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Exploring the intersection of Islam and digital technology: A bibliometric analysis
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Jurnal

: Soleh Hasan Wahid Penulis

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# Social Sciences & Humanities Open

# Exploring the Intersection of Islam and Digital Technology: A Bibliometric Analysis --Manuscript Draft--

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Corresponding Author:	Institut Agama Islam Negeri Ponorogo
	Ponorogo, Jawa Timur INDONESIA
Corresponding Author Secondary Information:	
Corresponding Author's Institution:	Institut Agama Islam Negeri Ponorogo
Corresponding Author's Secondary Institution:	
First Author:	Soleh Hasan Wahid
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Abstract:	This study aims to identify key developments and trends in digital Islamic studies, including influential authors and their contributions, patterns of collaboration, and the evolution of themes in the literature of the 1060 Scopus database from to 1969-2024. This study also examines the representation of women and the main theoretical frameworks in the field. Biblioshiny, R-Studio, VOSViewer, and N-Vivo were used for bibliometric and sentiment analyses. This study found that academic attention to Islam and digital technologies has increased since the early 2000s with a shift towards online platforms for religious expression and community building. The study also examines the role of key authors, such as Norah Abokhodair, Sarah Vieweg, Marcia C. Inhorn, Eva F. Nisa, Giulia Evolvi, Morgan Clarke, Patrick Eisenlohr and Emma Baulch. The analysis of trends in the digital Islamic literature shows an increasing integration of digital technologies in Islamic practice from 2008 to 2021, with a focus on social media and mobile applications for religious education and engagement. Since 2021, Instagram has become an important space for the expression and discussion of Islamic identity. The research examines digital Islam as a major area of digital religion, exploring the role of the 'digital Muslim' in the 'digital Ummah.' This study reveals how digital Islam blends conventional and modern techniques, employs a cross-disciplinary theoretical approach, and significantly includes women. These findings demonstrate that women are more visible in highly cited studies.
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University of Surrey jon.williams@surrey.ac.uk **NECMEDDÍN GÜNEY** Necmettin Erbakan University necmguney@gmail.com He was born in 1981 in Konya. He completed primary school in Berlin, Germany. He graduated from Konya Seljuk Anatolian Imam Hatip High School in 1999 and from Selcuk University Faculty of Theology in 2003. He started to work as a research assistant in Islamic Law in The Faculty of Theology. In 2006, he completed his MA thesis and started his PhD in the same field. He was a visiting researcher at Columbia University in New York City for a year. In 2011, he graduated from Anadolu University, Faculty of Economics (Open Education). Since December 2013, he has been working as an Assistant Professor at the Department of Islamic Law, Faculty of Theology at Necmettin Erbakan University. He speaks Arabic, English and German. He is married with two children. Jan Ali Western Sydney University jan.ali@westernsydney.edu.au Dr Jan A. Ali is a Religious Sociologist specialising in Islam. He holds a joint appointment as a Senior Lecturer in Islam and Modernity in the School of Humanities and Communication Arts and as the Community and Research Analyst in the Religion and Society Research Centre at the Western Sydney University. He is the Founding Convenor of WSU Postgraduate Islamic Studies Network. His main sociological focus is the study of existential Islam. In recent years Jan has been invited by a number of non-government organizations and government agencies in various Australian capital cities and overseas to deliver Public Lectures on Islamic Revivalism, Shari'ah, Terrorism, and various other important topics on Islam. Opposed Reviewers: Response to Reviewers:

# Exploring the Intersection of Islam and Digital Technology: A Bibliometric Analysis

Soleh Hasan Wahid<sup>1</sup>

<sup>1</sup>Institut Agama Islam Negeri Ponorogo

Jl. Pramuka No.156 Ronowijayan, Siman, Ponorogo, Jawa Timur 63471, PO.Box 116

<u>wahid@iainponorogo.ac.id</u>

ORCID: https://orcid.org/0000-0001-9799-3384

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#### **Conflicts of Interest**

There is no conflict of interest regarding the publication of this paper

# **Funding Statement**

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#### **Disclaimer Statement**

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I am writing to submit my manuscript entitled "Exploring the Intersection of Islam and Digital Technology: A Bibliometric Analysis" for publication in Social Sciences & Humanities Open as an original article. This submission is intended for the Special Issue on Quantitative Islam, as detailed under "Calls for papers" on the journal's home page, and I have updated the "submission type" entry accordingly in my submission.

The research aims to provide new insights and enrich the understanding of the dynamics and interactions between Islam and digital technology. It identifies key developments and trends in the field, influential authors and their contributions, patterns of collaboration between Islamic-majority countries, the thematic evolution of the literature, and perceptions and attitudes towards digital technology in an Islamic context. Furthermore, the study examines the participation and representation of women in the field and the main theoretical frameworks used in the study of digital Islam. The research employs Biblioshiny software in R-Studio to conduct a bibliometric analysis.

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# Exploring the Intersection of Islam and Digital Technology: A Bibliometric Analysis

This study aims to provide new insights and enrich the understanding of the dynamics and interactions between Islam and digital technology. The study identifies key developments and trends in the field, influential authors and their contributions, patterns of collaboration between Islamic-majority countries, thematic evolution of the literature, and perceptions and attitudes towards digital technology in an Islamic context. Additionally, this study examines the participation and representation of women in the field and the main theoretical frameworks used in the study of digital Islam. The research used the Biblioshiny software in R-Studio to conduct a bibliometric analysis. The research positioning digital Islam as a critical subfield of digital religion and explores that the concepts of 'digital Muslim' is relevan with concept 'digital ummah.' The findings reveal the transformative impact of digital Islam, characterized by the integration of traditional and digital innovation, multidisciplinary theoretical frameworks, and the dynamic engagement of women. The findings also show that women have a greater representation in papers with the highest citation rates

Keywowds: Islam, digital religion, digital Islam, bibliometric analysis, women in digital Islam

#### Introduction

The significance of digital Islam in Muslim societies is rapidly growing as digital technologies become more prevalent. It is imperative to understand how Islam adapts and is represented in this new medium. Fortunately, despite a lack of consensus on the definition of "digital Islam," it is clear that it represents a unique manifestation of Islam in the digital context, with new identities, practices, and emerging communities (Campbell, 2012; el-Nawawy & Khamis, 2010; Zaid et al., 2022). Some view it as the use of digital tools to practice Islam (Al-Farizi et al., 2022; Arifin et al., 2022; Mustafa et al., 2020), whereas others argue that it extends it (al-Mutairi, 2022; el-Nawawy & Khamis, 2010; Lengauer, 2018; Olson, 2017).

A strong theoretical foundation in digital Islamic studies is essential for a deeper understanding of the implications of digital tools and platforms for Islamic practices and beliefs. One author who addresses this issue is Campbell (2017), who highlights the importance of a theoretical approach to studying digital Islam. Chaudhary (2020) also discussed the importance of digital ethics in Islam, identifying contemporary themes that could serve as the foundation for a broader philosophical framework. Both contributions emphasize the blend of theoretical rigor and practical flexibility in the study of digital Islam and the importance of ongoing research and dialogue in understanding digital transformation in Islam.

Research on "digital Islam" in Muslim societies focuses on various topics related to the relationship between Islam and digital technology. These themes include the connection between religiosity and consumer attitudes (Souiden & Rani, 2015), the use of digital platforms for Islamic education among youth (Alkouatli et al., 2023), the portrayal of Islam in national and international media (Ghauri et al., 2021), media representation and Islamophobia (Saeed, 2007), the impact of Muslim communities on Islamophobia (Bowe & Makki, 2016), the emergence of hybrid Muslim identities in the digital realm (Evolvi, 2017), and women's empowerment in an Islamic context (Gökhan, 2019). These findings highlight the complex interplay between technology, culture, digital islam, and societal norms in the realm of "digital Islam."

In light of the development of research in this field, as previously mentioned. Bibliometric analysis is a valuable tool to study the adaptation and representation of Islam in the digital realm. This enables the identification of trends, conceptual relationships, and gaps in the existing literature, thus strengthening the theoretical framework for future research and highlighting unexplored areas of study. This research also provides insights into how digital technologies affect Islamic beliefs and practices, thus enabling the development of more effective strategies to support Muslim communities in their interactions with these technologies. Conducting research using bibliometric analysis in this area is not only urgent, but also important to advance our understanding of the complex relationship between digital technology, Islam, and religious identity. Moreover, this research can inform the development of inclusive and responsive policies and practices that meet the needs of global Muslim communities.

Regarding the bibliometric analysis method in research on the theme of 'digital Islam,' previous studies have not specifically used this term in their discussion. Instead, they focused on themes such as religious moderation, Islamic studies and new media, terrorism issues, Islamic communication, and Da'wah, as shown in <u>Table 1</u>.

Table 1. Bibliometric analysis research with themes similar to 'digital Islam'

Sr. No	Objective	Title	References
1	Aims to identify the publication of articles and trends or research positions on religious moderation in the last 2 years and to find out the number of citations or publications during 2020 to 2022.	Bibliometric analysis: religious moderation	(Prahesti, 2022)
2	Examines the evolution of Islam and new media topics during the past two decades. The most prolific years for article production were 2012 and 2020	The Bibliometric Analysis Of Islamic Studies Research And New Media Based On Biblioshiny	(Yunus Mustofa & Rizal Mustofa, 2023)
3	The paper aims to evaluate the publication trends on terrorism issues in Indonesia from 1980 to 2022 through bibliometric analysis.	Bibliometric analysis of publications trends on the terrorism issues in Indonesia	(Yumitro et al., 2023)
4	The study aims to conduct a bibliometric analysis of academic articles related to Islamic Studies, analyzing their evolution over time and identifying key research topics.	Systematic Review Studi Islam: A Bibliometrics Analysis (1941-2022)	(Latuconsina, 2023)
5	Islamic communication and da'wah that has been published by Dimensions-indexed journals between 2012 and 2022, using both qualitative and descriptive statistics methods to analyze the 275 papers, VOSviewer was used to create bibliometric maps	Analisis Scientometrik Tentang Komunikasi dan Dakwah Islam dalam Literatur Ilmiah	(Izza, 2023)

Previous studies on the topic of "digital Islam" have not specifically used this term, instead focusing on themes such as religious moderation and new media. No study has explicitly examined the field of "digital Islam" using bibliometric analysis. This study aims to fill this gap by applying bibliometric analysis to identify and analyze the trends and patterns in the study of "digital Islam." This study aims to provide new insights and enrich the understanding of the dynamics and interactions between Islam and digital technology in a broader context.

In relation to these objectives, the research questions in this study are as follows:

RQ1: How does a performance analysis of the 'digital Islamic literature reveal key developments and trends in this field?

