadith are carried through. Authenticated digitized texts read against the scientific method and interpretations of Islamic Studies in turn have to be tested (6).

Cultural and social influences: The spread of Hadith online and its understanding in different contexts

The spreading of Hadiths on the Internet has attracted new cultural and social contexts on the average Hadith understanding. The easy availability of Hadiths online can also result in their being spread by virtue of weak or fabricated Hadiths, provided such sources are not watched carefully. Hadiths are especially spread without verifying their authenticity, which leads to distorting the true image of hadiths in some people's mind (5).

Also, the individual may be affected to different cultural communities depending on social context and cultural environment to which the individual is a member to in understanding hadiths. For one, hadiths may be used in certain social or political settings to make the same hadiths more relevant than the hadiths say. It helps create an inaccurate or distorted understanding or misinterpretation of the meanings of the hadiths (2) .

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Thus, scholars and researchers will have to work together with developers and digital platforms so that the hadiths will be presented in the right and accurate manner, and that tools and techniques are made available to ensure that the hadiths are documented precisely and accurately provided to people without confusion or confusing them and presenting misleading contents of a scientific nature without misinterpretation (10).

While the challenges for the science of hadith digitization are not easy, the mechanisms of digitization must constantly strive to academic and legal institutions, utilizing them in a manner commensurate to high scientific accuracy, given that access to the resources related thereto aims for the achievement of the desired ethical goals. It attempts to address these challenges, ensuring greater benefit from digitization in terms of how Islamic heritage is preserved and hadiths analyzed (11).

The Expected Future of Hadith Science in the Digital Age

Rapid digital developments in the future seem to open the door to an era filled with opportunities for Hadith science, it should be able to help the creation of new horizons and the global cooperation that can boost our understanding of the Islamic heritage and the methodology to develop the Hadith Science. Thus, in this section we will examine some of these areas that can greatly benefit from this digital transformation, as well as a few ways these tools can be used alongside traditional approaches to achieve as much accuracy and efficacy in Hadith studies as possible (10).

Integration between technology and traditional science

The combination of modern technology and traditional science of Hadith is a step that cannot be omitted in order to make the most of capabilities that the digital age offers. While digitization facilitates fast access and analysis of information, this would not necessarily satisfy the need of integrity since science of the narrations ('ilm al-riwaayah) and the accurate attribution of the Hadiths are based on the transmission of narrations and their correct attribution. So it is important to combine modern tactics like artificial intelligence and digital research methods with conventional research practices based on backward analysis of the transmission chain and the text (12).

This integration, instead of excluding technology, is used as an aid for researchers through which the accuracy of classification and verification is more enhanced and researcher's understanding is deeper about the texts. Tracking attribution and patterns of narration is enabled by artificial intelligence, but it relies on joining the technological capability with the scholarly expertise of narrators, and the evaluation of its content and credibility.

Future research prospects

Future research from our perspective can arise from the connection of hadith scholars and technology experts as the digital age opens up unending possibilities. It can then be used to develop new analysis tools using the artificial intelligence, as well as improve our understanding of how hadiths through sophisticate applications such as deep learning and machine learning. This collaboration can ease the development of technologies by which investigators and analysts may be able to explore and analyze sets of relationships among various narrations and classify them (13).

Also, large databases of hadiths need to be collected in order to follow the transmission of narrations from one generation to the other and conduct a comparative study of the hadiths. Some of which can be used to achieve a more broad view of Islamic heritage itself and even generate comprehensive studies on among of hadiths in their relationship with other sciences (11).

Building Global Research Networks

The potential to develop global research networks for hadith using digital technologies is one thing that was not possible before. The existence of these networks offer the potential for research discussion, and introduce dialogue and scientific exchange between scholars all over the world. These networks also

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sharpen cooperation and help produce joint studies that substantially strengthen the accuracy and truthfulness of the research.