RQ2: Who are the influential authors in the 'digital Islam' literature and what are their main contributions? Why have they become influential?

RQ3: How do patterns of collaboration between Islamic-majority countries affect the output and impact of 'digital Islamic research?

RQ4: How does bibliometric analysis reveal the thematic evolution of the 'digital Islam' literature and what are the major themes that have evolved over time?

RQ5: How does sentiment anysis in ' the literature reveal perceptions and attitudes towards digital technology in an Islamic context?

RQ6: What is the involvement and representation of women as the main authors in the 'digital Islam' literature, and what are the main articles that address gender issues?

RQ7: What are the main theoretical frameworks used in the study of digital Islam, and how do they help understand the interaction between Islam and digital technology?

In this article, I explore several important aspects of Digital Islam literature through bibliometric analysis using the Biblioshiny software in R-Studio to map key developments, trends, and dynamics in the field (Aria & Cuccurullo, 2017). First, I conducted a performance analysis of the 'Digital Islam' literature to identify key developments and trends in the field, including publications per year, citations, and the most prolific journals, highlighting how this literature is growing and which areas are receiving the most attention. This bibliometric method effectively maps the state-of-the-art and identifies research gaps and trends, aiding the development of scientific projects ( De Oliveira et al., 2019).

I continue by identifying influential authors in digital Islamic literature using co-citation analysis and author collaboration networks to identify those individuals who have made significant contributions and why they have become influential. This includes an evaluation of their h-index and total number of citations to demonstrate their influence and contribution to the field.

In addition, my research explores the patterns of collaboration between Muslim-majority countries in digital Islam research through network collaboration analysis to understand how international collaboration affects research output and impact. We assessed the contribution and impact based on publications and citations per country and used cluster analysis to identify key collaborative groups.

The research also included an analysis of thematic evolution in the 'digital Islam' literature, using keyword co-occurrence analysis and thematic evolution maps to map key themes and their evolution over time. This provides deep insight into the focus of research in the field and how interest in certain topics has changed.

Sentiment analysis of the 'digital Islam' literature provides an understanding of perceptions and attitudes towards digital technology in an Islamic context, using sentiment scores and analyzing sentiment trends over time to reveal how communities are responding to the integration of technology into religious practice.

I also examined the participation and representation of women as lead authors in the literature on digital Islam, as well as the literature that addresses gender issues, using author gender analysis and network analysis to explore the collaboration and influence of female authors.

Finally, I examine the main theoretical frameworks in 'digital Islam' studies, focusing on the most cited documents and references worldwide to determine the most influential frameworks and how they help understand the interaction between Islam and digital technologies. Through this approach, my article provides a valuable contribution to the understanding of the 'Digital Islam' literature, combining theoretical rigor with empirical analysis to understand the complex dynamics at the intersection of technology, religion, and society.

This study introduces two unique aspects of bibliometric analyses: sentiment analysis of 'digital Islam''s literature, and women's participation and representation in this field. By conducting sentiment analysis, this study uncovers the diverse perceptions and attitudes of Muslims towards digital technologies, providing significant insights into the integration of these technologies into religious practices and daily life. Understanding the interplay between digital Islam and technology is therefore crucial. Moreover, the research on women's participation and representation sheds light on the prominent role women play as primary authors and research subjects in 'digital Islam' literature. This challenges existing assumptions and underscores the importance of gender in this area of research. By emphasizing these aspects, this study contributes to the academic discourse on 'digital Islam' and promotes inclusivity and gender awareness. It also establishes a foundation for future research investigating the relationship between technology, digital Islam, and gender.

## **Research Design**

Bibliometrix is a flexible, open-source tool for comprehensive science mapping analysis that supports a recommended workflow and enables rapid upgrades and integration with other statistical R packages (Aria & Cuccurullo, 2017). To conduct a bibliometric analysis focusing on the interplay between Islamic or Muslim societies and the digital realm, a detailed search strategy was implemented using the Scopus database (Donthu et al., 2021). The search string used was as follows:

TITLE-ABS-KEY (islam OR "Muslim societies" AND "digital world" OR "digital age" OR technology OR "social media" OR internet OR "online community" OR "cyber space" OR "digital culture" OR "virtual community" OR "online engagement" OR "digital engagement" OR "social networking" OR "online education" OR "e-learning" OR "virtual learning" OR "digital platforms" OR "online platforms")

This string aimed to capture a wide range of documents discussing Islam or Muslim societies in relation to various facets of the digital age, including technology use, online communities, digital culture, and online learning environments. The initial search returned 1,777 documents, indicating a significant body of work at the intersection of these topics.

To refine the dataset and ensure focus on the most relevant and high-quality publications, several filters were applied. Documents were excluded based on the document type to remove conference reviews (cr), letters (le), editorials (er), short surveys (sh), book chapters (bk), and notes (no), focusing on the analysis of peer-reviewed articles and substantial contributions to the field. The search was also limited to documents published in English to ensure that the analysis was manageable and that the results were accessible to a broad academic audience.

Further refinement was made by excluding documents from unrelated subject areas, such as health sciences, chemistry, and engineering, which do not directly contribute to the understanding of digital Islam. This exclusion was essential to maintain the focus and relevance of the research. After

applying these exclusion criteria, the dataset was narrowed to 1,060 documents, offering a concentrated corpus for bibliometric analysis.

The retained dataset of 1,060 documents forms the basis for bibliometric analysis, allowing for a detailed examination of publication trends, authorship patterns, thematic concentrations, and citation networks within the literature on Islam and digital engagement. This methodological approach not only highlights the breadth and depth of research in this emerging field but also provides a foundation for identifying gaps in the literature, understanding the evolution of key themes over time, and suggesting avenues for future research. Through this bibliometric analysis, this study provides a structured overview of how digital technologies intersect with Islamic practices and their broader implications for Muslim societies globally, as shown in Table 2.

Table 2. Digital Islamic Literature From Scopus (1969-2024)

Description	Results
Timespan	1969:2024
Sources (Journals, Books, etc)	656
Documents	1060
Annual Growth Rate %	4.77
Document Average Age	7.68
Average citations per doc	8.541
References	42523
DOCUMENT CONTENTS	
Keywords Plus (ID)	1442
Author's Keywords (DE)	2941
AUTHORS	
Authors	1790
Authors of single-authored docs	546
AUTHORS COLLABORATION	
Single-authored docs	622
Co-Authors per Doc	1.86
International co-authorships %	10
DOCUMENT TYPES	
article	731
book chapter	173
conference paper	89
review	67

Following the bibliometric analysis, the research design incorporated the use of N-Vivo, a qualitative data analysis software, to conduct sentiment analysis on the same set of 1,060 documents. This phase particularly focuses on understanding the nuances of discourse in the literature. By applying sentiment analysis, this study aims to uncover the prevailing attitudes and perceptions regarding the integration of digital technologies in Islamic practices and Muslim societies. Sentiment analysis in N-Vivo involves coding textual data from documents, identifying positive, negative, and neutral sentiments, and analyzing the context in which digital Islam is discussed.

### **Result and Discussion**

This study presents a comprehensive bibliometric framework for analyzing Digital Islam literature. Using Biblioshiny in R-Studio (Moral-Muñoz et al., 2020), we mapped growth dynamics, identified

influential authors, analyzed international collaborations, outlined thematic evolution, explored sentiments towards digital technologies in the Islamic context, assessed the role of women, and identified theoretical frameworks for digital Islamic studies.

#### Growth and Trends in Digital Islam Literature

The analysis starts by presenting the growth trend of Digital Islam literature since its inception. Based on publication and citation data, we identified time periods with significant surges in research, highlighting the topics and issues that dominate academic discourse. A performance analysis of the 'Digital Islam' literature was conducted to identify key developments and trends in the field. This included analyzing publications per year, citations, and the most prolific journals. The analysis highlighted how this literature is evolving and which areas are receiving the most attention.

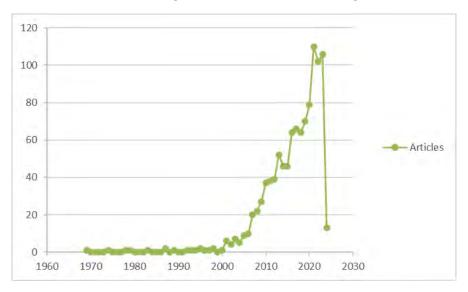


Figure 1. Annual Scientific Production for Digital Islamic Literature

Figure 1 shows a significant and consistent increase in the number of publications of Islamic digital literature from 1969 to 2024. The number of publications per year grew slowly at first but then increased rapidly and significantly in the early 2000s. This surge in publications can be attributed to the growing interest in and recognition of the significance of research in digital Islam, particularly in the past two decades. The period between 2007 and 2024 is marked by significant annual growth in research activity. This era is considered pivotal in the development of Islamic digital literature, signifying a heightened focus on exploring and advancing this field. The data reveal the increasing importance placed on digital Islam and progress made in this area.

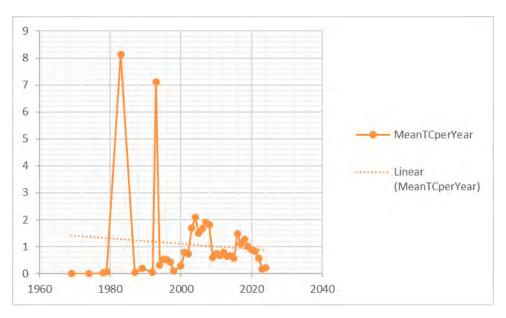


Figure 2. Average citations per year for digital Islam literature

Figure 2 shows the analysis of average citations per year for digital Islamic literature, revealing fluctuations in research recognition and impact over time. Initially, there was a lack of impact from the late 1960s to the early 1980s, with almost no citations per year. However, in 1983, there was a significant increase in the average citations, indicating the importance of research in the field. Since the 2000s, there has been a consistent upward trend in the average citations, albeit with some fluctuations. The years 2003 and 2004 were notable for having a higher average number of citations, indicating increased recognition of research in Islamic digital literature. The average number of citations stabilized at a lower but still significant level, with another peak in 2016. However, from 2019 to 2024, there was a decline in the average number of citations per year, which may be due to a time lag in citation collection or an increase in less-cited publications. This analysis offers insights into the evolving dynamics of citations over time and academic recognition of Islamic digital research on a global scale.



Figure 3. Most productive journals in Digital Islam literature

Figure 3 highlights that the journal 'Religions' is the most prolific, with 30 articles, followed by the 'Indonesian Journal of Islam and Muslim Societies' and 'Contemporary Islam.' The 'Journal of Arab and Muslim Media Research' and the 'Journal of Religion, Media, and Digital Culture' were also significant contributors. Furthermore, the '2013 5th International Conference on Information and Communication Technology for the Muslim World (ICT4M 2013)' and its 2014 edition contributed to the field. The analysis of publication trends from 1969 to 2024 reveals exponential growth in research output, particularly between 2007 and 2024, marking a new era of increased academic interest in digital Islamic studies. This growth was accompanied by fluctuations in citation recognition, with a noticeable increase since the early 2000s. This paper underscores the diverse platforms supporting digital Islamic research and advocates for enhanced strategies to boost the visibility and impact of these studies.

#### Influential Sources and Authors in Digital Islam Literature

This includes an evaluation of their h-index and total number of citations to demonstrate their influence and contribution to the field. This study aimed to understand the basis of their influence, including the quality and impact of their research.

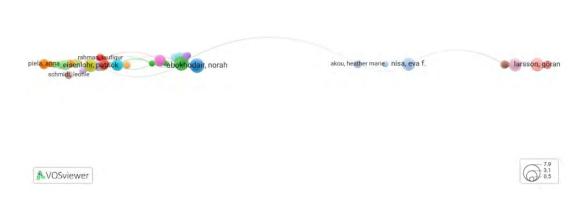


Figure 4. Top Authors and Sources in Digital Islam literature by VOSViewer

Figure 4 presents an analysis of influential authors in the field of Islamic digital literature and their contributions based on citation metrics derived from VOS Viewer. Norah Abokhodair emerges as a leading figure with 233 citations across six documents, whereas Francis Robinson, with a single document, amasses 228 citations, highlighting his significant impact. Sarah Vieweg, Eva F. Nisa, and Bryan S. Turner are also noted for their substantial citation counts, indicating their important contributions to the field. The analysis further identified the high normalized citation scores of Anton Törnberg and Jamie Cleland, underscoring their influential research. These authors primarily focused on the intersection of technology, social media, and socio-cultural dynamics within Muslim societies, offering deep insights into how digital advancements are shaping social, cultural, and religious practices. This study underscores the critical role of digital Islamic research in understanding the evolving relationship between technology and Islamic communities.

Despite their diversity, these studies collectively articulate how digital technologies and social media have become integrated into religious practices, social identity, and discourse dynamics within the context of Islam. Abokhodair and Vieweg (2016, 2020) revealed the use of social media in the Arabian Gulf as a means of expressing collective identity and autonomy, particularly through the maintenance of traditional values in Qatar. This is extended by research on the sharing and

discussion of the Quran on Twitter, which highlights the impact of social media on contemporary religious practices.

Nisa's research emphasizes how Muslim women utilize the Internet and social media, especially in Indonesia, for religious and social purposes, underlining digital platforms as new spaces for religious engagement and expression (Nisa 2013, 2018a, 2021). Francis Robinson (1993), with a focus on the impact of print technology, demonstrates a significant shift in the dissemination and interpretation of Islam, changing the educational and religious landscape in the Muslim world.

The analysis by Törnberg and Nissen (2023) of far-right extra-parliamentary groups in Europe using hyperlink networks on social media to mobilize anti-Islamic sentiment shows how digital technologies can facilitate sociopolitical polarization and extremism. This is complemented by studies on the representation of Muslims in social media discourse, identifying narratives and prejudices that shape public perception.

Turner (2007) and Cleland (2014) address issues of religious authority and Islamophobia in the digital age, while Eisenlohr explores the impact of sound reproduction technologies on Islamic devotional practices, highlighting the complexity of the interaction between technology and authenticity in religious practice.

Together, these studies depict a complex interplay between digital technologies, social media, and Islam, revealing how technology is shaped and transformed by religious and social contexts. Although topics and approaches vary collectively, they offer comprehensive insights into the challenges and opportunities presented by the digital age of the Muslim community and its religious practices.

#### *International Collaboration in Digital Islam Literature*

A network analysis of collaborations between countries demonstrates the global reach of digital Islamic research. This study evaluates the intensity and characteristics of collaborations, and identifies patterns that indicate scholarly exchange and joint contributions to global knowledge.

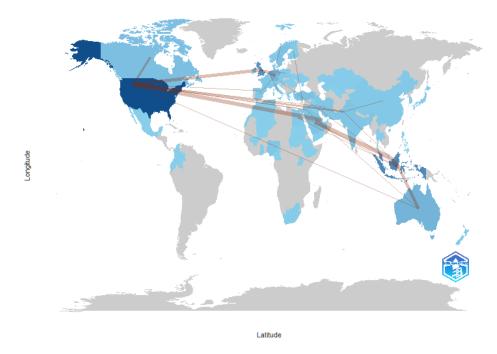


Figure 5. Digital Islam literature collaboration world map

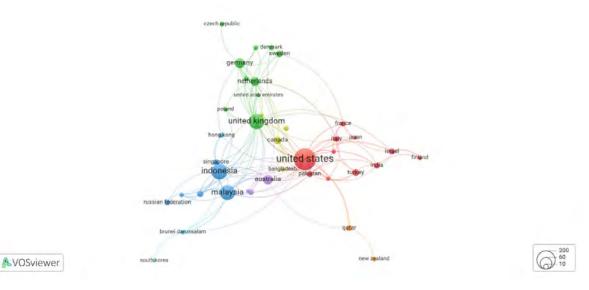


Figure 6. Digital Islam literature co-authorship by Country

In this analysis, we also present the ten countries with the highest number of collaborations in digital Islamic literature research, as well as the ten pairs of countries with the most frequent collaborations.

Table 3. 10 Most Collaborated Countries

Country	Total Collaborations
United States	44
United Kingdom	35
Malaysia	28
Indonesia	26
Australia	18
Netherlands	18
Saudi Arabia	17
Germany	16
Pakistan	14
Italy	12

Table 4. 10 Countries' Most Collaborated Couples

Country 1	Country 2	Collaborations	
Indonesia	Malaysia	7	
Malaysia	Saudi Arabia	7	
United Kingdom	United States	7	
Germany	Netherlands	6	
Qatar	United States	5	
Australia	Indonesia	4	
Netherlands	United Kingdom	4	
Australia	Malaysia	3	
Australia	United States	3	
Canada	United States	3	

The analysis of international collaboration networks in the field of digital Islamic literature, as depicted in <u>Figure 5</u> and <u>6</u> and <u>Tables 3</u> and <u>4</u>, reveals significant patterns and relationships among the countries. The analysis of international collaboration in the digital Islamic literature identifies key patterns and relationships among countries, highlighting the central roles of the United States and

the United Kingdom as academic hubs. Malaysia and Indonesia also emerged as significant contributors, with these countries demonstrating a high level of participation and strong bilateral collaboration, especially between Indonesia and Malaysia. The study showcases the global nature of research collaboration, with notable connections such as Malaysia-Saudi Arabia and UK-US each recording seven collaborations, and a notable trans-European link between Germany and the Netherlands. This underscores the importance of international cooperation to enhance the understanding of Islam in the digital era, reflecting a complex, interconnected global network of knowledge exchange.

Table 4 shows the analyses of inter-country collaborations in Digital Islam research, focusing on how countries with varied interests and capacities collaborate to understand and apply digital technologies in Islamic contexts. It highlights significant partnerships, such as between Indonesia and Malaysia and Malaysia and Saudi Arabia, which reflect shared cultural and religious backgrounds and the integration of technology with Islamic values. Additionally, collaborations between Western and Muslim-majority countries, such as the US, UK, Qatar, and Germany, underscore the importance of cross-cultural research in this field. The findings emphasize that international cooperation is crucial for a comprehensive understanding of Digital Islam, covering the technological, social, and religious dimensions. Such collaborations facilitate enriched dialogue and innovation within Muslim communities globally, showcasing the global relevance and interdisciplinary nature of digital Islamic research.

# Thematic Evolution in Digital Islam Literature

Using keyword co-occurrence and thematic evolution mapping techniques, we explored how the research focus has shifted and evolved. These findings offer insights into research dynamics, highlighting new areas and emerging topics in academic dialogue.

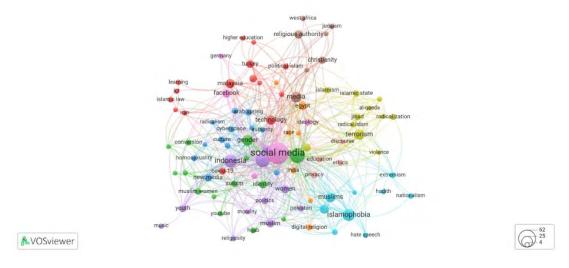


Figure 7. Digital Islam Vos Viewer Co-Occurence Analysis

<u>Figure 7</u> presents a comprehensive analysis of ten thematic clusters identified through specific keywords, each exploring various facets of contemporary societal issues through the lens of digital media, religious identity, and socio-political dynamics.

The first cluster delves into the role of digital platforms, such as Facebook and YouTube, in shaping cultural and religious identities, emphasizing the negotiation of gender politics and social activism within diverse cultural landscapes. This finding highlights the impact of digital media on contemporary discourse and identity formation.

The second cluster examines the interaction between Islamic traditions and modern challenges, such as globalization and the COVID-19 pandemic, focusing on the implications for education, technology, and societal change. This underscores Islamic societies' adaptation to technological advancements and global dynamics.

In the third cluster, the focus shifted to the Middle East, exploring sociopolitical and cultural transformations after the Arab Spring. The role of new media in influencing political activism, religious identity, and cultural values is analyzed, offering insights into the complexities of governance and freedom of expression in the region.

The fourth cluster addresses terrorism, radicalization, and extremism within the context of Islamism, highlighting the influence of jihadist movements and propaganda on global security. It provides a critical view of the sociopolitical challenges posed by radical ideologies.

The fifth cluster explores the intersections of digital culture, activism, and identity politics, particularly the role of social media in advocating for social justice issues, such as Islamophobia and racism. This illustrates how digital platforms facilitate activism and discussions of discrimination.

The sixth cluster looks at Pakistan, focusing on the interplay between digital media, education, ethics, and sociopolitical dynamics concerning Islam, nationalism, and gender. The significance of religious discourse and educational initiatives in shaping societal norms has been emphasized.

The seventh cluster analyzes the religious and cultural dynamics of Christianity, Hinduism, and Judaism in West Africa, exploring the impact of the diaspora, media, and religious authority on community identities and practices.

The eighth cluster investigated the influence of religion, social media, and youth culture in Indonesia, highlighting the role of Instagram and music in shaping moral values and religious expressions among youth.

The ninth cluster considers geopolitical, cultural, and social dynamics in regions such as Egypt, India, and Nigeria, addressing broader themes such as orientalism, race, and secularism. It offers a critical examination of cultural representation and power dynamics.