Digital technology based global research networks can serve as platforms for exchanging texts and manuscripts to find a variety of hadiths sources, similar to how they can be compared and analyzed. These networks provide a means for the coordination and teamwork between different scientific centers and research institutions for undertaking joint projects, such as developing large digital hadith encyclopedias, and preparing a public archive of the hadith research (12).

The following points above illustrate some future trends which research in hadith can lean on in terms of the digital transformation. Now as technological tools are developed, it is expected that the research and documentation methodology will be improved and there will be more communication, not only among researchers, but throughout hadith studies as well.

Comparative Study between Traditional and Digital Studies in Hadith Science

Due to the wide extent of digital transformations that the world has witnessed; Islamic sciences, particularly hadith science, began to leverage the use of modern technological tools; consequently, these researchers attempted to compare traditional with this digital study. While digitization provides new options for accessing texts and comparatively fast assessment of them, its complete implementation should consider principles of Hadith science that will preserve the accuracy and credibility. In this work, we compared the traditional and the digital methods, on methods for verification and documentation, and the reliability of these methods (12).

Comparison of Verification Methods

For example in traditional studies Hadith scholars rely on the chain of transmission method where chain of narrators that are referred and the chain of transmission as well as the text were scrutinized according to some strict standards. Verification of the chain of transmission (isnaad) is this method, and it is the cornerstone in Hadith studies because here we evaluate the narrators as well as the historical nature of the narration, and assure that the Hadith corresponds to the criteria of the narration's veracity(2).

Just as digital studies do, digital hadith studies take on new analytical methods: they reveal chains of transmission and examine relationships between narrators and other units of hadith, applying artificial intelligence for faster processes to employ in identifying narrative patterns of transmission. While these tools give faster analysis abilities, their use poses problems of the measurement results' accuracy because software does not fully comprehend the cultural and religious background that the hadith scholars use in traditional verification(3).

Documentation and reliability

With regards to the science of hadith, this issue is very important concerning documenting hadiths and assuring their credibility. Yet in the traditional studies, scholars follow stringent rules to guarantee correctness of texts such as comparing different versions of ancient manuscripts, even determining the reliability of sources. In traditional study, the reliability of the texts is enhanced by transmitting the texts in ways that maintain their accuracy and as a result the authenticity of the texts (12).

The technology craze playing in the digital world has widely made digital copies accessible and have speedily made the hadiths available and makes them available for analysis. While there is this great benefit, there are still many issues when it comes to credibility: digital copies may have errors in transcription or software bias in text processing. The accuracy of digital documentation depends on which algorithms used to read and understand Islamic hadiths are applicable and when they are not they may conflict with the specific details that appear in traditional research (14).

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Conclusion Comparison of Traditional and Digital Approaches

Both traditional and digital methods have pros and cons and when compared, this shows that. On the one hand, digitization provides fast and easy access to texts and allows for massive amount of analysis, and yet one of the main problems to be tackled is the accuracy and reliability, which is hard to reach without blending traditional skills and digital tools. An integrated approach may be the optimal solution, where technology is employed to fast track access to and analysis of the data, while preserving the traditional standards of the science of hadith, that are necessary for both the accuracy and credibility of science of hadith (12).

Conclusions

In this research paper, the changes caused by digitization in the field of hadith science have been reviewed extensively and hadith science has been viewed as a main pillar of Islamic studies and the role of digital progress in research and analysis methods. The usefulness of modern digital technologies in opening the transmission chains of Hadith texts, as well as in preserving manuscripts, was highlighted, while the challenges that this digital transformation currently presents, regarding the authenticity and credibility of texts and the associated ethical and legal aspects, were discussed.

Future Outlook

In light of this rapid progress, it seems that digitization will continue to play an increasingly important role in the study of Hadith science, with promising possibilities for continued development in this field. It is expected that cooperation between Hadith scholars and technology experts will contribute to the creation of new research tools that combine scientific accuracy with speed of access and analysis. In addition, artificial intelligence and machine learning could in the future constitute important steps in classifying Hadiths, verifying their authenticity, and developing comprehensive databases that facilitate researchers' access to reliable sources.

In conclusion, this research confirms that digitization, with the opportunities it provides, must be used with caution and in integration with traditional methodologies to ensure the preservation of the accuracy and authenticity of Hadith science, which opens new horizons for more future research that combines scientific authenticity and modern technology to serve Islamic studies.

References

Aji, R. (2016). Digitalisasi, Era Tantangan Media (Analisis Kritis Kesiapan Fakultas Dakwah dan Komunikasi Menyongsong Era Digital). Islamic Communication Journal, 1(1).

Dzakiy, A. F., Ustadiyah, A. D., & Hakim, M. L. (2022). Hadis Palsu, Pemalsuan dan Pencegahannya Di Era Digital. Al-Bayan: Journal of Hadith Studies, 1(2), 1-13.

Fikriyyah, D. U. (2018). Telaah Aplikasi Hadis (Lidwa Pusaka). Jurnal Studi Ilmu-Ilmu Al-Qur'an Dan Hadis, 17(2), 271. https://doi.org/10.14421/qh.2016.1702-07

Manovich, L. (2002). The language of new media. MIT press.

Hakak, S., Kamsin, A., Zada Khan, W., Zakari, A., Imran, M., bin Ahmad, K., & Amin Gilkar, G. (2022). Digital Hadith authentication: Recent advances, open challenges, and future directions. Transactions on Emerging Telecommunications Technologies, 33(6). https://doi.org/10.1002/ett.3977

Malik, H. A. (2017). Naqd Al-Hadits sebagai Metode Kritik Kredibilitas Informasi Islam. Journal of Islamic Studies and Humanities, 1(1), 37–66. https://doi.org/10.21580/jish.11.1373

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https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v3i8.4927

Muhammad, A. (2005). Menjadi Bagian dari Penulis Dunia; Snowball Determinisme Teknologi Digital terhadap Konvensi Karya Tulis Ilmiah Kontemporer. Mediator: Jurnal Komunikasi, 6(1), 43–50. https://doi.org/10.29313/mediator.v6i1.1175

Nurillahwaty, E. (2021). Peran Teknologi dalam Dunia Pendidikan. Jurnal Keislaman Dan Ilmu Pendidikan, 3(1), 123–133. https://ejournal.stitpn.ac.id/index.php/islamika

Suryadilaga, M. A., Qudsy, S. Z., & Mustautina, I. (2022). Digitalisasi Hadis Ala Pusat Kajian Hadis (PKH): Distribusi, Ciri, dan Kontribusi dalam Kajian Hadis Indonesia. Mashdar: Jurnal Studi Al-Qur'an Dan Hadis, 3(2), 105–128. https://doi.org/10.15548/mashdar.v3i2.2982

Tahir, M. Y. (2016). Peranan Teknologi Pendidikan Dalam Peningkatan Mutu Pendidikan. SIDKUN 2016.

Ummah, S. S. (2019). DIGITALISASI HADIS (Studi Hadis di Era Digital). Diroyah JUrnal Ilmu Hadis, 4(September), 1–10.

Hakak, S., Kamsin, A., Tayan, O., Idris, M. Y. I., & Gilkar, G. A. (2019). Approaches for preserving content integrity of sensitive online Arabic content: A survey and research challenges. Information Processing & Management, 56(2), 367-380.

Hakak, S., Kamsin, A., Tayan, O., Idris, M. Y. I., Gani, A., & Zerdoumi, S. (2017). Preserving content integrity of digital holy Quran: Survey and open challenges. Ieee Access, 5, 7305-7325.

Hakak, S., Kamsin, A., Veri, J., Ritonga, R., & Herawan, T. (2018). A framework for authentication of digital Quran. In Information Systems Design and Intelligent Applications: Proceedings of Fourth International Conference INDIA 2017 (pp. 752-764). Springer Singapore.