Finally, the tenth cluster focuses on the intersection of bioethics and Islamic science, examining ethical considerations in scientific advancements guided by Islamic principles. This reflects an interdisciplinary field that merges scientific inquiry with ethical and religious reflections.

Overall, this study elucidates the intricate relationships between digital media, religious identity, and socio-political issues across different cultural and geographical contexts, providing a nuanced understanding of contemporary societal challenges and transformations.

Having identified the various themes in the ten clusters of Vos-Viewer. I then identified how these clusters were thematically interconnected.

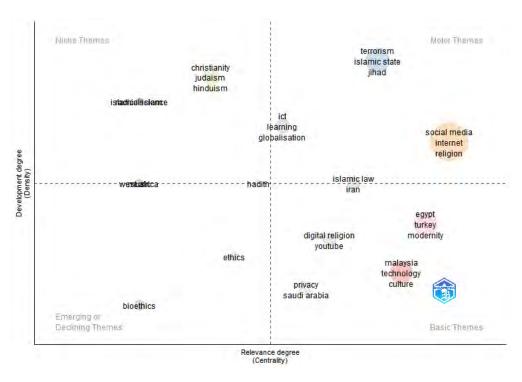


Figure 8. Digital Islam thematic Map analysis Biblioshiny

Figure 8 presents a thematic analysis focused on "Digital Islam," which encompasses the practice, interpretation, and communication of Islam within digital environments. The analysis utilized a thematic map to categorize research themes based on their relevance and level of development, employing axes to represent theme importance and density. Key themes were organized into quadrants, illustrating their relationships and significance. Central themes, identified as Motor Themes, include 'terrorism,' 'Islamic state,' and 'jihad,' highlighting their prominence in discussions about the digital impact on these subjects. Basic Themes, such as 'malaysia,' 'technology,' and 'culture,' though fundamental, are recognized as less explored areas. Emerging or Declining Themes like 'bioethics' and 'ethics' suggest new or waning interests, while Niche Themes mention religions like Christianity, Judaism, and Hinduism, indicating specialized but less connected topics. This analysis helps pinpoint research priorities and potential gaps within the field of digital Islamic studies, suggesting areas for further investigation.

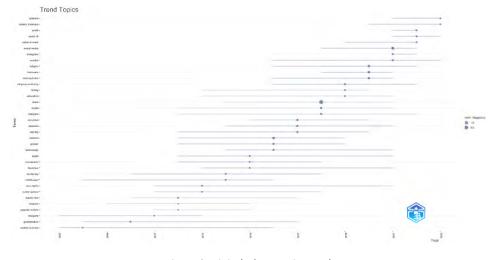


Figure 9. Digital Islam Topic Trends

Figure 9 shows the evolution of topics related to Digital Islam from 2008 to 2021, illustrating a shift towards integrating digital technology within Islamic discourse and practices. Initially, discussions focused on Islamic science and explored the relationship between religion and technology. By 2013, the emphasis had shifted towards the use of new media and communication technologies, such as social media and mobile applications, for education and religious engagement. The year 2016 marked notable interest in the impact of technology on Islamic practices, including the use of digital applications for religious observance and virtual reality for immersive religious experiences. The study highlights a significant trend towards digital platforms that enhance religious practice, accessibility, and community engagement within the Muslim community. By 2021, social media, particularly Instagram, has emerged as a vital space for expressing and debating Islamic identity, showcasing the growing importance of digital spaces for religious dialogue and community development.

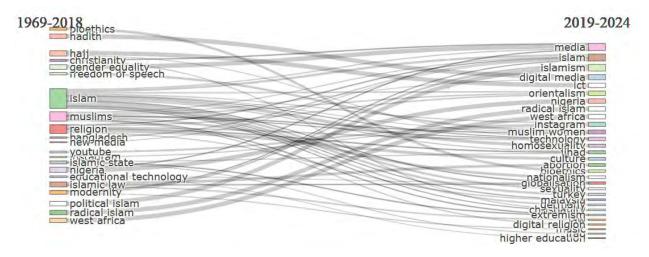


Figure 10. Thematic evolution in Digital Islam literature

<u>Figure 10</u> illustrates the thematic evolution of Islamic studies from 2019 to 2024, highlighting the emergence of new themes such as digital media, ICT, Instagram, and technology. It notes an increased focus on gender and representation, particularly regarding Muslim women, alongside traditional themes such as hadith and Islamic law. The period also saw a rise in discussions on sociopolitical issues, such as Islamophobia, nationalism, and homosexuality, indicating a broader inclusion of social and political analysis within Islamic studies. The study underscores a shift towards integrating Islam with technology and contemporary debates, expanding the scope of discussion to include global issues such as globalization and radical Islam. This reflects a dynamic and expanding field of study that adapts to contemporary societal changes and technological advancements.

#### Sentiments Analysis towards Digital Islam

We analyzed the sentiments of the authors of the articles using N-Vivo for a sentiment analysis. The discussions revealed both positive and negative nuances,

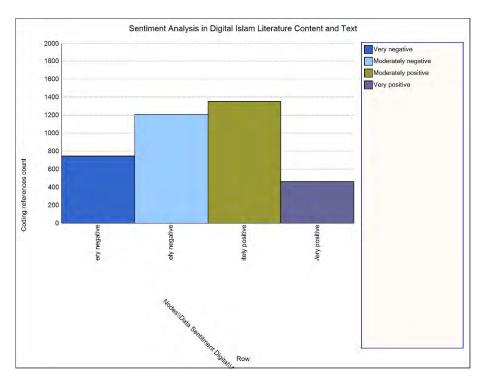


Figure 11. Sentiment Analysis in Digital Islam based on Text

When conducting sentiment analysis on articles using N-Vivo, it is important to note that the results obtained do not reflect the personal sentiments or viewpoints of the authors. The analysis focuses on extracting information and nuances regarding discussions on digital technology, regardless of whether they are positive or negative. The objective of this analysis is to identify themes, patterns, and nuances that emerge from the content, without making any assumptions about the author's attitude towards the subject. Therefore, when stating that 'the discussion reveals both positive and negative nuances, showing complex perceptions of digital technology,' it refers to the range of opinions and views presented in the articles rather than the authors' sentiments. This interpretation clarifies that sentiment analysis is a tool for extracting information and trends from text and that the results reflect the content being analyzed rather than the subjective perceptions of the authors.

Figure 11 presents a sentiment analysis focusing on the interaction between Islam and digital technology, analyzing 748 negative and 1359 positive sentiments from various entries. It reveals a complex and multifaceted discourse, with a dominant, moderately negative sentiment reflecting concerns and criticisms, alongside a significant presence of positive viewpoints that acknowledge the beneficial impact of digital technology on Islam. The analysis underscores the diverse perceptions within the discourse, highlighting both the challenges and opportunities of digital technologies present in contemporary Islamic practice and understanding. This suggests a nuanced landscape of views, balancing skepticism and optimism in the context of the role of digital technology in Islam.

#### The Role of Women in Digital Islam Literature

This study investigates gender dynamics in the digital Islamic literature by focusing on the participation of female authors. It employs a two-stage methodology to analyze gender representation, beginning with the identification of 100 highly cited authors from a corpus of 1060 articles, leading to the recognition of 59 female authors based on citation frequency. The second stage zeroes in on the most prolific among these female authors, narrowing down to 18 individuals recognized for their significant contributions. This study meticulously examines the gender of authors and their distribution across publications, paying particular attention to the positions held by

female authors in the authorship order, which serves as an indicator of their leadership and influence within the field. This approach sheds light on collaboration patterns and leadership roles, aiming to offer a comprehensive understanding of women's roles and contributions in the digital Islamic literature. Furthermore, it explores the broader discourse on gender issues within digital Islamic research, highlighting the acknowledgment and valuation of women's contributions in this scholarly domain.

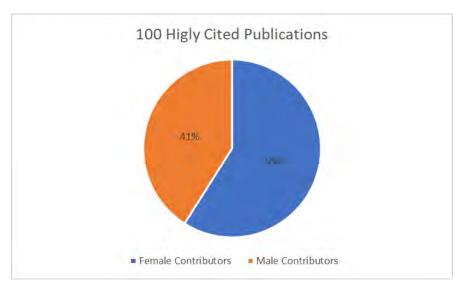


Figure 12. Women's representation in the top 100 most cited papers

Table 5. Top 59 Female Authors by Number of Citations

Authors	Female Authors	Title Yo	ear So	ource title	Cited by
Wersal L. (1995)	Wersal, Lisa	ISLAM AND ENVIRONMENTAL ETHICS: TRADITION RESPONDS TO CONTEMPORARY CHALLENGES	1995	Zygon®	31
Stowasser B. (2001)	Stowasser, Barbara	Old shaykhs, young women, and the internet: The rewriting of women's political rights in Islam	2001	Muslim World	21
Inhorn M.C. (2003)	Inhorn, Marcia C.	Global infertility and the globalization of new reproductive technologies: Illustrations from Egypt	2003	Social Science and Medicine	206
Mamadouh V. (2003)	Mamadouh, Virginie	11 September and popular geopolitics: A study of websites run for and by Dutch Morrocans	2003	Geopolitics	27
Inhorn M.C. (2004)	Inhorn, Marcia C.	Middle Eastern masculinities in the age of new reproductive technologies: Male infertility and stigma in Egypt and Lebanon	2004	Medical Anthropology Quarterly	136
Kosnick K. (2004)	Kosnick, Kira	'Speaking in one's own voice': Representational strategies of Alevi Turkish migrants on open- access television in Berlin	2004	Journal of Ethnic and Migration Studies	37
Fullwiley D. (2004)	Fullwiley, Duana	Discriminate biopower and everyday biopolitics: Views on sickle cell testing in Dakar	2004	Medical Anthropology: Cross Cultural Studies i Health and Illness	
Cohrs J.C.; Moschner B.; Macs J.; Kielmann S. (Cohrs et al., 2005)	Moschner, Barbara	The motivational bases of right- wing authoritarianism and social dominance orientation: Relations to values and attitudes in the aftermath of September 11, 2001	2005	Personality and Social Psychology Bulletin	187

Abdul Karim N.S.; Hazmi N.R. (2005)	Abdul Karim, Nor Shahriza; Hazmi, Norzelatun Rodhiah	Assessing Islamic information quality on the internet: A case of information about Hadith	2005	Malaysian Journal of Library and Information Science	27
Inhorn M.C. (2006)	Inhorn, Marcia C.	"He won't be my son": Middle Eastern Muslim men's discourses of adoption and gamete donation Promises of (im)mediate	2006	Medical Anthropology Quarterly	112
Schulz D.E. (2006)	Schulz, Dorothea E.	salvation: Islam, broadcast media, and the remaking of religious experience in Mali	2006	American Ethnologist	109
Newcomb R. (2006)	Newcomb, Rachel	Gendering the city, gendering the nation: Contesting urban space in Fes, Morocco	2006	City and Society	27
Toft M.D. (2007)	Toft, Monica Duffy Hashim, Noor	Getting religion? The puzzling case of Islam and civil war	2007	International Security	259
Hashim N.H.; Murphy J.; Hashim N.M. (Hashim et al., 2007)	Hazarina; Hashim, Nazlida Muhamad	Islam and online imagery on malaysian tourist destination websites	2007	Journal of Computer- Mediated Communication	73
Akou H.M. (2007)	Akou, Heather Marie	Building a new "world fashion": Islamic dress in the twenty-first century	2007	Fashion Theory - Journal of Dress Body and Culture	38
Raiya H.A.; Pargament K.; Mahoney A.; Stein C. (Abu Raiya et al., 2008)	Mahoney, Annette; Stein, Catherine	A psychological measure of islamic religiousness: Development and evidence for reliability and validity	2008	International Journal for the Psychology of Religion	212
Ho S.S.; Lee W.; Hameed S.S. (Ho et al., 2008)	Ho, Shirley S.; Lee, Waipeng; Hameed, Shahiraa Sahul	Muslim surfers on the internet: Using the theory of planned behaviour to examine the factors influencing engagement in online religious activities	2008	New Media and Society	51
Wyche S.P.; Caine K.E.; Davison B.; Arteaga M.; Grinter R.E. (Wyche et al., 2008)	Wyche, Susan P.; Caine, Kelly E.; Grinter, Rebecca E.	Sun dial: Exploring technospiritual design through a mobile islamic call to prayer application	2008	Conference on Human Factors in Computing Systems - Proceedings	34
van Zoonen L.; Vis F.; Mihelj S.(Van Zoonen et al., 2010)	van Zoonen, Liesbet; Vis, Farida; Mihelj, Sabina	Performing citizenship on YouTube: Activism, satire and online debate around the anti-Islam video Fitna	2010	Critical Discourse Studies	104
Akou H.M. (Akou, 2010)	Akou, Heather Marie	Interpreting Islam through the Internet: Making sense of hijab	2010	Contemporary Islam	28
Piela A. (Piela, 2010)	Piela, Anna	Muslim women's online discussions of gender relations in Islam	2010	Journal of Muslim Minority Affairs	25
Bryant L.D.; Ahmed S.; Ahmed M.; Jafri H.; Raashid Y. (Bryant et al., 2011)	Ahmed, Shenaz	'All is done by Allah'. Understandings of Down syndrome and prenatal testing in Pakistan Mutuality and immediacy	2011	Social Science and Medicine	36
Clarke M.; Inhorn M.C. (Clarke & Inhorn, 2011)	Inhorn, Marcia C.	between marja and muqallid: Evidence from male in vitro fertilization patients in shii lebanon	2011	International Journal of Middle East Studies	25
Akhter W.; Abassi A.S.; Umar S. (Akhter et al., 2011)	Umar, Sadia	Ethical issues in advertising in pakistan: An islamic perspective	2011	World Applied Sciences Journal	23

Mihelj S.; van Zoonen L.; Vis F. (Mihelj et al., 2011)	Mihelj, Sabina; van Zoonen, Liesbet; Vis, Farida	Cosmopolitan communication online: YouTube responses to the anti-Islam film Fitna	2011	British Journal of Sociology	21
Fekete L. (Fekete, 2012)	Fekete, Liz	The muslim conspiracy theory and the oslo massacre	2012	Race and Class	62
Salamandra C. (Salamandra, 2012)	Salamandra, Christa	The Muhannad effect: Media panic, melodrama, and the Arab female gaze	2012	Anthropological Quarterly	32
Afrianty D. (Afrianty, 2012)	Afrianty, Dina	Islamic education and youth extremism in Indonesia	2012	Journal of Policing, Intelligence and Counter Terrorism	29
Halverson J.R.; Way A.K. (Halverson & Way, 2012)	Way, Amy K.	The curious case of Colleen LaRose: Social margins, new media, and online radicalization	2012	Media, War and Conflict	23
Hamayotsu K. (Hamayotsu, 2013)	Hamayotsu, Kikue	The Limits of Civil Society in Democratic Indonesia: Media Freedom and Religious Intolerance	2013	Journal of Contemporary Asia	31
Nisa E.F. (Nisa, 2013)	Nisa, Eva F.	The internet subculture of Indonesian face-veiled women	2013	International Journal of Cultural Studies 2013 5th International	30
Lubis M.; Kartiwi M. (Lubis & Kartiwi, 2013)	Kartiwi, Mira	Privacy and trust in the Islamic perspective: Implication of the digital age	2013	Conference on Information and Communication Technology for the Muslim World, ICT4M 2013	23
Sreberny A. (Sreberny, 2015)	Sreberny, Annabelle	Women's Digital Activism in a Changing Middle East Uncovering modesty: Dejabis and	2015	International Journal of Middle East Studies	24
Lewis R. (Lewis, 2015)	Lewis, Reina	dewigies expanding the parameters of the modest fashion blogosphere	2015	Fashion Theory - Journal of Dress Body and Culture	24
Abokhodair N.; Vieweg S. (Abokhodair & Vieweg, 2016)	Abokhodair, Norah; Vieweg, Sarah	Privacy & social media in the context of the Arab Gulf	2016	DIS 2016 - Proceedings of the 2016 ACM Conference on Designing Interactive Systems: Fuse	98
Johnson N.F.; Zheng M.; Vorobyeva Y.; Gabriel A.; Qi H.; Velasquez N.; Manrique P.; Johnson D.; Restrepo E.; Song C.; Wuch J. 2016)	Vorobyeva, Y.	New online ecology of adversarial aggregates: ISIS and beyond	2016	Science	84
et al., 2016) Afriana J.; Permanasari A.; Fitriani A. (Afriana et al., 2016)	Afriana, J.; Permanasari, A.; Fitriani, A.	Project based learning integrated to stem to enhance elementary school's students' scientific literacy	2016	Jurnal Pendidikan IPA Indonesia	70
Magdy W.; Darwish K.; Abokhodair N.; Rahimi A.; Baldwin T. (Magdy et al., 2016)	Abokhodair, Norah	#ISISisNotIslam or #DeportAllMuslims? Predicting unspoken views	2016	WebSci 2016 - Proceedings of the 2016 ACM Web Science Conference	49
Aguilera-Carnerero C.; Azeez A.H. (Aguilera-Carnerero & Azeez, 2016)	Aguilera- Carnerero, Carmen	Islamonausea, not islamophobia: The many faces of cyber hate speech	2016	Journal of Arab and Muslim Media Research	34

Abokhodair N.; Abbar S.; Vieweg S.; Mejova Y. (Abokhodair et al., 2016)	Abokhodair, Norah; Abbar, Sofiane; Vieweg, Sarah; Mejova, Yelena	Privacy and twitter in Qatar: Traditional values in the digital world	2016	WebSci 2016 - Proceedings of the 2016 ACM Web Science Conference	26
Benigni M.C.; Joseph K.; Carley K.M. (Benigni et al., 2017)	Carley, Kathleen M.	Online extremism and the communities that sustain it: Detecting the ISIS supporting community on Twitter	2017	PLoS ONE	82
Horsti K. (Horsti, 2017)	Horsti, Karina	Digital Islamophobia: The Swedish woman as a figure of pure and dangerous whiteness	2017	New Media and Society	51
Walter B.F. (Walter, 2017)	Walter, Barbara F.	The New New Civil Wars	2017	Annual Review of Political Science	50
Abokhodair N.; Hodges A.; Vieweg S. (Abokhodair et al., 2017)	Abokhodair, Norah; Vieweg, Sarah	Photo sharing in the Arab gulf: Expressing the collective and autonomous selves	2017	Proceedings of the ACM Conference on Computer Supported Cooperative Work, CSCW	33
da Silva R.; Crilley R. (Da Silva & Crilley, 2017)	da Silva, Raquel	"Talk about terror in our back gardens": an analysis of online comments about British foreign fighters in Syria	2017	Critical Studies on Terrorism	25
Evolvi G. (Evolvi, 2017)	Evolvi, Giulia	Hybrid Muslim identities in digital space: The Italian blog Yalla Creative and Lucrative Dawa: The	2017	Social Compass	22
Nisa E.F. (Nisa, 2018a)	Nisa, Eva F.	Visual Culture of Instagram amongst Female Muslim Youth in Indonesia	2018	Asiascape: Digital Asia	61
Evolvi G. (Nisa, 2018a)	Evolvi, Giulia	Hate in a tweet: Exploring internet-based islamophobic discourses	2018	Religions	42
Nisa E.F. (Nisa, 2018b)	Nisa, Eva F.	Social media and the birth of an Islamic social movement: ODOJ (One Day One Juz) in contemporary Indonesia	2018	Indonesia and the Malay World	35
Baulch E.; Pramiyanti A. (Pramiyanti & Baulch, 2018)	Baulch, Emma; Pramiyanti, Alila	Hijabers on instagram: Using visual social media to construct the ideal muslim woman	2018	Social Media and Society	33
Husein F.; Slama M. (Husein & Slama, 2018)	Husein, Fatimah; Slama, Martin	Online piety and its discontent: revisiting Islamic anxieties on Indonesian social media	2018	Indonesia and the Malay World	27
Dynel M.; Poppi F.I.M. (Dynel & Poppi, 2018)	Dynel, Marta	In tragoedia risus: Analysis of dark humour in post-terrorist attack discourse	2018	Discourse and Communication	25
Klein O.; Muis J. (Klein & Muis, 2019)	Klein, Ofra	Online discontent: comparing Western European far-right groups on Facebook	2019	European Societies	56
Asongu S.A.; Nwachukwu J.C.; Pyke C. (Asongu et al., 2019)	Nwachukwu, Jacinta C.	The Comparative Economics of ICT, Environmental Degradation and Inclusive Human Development in Sub-Saharan Africa	2019	Social Indicators Research	46
Ibtasam S.; Razaq L.; Ayub M.; Webster J.R.; Ahmed S.I.; Anderson R. (Ibtasam et al., 2019)	Ibtasam, Samia; Razaq, Lubna; Ayub, Maryam; Webster, Jennifer R.	"My cousin bought the phone for me. I never go to mobile shops.": The role of family in women's technological inclusion in Islamic culture	2019	Proceedings of the ACM on Human-Computer Interaction	35
Nisa E.F. (Nisa, 2019)	Nisa, Eva F.	Muslim Women in Contemporary Indonesia: Online Conflicting Narratives behind the Women	2019	Asian Studies Review	22

# Ulama Congress

Salinas E.; Pradell T.; Molera J. (Salinas et al., 2019)	Salinas, Elena; Pradell, Trinitat ; Molera, Judit	Glaze production at an early Islamic workshop in al-Andalus	2019	Archaeological and Anthropological Sciences	21
Aljarah I.; Habib M.; Hijazi N.; Faris H.; Qaddoura R.; Hammo B.; Abushariah M.; Alfawareh M. (Aljarah et al., 2021)	Habib, Maria; Qaddoura, Raneem	Intelligent detection of hate speech in Arabic social network: A machine learning approach	2021	Journal of Information Science	51

Table 6. 18 Top Female Authors by Productivity and Citation

Female Author	Title	Year	Source title	Cited	T. Article	
	Global infertility and the globalization of new reproductive technologies: Illustrations from Egypt	2003	Social Science and Medicine	206		
	Middle Eastern masculinities in the age of new reproductive technologies: Male infertility and stigma in Egypt and Lebanon	2004	Medical Anthropology Quarterly	136		
	"He won't be my son": Middle Eastern Muslim men's discourses of adoption and gamete donation	2006	Medical Anthropology Quarterly	112		
Inhorn, Marcia C.	Mutuality and immediacy between marja and muqallid: Evidence from male in vitro fertilization patients in shii lebanon	2011	International Journal of Middle East Studies	25	6	
	Medical Cosmopolitanism in Global Dubai: A Twenty-first-century Transnational Intracytoplasmic Sperm Injection (ICSI) Depot		Medical Anthropology Quarterly	9		
	Abrahamic traditions and egg freezing: Religious Women's experiences in local moral worlds	2020	Social Science and Medicine	8		
	Performing citizenship on YouTube: Activism, satire and online debate around the anti-Islam video Fitna	2010	Critical Discourse Studies	104		
van Zoonen, Liesbet	Cosmopolitan communication online: YouTube responses to the anti-Islam film Fitna	2011	British Journal of Sociology	21	3	
	How funny can Islam controversies be? Comedians defending their faiths on YouTube	2013	Television and New Media	7		
	Performing citizenship on YouTube: Activism, satire and online debate around the anti-Islam video Fitna	2010	Critical Discourse Studies	104	2	
Vis, Farida	Cosmopolitan communication online: YouTube responses to the anti-Islam film Fitna	2011	British Journal of Sociology	21	2	
	Performing citizenship on YouTube: Activism, satire and online debate around the anti-Islam video Fitna	2010	Critical Discourse Studies	104		
Mihelj, Sabina	Cosmopolitan communication online: YouTube responses to the anti-Islam film Fitna	2011	British Journal of Sociology	21	2	
Abokhodair, Norah	Privacy & social media in the context of the Arab Gulf	2016	DIS 2016 - Proceedings of the 2016 ACM Conference on Designing Interactive Systems: Fuse	98	6	

	#ISISisNotIslam or #DeportAllMuslims? Predicting unspoken views	2016	Proceedings of the 2016 ACM Web Science Conference	49	
	Photo sharing in the Arab gulf: Expressing the collective and autonomous selves	2017	Proceedings of the ACM Conference on Computer Supported Cooperative Work, CSCW	33	
	Privacy and twitter in Qatar: Traditional values in the digital world	2016	WebSci 2016 - Proceedings of the 2016 ACM Web Science Conference	26	
	"Against marrying a stranger:" Marital matchmaking technologies in Saudi Arabia	2017	DIS 2017 - Proceedings of the 2017 ACM Conference on Designing Interactive Systems	20	
	Holy Tweets: Exploring the Sharing of Quran on Twitter	2020	Proceedings of the ACM on Human-Computer Interaction	7	
	Privacy & social media in the context of the Arab Gulf	2016	DIS 2016 - Proceedings of the 2016 ACM Conference on Designing Interactive Systems: Fuse	98	
Vieweg, Sarah	Photo sharing in the Arab gulf: Expressing the collective and autonomous selves	2017	Proceedings of the ACM Conference on Computer Supported Cooperative Work, CSCW	33	3
	Privacy and twitter in Qatar: Traditional values in the digital world	2016	WebSci 2016 - Proceedings of the 2016 ACM Web Science Conference	26	
	Creative and Lucrative Dawa: The Visual Culture of Instagram amongst Female Muslim Youth in Indonesia	2018	Asiascape: Digital Asia	61	
	Social media and the birth of an Islamic social movement: ODOJ (One Day One Juz) in contemporary Indonesia	2018	Indonesia and the Malay World	35	
Nisa, Eva F.	The internet subculture of Indonesian face- veiled women	2013	International Journal of Cultural Studies	30	5
	Muslim Women in Contemporary Indonesia: Online Conflicting Narratives behind the Women Ulama Congress	2019	Asian Studies Review	22	
	Internet and Muslim Women	2021	Handbook of Contemporary Islam and Muslim Lives	0	
	Hate in a tweet: Exploring internet-based islamophobic discourses	2018	Religions	42	
	Hybrid Muslim identities in digital space: The Italian blog Yalla	2017	Social Compass	22	
	Emotional politics, islamophobic tweets: The hashtags #Brexit and #chiudiamoiporti	2019	Partecipazione e Conflitto	8	
Evolvi, Giulia	The veil and its materiality: Muslim women's digital narratives about the burkini ban	2019	Journal of Contemporary Religion	8	6
	Introduction: Islam, space, and the internet	2021	Journal of Religion, Media and Digital Culture	4	
	Likes, comments, and follow requests: The instagram user experiences of young Muslim women in the Netherlands	2021	Journal of Religion, Media and Digital Culture	2	

WebSci 2016 -

Akou, Heather	Building a new "world fashion": Islamic dress in the twenty-first century	2007	Fashion Theory - Journal of Dress Body and Culture	38	2
Marie	Interpreting Islam through the Internet: Making sense of hijab	2010	Contemporary Islam	28	-
Ibtasam, Samia	"My cousin bought the phone for me. I never go to mobile shops.": The role of family in women's technological inclusion in Islamic culture	2019	Proceedings of the ACM on Human-Computer Interaction	35	2
	For God's sake! Considering Religious Beliefs in HCI Research: A Case of Islamic HCI	2021	Conference on Human Factors in Computing Systems - Proceedings	9	
Paulch Emma	Hijabers on instagram: Using visual social media to construct the ideal muslim woman	2018	Social Media and Society	33	2
Baulch, Emma	Beyond the Middle Classes, Beyond New Media: The Politics of Islamic Consumerism in Indonesia	2024	Asian Studies Review	0	2
Dunani anti Alila	Hijabers on instagram: Using visual social media to construct the ideal muslim woman	2018	Social Media and Society	33	2
Pramiyanti, Alila	Hijabers on Instagram: Using Visual Social Media to Construct the Ideal Muslim Woman	2018	Social Media and Society	27	2
	Accelerating Islamic charities in Indonesia: zakat, sedekah and the immediacy of social media	2020	South East Asia Research	28	
Slama, Martin	Online piety and its discontent: revisiting Islamic anxieties on Indonesian social media	2018	Indonesia and the Malay World	27	3
	Imagining indonesian islam as a center: New mediations and old concepts of power	2020	Archiv Orientalni	4	
	Muslim women's online discussions of gender relations in Islam	2010	Journal of Muslim Minority Affairs	25	
Piela, Anna	How do Muslim women who wear the niqab interact with others online? A case study of a profile on a photo-sharing website	2017	New Media and Society	7	3
	Online Islamic Spaces as Communities of Practice for Female Muslim Converts Who Wear the Nigab	2015	Hawwa	4	
Cuala a uni.	Women's Digital Activism in a Changing Middle East	2015	International Journal of Middle East Studies	24	
Sreberny, Annabelle	The internet in Iran: The battle over an emerging virtual public sphere	2010	Internationalizing Internet Studies: Beyond Anglophone Paradigms	3	2
	Glaze production at an early Islamic workshop in al-Andalus	2019	Archaeological and Anthropological Sciences	21	
Salinas, Elena	An early example of glaze technology diffusion in North Africa: The Islamic workshop of Tahert (central Maghreb, Algeria)	2023	Journal of Archaeological Science: Reports	0	2
	Glaze production at an early Islamic workshop in al-Andalus	2019	Archaeological and Anthropological Sciences	21	
Pradell, Trinitat	An early example of glaze technology diffusion in North Africa: The Islamic workshop of Tahert (central Maghreb, Algeria)	2023	Journal of Archaeological Science: Reports	0	2
	Performing citizenship on YouTube: Activism, satire and online debate around the anti-Islam video Fitna	2010	Critical Discourse Studies	104	
Mihelj, Sabina	Cosmopolitan communication online: YouTube responses to the anti-Islam film	2011	British Journal of Sociology	21	2

Figure 12, Table 5, and Table 6 present a comprehensive analysis of the role and contributions of female authors in digital Islamic literature, highlighting their significant impact across various disciplines such as social sciences, medical anthropology, and geopolitics. It shows the diversity of topics covered by these authors, including environmental ethics, women's political rights, and the implications of new reproductive technologies in Middle Eastern societies. This research emphasizes the importance of collaboration among female scholars and the high level of recognition they receive, as evidenced by citations. Notably, Marcia C. Inhorn stands out for her contribution to medical anthropology and reproductive technology. This paper also identifies emerging themes in digital Islamic literature, such as the expression of Islamic identity through social media (Abokhodair & Vieweg, 2016), the intersection of technology with religious practice, and evolving gender dynamics in Muslim societies (Clarke & Inhorn, 2011; Inhorn, 2003, 2004, 2006; Stowasser, 2001). This analysis challenges existing perceptions of gender bias in Islamic studies and the digital humanities, underscoring the vital role female authors play in advancing the discourse on Islam and digital culture (Clarke & Inhorn, 2011; Inhorn, 2003, 2004, 2006).

An analysis of the most prolific female writers in the digital Islamic literature reveals a dynamic and diverse field. Their contributions not only enrich the academic world but also provide deep insights into the complexities of digital Islam and gender dynamics.

#### Most Cited References in Digital Islam Literature

This study uses bibliometric indicators, such as the most cited references by the author and the most cited sources and references, to analyze the theoretical framework that dominates studies on the interaction between Islam and digital technology.

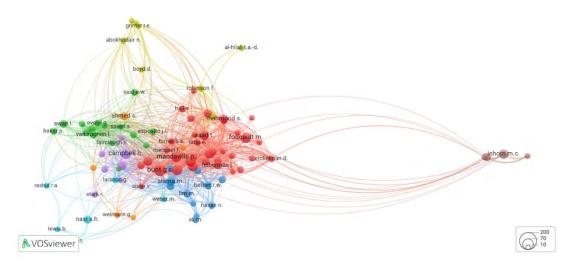


Figure 13. Most cited Reference by Author in Digital Islam

<u>Figure 13</u> shows the names of the authors of the documents referenced in the 1060 articles analyzed in this study. The table below provides a detailed summary of the 15 most influential authors.

Authors	Citation
Bunt G.R.	91
Foucault M.	71
Roy O.	71
Campbell H.	66

Table 7. 15 Most Influental References Authors

Mandaville P.	66
Eickelman D.F.	64
Anderson J.W.	63
Hirschkind C.	60
Asad T.	55
Inhorn M.C.	55
Bunt G.	53
Campbell H.A.	53
Slama M.	50
Mahmood S.	48
Ahmed S.	42

<u>Table 7</u> shows the authors who made the most significant contributions to the 1060 pieces of literature examining the relationship between Islam and digital technology based on the number of citations to their work in the documents analyzed.

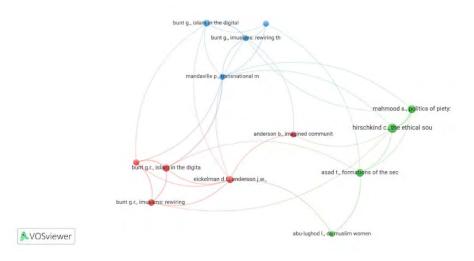
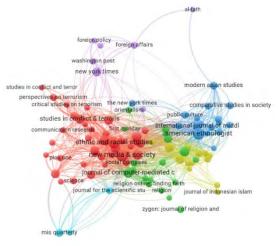


Figure 14. Most Cited References in Digital Islam

Table 8. 15 Most Cited References in Digital Islam

Authors	Article	Citations	
	The Ethical Soundscape: Cassette Sermons and Islamic		
Hirschkind C. (2009)	Counterpublics	26	
Mahmood S. (2012)	Politics of Piety: The Islamic Revival and the Feminist Subject	19	
Asad T. (2010)	Formations of the Secular: Christianity, Islam, Modernity Islam in the Digital Age: E-Jihad, Online Fatwas and Cyber Islamic	18	
Bunt G.R. (2003) Eickelman D.F.,	Environments	28	
Anderson J.W. (2003)	New Media in the Muslim World: The Emerging Public Sphere	14	
Bunt G.R. (2009)	iMuslims: Rewiring the House of Islam	23	
	Virtually Islamic: Computer-Mediated Communication and		
Bunt G.R. (2000)	Cyber Islamic Environments	11	
Mandaville P. (2006)	Transnational Muslim Politics: Reimagining the Umma	11	
Abu-Lughod L. (2015)	Do Muslim Women Need Saving?	10	
	Imagined Communities: Reflections on the Origin and Spread of		
Anderson B. (1991)	Nationalism	10	
Roy O. (2004)	Globalized Islam: The Search for a New Ummah	10	

<u>Table 8</u> and <u>Figure 14</u> show the significant works frequently cited in the literature on the correlation between Islam and technology, emphasizing their impact on shaping academic comprehension of the topic.





**♣VOSviewer** 

Table 9. 15 most cited sources

Figure 15. Most Cited Sources

Sources	Citation
American Ethnologist	94
Ethnic and Racial Studies	93
New Media & Society	103
Contemporary Islam	62
Journal of Communication	73
Journal of Computer-Mediated Communication	64
Journal of Ethnic and Migration Studies	63
New Media in the Muslim World: The Emerging Public Sphere	63
The New York Times	56
Information, Communication & Society	56
Social media + Society	46
International Journal of Communication	46
Computers in Human Behavior	47
The Muslim World	49
Indonesia and the Malay World	49

The interaction between Islam and digital technology is a dynamic and interdisciplinary field of study, as observed from the analysis of various data sources in Figure 15 and Table 9. Multiple disciplines such as anthropology, sociology, and media studies contribute to this research by offering diverse perspectives on the topic. The most-cited references indicate a significant focus on the influence of new media and communication technologies on Muslim life. Scholars such as Bunt and Hirschkind are recognized for their influential contributions to the field. Several journals, including "American Ethnologist," "New Media & Society," and "Contemporary Islam," Contemporary Islam, are important sources for publishing current and influential studies on this subject. Research in this area considers both global and local contexts, recognizing the unique social, cultural, and political dynamics at play. Critical topics that are frequently explored include identity, online Muslim communities, religious practices in the digital age, and debates on religious authority in digital

spaces. Overall, this study combines theoretical analysis with empirical case studies to understand the impact of technology on the social and spiritual dimensions of Muslims' lives.

#### Discussion

## What a Digital Islam?

This bibliometric analysis has revealed some important findings in the form of influential authors, the most impactful articles, topic trends, topic evolution, and the most cited references among authors who have written articles on digital Islam. The main findings described above can be the basis for formulating what and how this concept of digital Islam is actually. In this discussion, I will present in more detail, based on the results of bibliometric research, the question of what digital Islam is.

Before discussing the topic of digital Islam, two important terms in the discourse of Islam in the digital age often appear as the basis of writers' thoughts: digital religion and the term digital ummah or cyber ummah. Therefore, it is important to first position our understanding of the two terms.

Digital religion encompasses the intersection, transformation, and coexistence of religious practices with digital technologies and cultures. It includes the expression, experience, and negotiation of religious beliefs, practices, communities, and identities in digital spaces, such as social media, websites, online forums, and virtual reality environments. The field studies how online and offline religious activities are interconnected and how digital technologies influence traditional religious practices (Campbell and Evolvi 2020). It also explores the emergence of new forms of spirituality and religious engagement supported by the digital world (Campbell & Evolvi, 2020). The study of digital religion also focuses on the impact of digital media and the Internet on how religious adherents practice their faith, interact with religious communities, and integrate their religion with digital culture, thereby changing the landscape of contemporary religiosity (Campbell, 2017).

The concept of "Cyber Ummah" or "Virtual Ummah" refers to the Islamic community in cyberspace that emerged with the advent of the Internet in the Muslim world (Khamis, 2018). Cyber Ummah represents an online community that transcends geographical, ethnic, and cultural boundaries (Khamis 2018). The Internet enables global communication among Muslims and interactions between different groups of Muslims and non-Muslims (Khamis 2018). It creates an egalitarian and interactive virtual community that allows for the formation of new identities and resistance in the online Islamic discourse. Cyber Ummah has implications for the creation of diverse identities and resistance, shaping various Islamic discourses and sites in cyberspace (Khamis 2018). Online sites and platforms function as virtual marketplaces in which ideas and concepts about Islam and Muslims are exchanged. Muslims use online resources to access mainstream and alternative interpretations of Islamic doctrines and scriptures. Overall, the Cyber Ummah is a phenomenon that reflects the changes in Muslim societies online and offline and plays an important role in shaping the religious, social, and cultural aspects of Muslim communities in the digital age.

First, let us look at one of the bibliometric findings: in 1983 and 1993, there were two papers with the highest citation value. The papers were by Rapoport (1983) and Robinson (1993), Rapoport's work, in this case, criticizes the definition of the concept of "modern terrorism" that is only associated with an increase in the number of incidents, the amount of damage, and the transnational nature of terrorist attacks today. He emphasized the importance of considering historical roots and early experiences in understanding terrorism (Rapoport, 1983). This research shows that the definition of modern terrorism is related not only to technological changes but also to significant political events that influence the motivations and actions of terrorist groups

(Rapoport, 1983). Furthermore, Robinson's work discusses how print technology affected religious change in Islam in his paper from 1993. He explains that Muslims' negative responses to printing are deeply rooted in the system of knowledge transmission in Islamic societies (Robinson, 1993). Printing challenged the traditional method of knowledge transmission from person to person, which is central to Islamic authority and belief in knowledge (Robinson, 1993). Muslims hesitated to adopt the printing press until they perceived benefits that outweighed the potential harm they could cause (Robinson 1993). The adoption of printing in Muslim societies is often driven by the belief that it is a necessary tool for maintaining faith (Robinson, 1993).

These two works do not directly state an Islamic definition of digital Islam. However, as early works that discussed the relationship between technology and Islam, these works need to be considered. Digital Islam can be defined by several important indicators (Rapoport, 1983; Robinson, 1993). The first is the interaction between history and technology, where historical events and technological developments influence religious practices and understanding in Islam. Second, the transformation in knowledge transmission, where the way knowledge is delivered and received, changes from traditional face-to-face to print and digital media. Third, sociopolitical dynamics, in which political and social events shape responses to technology and definitions of religious practice. Finally, adaptation and resistance to innovation, in which Muslims respond to new technologies by weighing benefits and potential harm.

Through these indicators, Digital Islam has become a complex phenomenon involving interactions between tradition, technology, and socio-political factors. This phenomenon includes changes in knowledge transmission, adaptation to innovation, and dynamics of religious practice.

Through bibliometric analysis, I also found that several articles and authors have the most impact on the discussion of digital Islam. Norah Abokhodair, Francis Robinson, Sarah Vieweg, Eva F. Nisa, Bryan S. Turner, Anton Törnberg, Jamie Cleland, and Patrick Eisenlohr are the most influential authors based on bibliometric analysis. Furthermore, I conducted an in-depth review to identify key indicators in the articles of these researchers to identify some concepts related to digital Islam.

With respect to Digital Islam, an analysis of the research findings revealed several key aspects of digital Islam. First, the use of digital technology, especially social media, has changed the dissemination of religious information and formation of religious discourse among Muslim communities around the world. Individuals can now seek religious knowledge independently through the Internet, which challenges traditional religious authorities and digitally empowers them (Robinson 1993; Turner 2007).

In addition, the Internet has facilitated global connectivity and opened up spaces for international discussions and interpretations of Islam. This expansion challenges the authority of traditional Islamic scholars and allows for diverse interpretations and translations of Islam through digital platforms (Robinson, 1993).

Third, social media platforms can perpetuate negative stereotypes about Islam and Muslims, contributing to the (re)production of discursive power that influences the public's understanding of religion (Eickelman 2003).

Moreover, the use of sound reproduction technologies in religious practices and the sharing of religious content on digital platforms reflects contemporary adaptations in Islam, signaling the emergence of Digital Islam.

The use of technology in Muslim communities is influenced by traditional values and cultural expectations, particularly in terms of privacy and social media interactions. In addition, the role of Muslim women in digital spaces is significant. Women use and influence the digital space for religious, social, and political purposes, emphasizing the importance of gender in discussions on Digital Islam (Nisa, 2018b, 2018a, 2021).

In addition, the implementation and utilization of digital technologies in religious contexts, such as matchmaking technologies and sharing Quranic verses on Twitter, illustrate the potential of digital technologies to enhance religious communities and practices (Abokhodair et al., 2020).

To understand Digital Islam, it is necessary to consider the social, cultural, and political contexts in which Digital Islam exists. In the thematic analysis related to digital Islam, various themes have been identified, such as "terrorism," "Islamic state," and "jihad" being the main research focus, while underlying themes such as "Malaysia," "technology," and "culture" are recognized as important but less explored. The shift in topics from 2008 to 2021 reflects the use of technology in religious practices, theological debates, and exploration of religious identity. Social media, especially Instagram, has become a popular platform for sharing religious, political, and cultural perspectives and discussing issues such as Muslim identity and Islamophobia. There is also increasing emphasis on the intersection of Islam and technology, including gender issues and the representation of Muslim women. Traditional religious themes and new themes such as "bioethics" and "hajj" are also important. Sociopolitical issues such as "Islamophobia" and "nationalism" are also of concern.

Digital Islam can thus be defined as the integration of Islam with digital technology, which includes the use of digital platforms and social media to promote inclusivity, accessibility, and community building within the global Muslim community. This suggests a broadening of the scope of the discussion, in which Islamic studies are becoming more integrated with technology, adapting to contemporary debates, and engaging in various fields, thus expanding the scope of the discussion on Islam in the digital age.

# Digital Islam as a Specialization in Digital Religion Studies

Digital Islam is a specialized study of Islam's interactions with digital religion (Campbell, 2012; Campbell & Evolvi, 2020). It involves research on how Islamic practices and communities adapt in a digital context. This transformation has been influenced by the history and technological developments that have affected Islam. This study involves an in-depth exploration of the ways in which Islamic practices, beliefs, and communities are adapted and reconstructed in digital contexts. This phenomenon is reflected in various aspects ranging from the transformation of religious practices and the dissemination of information to the formation of communities that undergo significant changes due to adaptation and the dynamic interaction between tradition and technological innovation. This transformation is inseparable from the historical context and the evolution of technology that has influenced Islam, as emphasized by Rapoport and Robinson, who show how print technology was initially received with hesitation by Muslims but was eventually adopted because of its great benefits in maintaining faith.

#### Digital Muslim and Digital Ummah

To further analyze digital Islam, it is important to acknowledge the contributions of various researchers who have deepened our understanding of the subject. Norah Abokhodair, Eva F. Nisa, Bryan S. Turner, and Anton Törnberg, for example, have explored aspects such as the representation of Islam on social media, the use of digital technologies in religious practices, and the social dynamics that arise from online interactions in Islamic contexts. These works help us understand

how digital technologies not only change religious practices but also shape discourse and identity within Muslim communities.

The term "digital Muslim" or "digital Ummah" refers to the online Muslim community, which is a manifestation of cyber Ummah (Khamis 2018). This concept highlights how Muslims, transcending geographical and cultural boundaries, use digital technologies to communicate, interact, and build communities. Digital Muslims are individuals whose religious practices are integrated into a digital context, while digital Ummah is the global community formed through these interactions. Important factors driving this concept include the use of social media for the dissemination of religious information, challenges to traditional religious authority through wider access to information, and formation of new identities and resistance in the digital space.

These studies highlight the impact of digital technologies on Islam and Muslims, focusing on four main areas: dissemination of religious information, community and identity building, adaptation and resistance to innovation, and gender roles. Digital technologies have revolutionized the dissemination of religious information, allowing Muslims to access a plethora of sources without relying on traditional intermediaries. This democratization of information challenges existing religious authority and fosters a broader space for interpretation and discussion. Furthermore, social media and online platforms facilitate the formation of global Muslim communities, enhancing the concept of a digital ummah that promotes solidarity and a shared identity across geographic boundaries. This paper also examines the varied responses of Muslims to technological innovations, highlighting the balance between preserving tradition and embracing modernity. Additionally, it underscores the significance of gender, particularly the role of women in using digital platforms for education, social engagement, and political activism, which challenge traditional narratives and enable self-representation. By integrating these aspects, this study provides a comprehensive understanding of the complex dynamics between Islam, its followers, and digital technology, illustrating how these interactions shape and sustain global Muslim communities in the digital age.

# Theoretical Frameworks in Digital Islam

This study aimed to understand the key theories and concepts that have shaped the field by identifying and analyzing the most cited documents and references in the literature. It also evaluates these theoretical frameworks to gain insights into how they explain the relationships between Islamic religious practices and the use and impact of digital technology. This study critically assesses the effectiveness and relevance of these theoretical approaches and suggests new directions for future research in this area.

As previously found, this study identified each of the 15 most-cited references, their sources, and authors. Some of the key concepts from these 15 references are as follows:

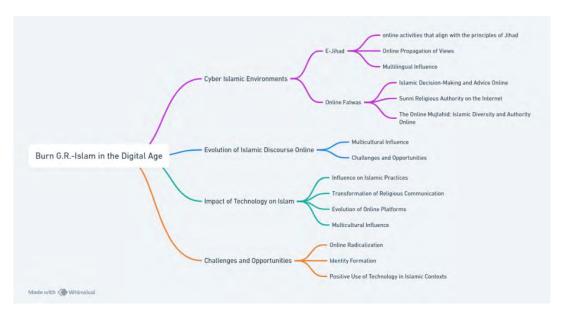


Figure 16. "Islam in the Digital Age" by Gary R. Bunt

As shown in Figure 16, Bunt (2003) examines the transformative role of technology, especially the Internet, in Muslim religious practices. This work introduces the concept of the Cyber Islamic Environment, which has facilitated new forms of religious expression, such as E-jihad and online fatwas. These developments allow for the wider dissemination of Islamic views and decision-making processes. The book also addresses the complexities of cultural mixing within online discourse, which presents opportunities for broadening the reach of traditional teachings and challenges to preserving religious authenticity. Furthermore, Bunt discussed the impact of technology on the expansion of Arabic culture and language, alongside concerns about online radicalization and identity formation. The author advocates constructive engagement with technology, emphasizing that innovation and adaptation are crucial for maintaining the essence of religious practices in the digital era.

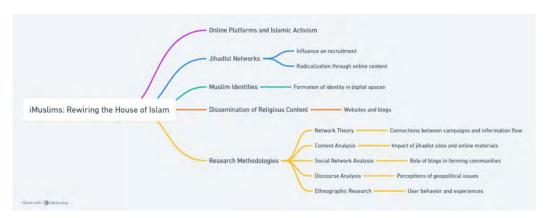


Figure 17. iMuslims: Rewiring the House of Islam by Gary R. Bunt

As shown In Figure 17, Bunt (2009) provides a comprehensive examination of the impact of online platforms on Islamic activism, jihadi networks, Muslim identity, and the spread of religious teaching. Using a multidisciplinary approach, Bunt explored the intricate dynamics of online Muslim communities. The book employs network theory to analyze the connections within Islamic campaigns and the distribution of information online; content analysis to assess the role of jihadi websites and materials in recruitment and radicalization; and social network analysis to explore the formation of Muslim networks and communities via blogs. Additionally, discourse analysis was

applied to understand how online narratives influence community perceptions of global events, while ethnographic research offers deep insights into the digital experiences, motivations, and behaviors of users. Through these methodologies, Bunt's work illuminates the complex interplay between Islam and technology, thus enhancing our understanding of the digital dimensions of religious life and identity in the contemporary world.



Figure 18. Hashtag Islam

Furthermore, as shown in Figure 18, Bunt (2018) discusses the development of cyber-Islamic environments (CIES) and the relationship between technology and Islamic practices. The book reviews several key themes and perspectives, including the evolution of CIES as influenced by developments in Internet technology and how it is changing religious discourse and authority in Islam. The author uses an interdisciplinary approach by drawing on insights from fields such as sociology, anthropology, religious studies, and political science, to understand the complex interactions between technology and Islam. One important theme addressed in this book is the impact of technology on Islamic religious authority online, including the challenges faced by traditional authorities in the digital age, and the role of online platforms in shaping contemporary understandings of religious leadership. The book also explores the role of social media in shaping Muslim networks and influencing relationships between Muslim individuals and communities in various contexts.



Figure 19. Campbell Theori of Digital Religion

The next expert who was also frequently cited by the authors in the analyzed articles was Heidi Campbell (2016). As Figure 19 shows, the concept often taken from Campbell is a digital religion. Exploration of the phenomenon of "Digital Religion" includes the study of how religion and new information communication technologies, especially the Internet, interact with each other. It examines how religious beliefs, practices, and communities manifest and transform in digital spaces, including online religious communities, virtual worship spaces, and religious rituals performed online (Campbell & Vitullo, 2016). Digital Religion encompasses various terms such as "cyber religion," "virtual religion," "network religion," and "internet religion," marking the field as an interdisciplinary one involving Religious Studies, Communication and Media Studies, Information Studies, and Sociology.

Researchers have explored the interconnections between online and offline religious realms, highlighting how traditional religious contexts blend with new digital contexts (Campbell 2012). In the Western context, "Digital Religion" has emerged as a way to discuss and study online religious practices that influence offline religious communities and institutions. The concept recognizes the unique influence of the Internet and digital technologies in shaping religious practices and beliefs as well as changing perceptions of religiosity in society. Digital Religious Studies is considered a subfield of broader disciplines, such as Internet Studies and Media, Culture and Religion Studies.

Research in this field was rooted in the mid-1990s, focusing on the use of the Internet by religious groups and its potential implications for religious beliefs and practices (Rapoport, 1983; Robinson, 1993). It also examines how religious groups move religious practices to the Internet, creating online communities and houses of worship, and conducting rituals online (Tsuria et al., 2017). Helland (2005; 2005) distinguishes between "religion online" versus "online religion," with "religion online" referring to information presented and controlled by traditionasl religious organizations or leaders, while "online religion" relates to religious innovation and collaboration that creates new understandings of religion through online environments.

Subsequent studies frequently cited in 1060 were spread across multiple authors. In contrast, the authors cited the work of Bunt and Campbell. Therefore, in this case, a focused summary of the most cited studies is presented in <u>Table 10</u>.

Table 10. Insight from other most cited references in Digital Islam

No.	Paper Title	Insight
1	The Ethical Soundscape: Cassette Sermons and Islamic Counterpublics	This book examines how cassette sermons became a powerful medium in Egypt for shaping public discussions on morality, demonstrating the role of new media in forming Islamic counterpublics.
2	Politics of Piety: The Islamic Revival and the Feminist Subject	Mahmood's work is a critical analysis of the Islamic revival movement in Egypt, focusing on women's participation. It challenges Western perceptions of agency and subjectivity, providing insights into the complex interplay between religion and gender.
3	Formations of the Secular: Christianity, Islam, Modernity	Asad explores the concept of secularism as it has evolved in Christian and Islamic contexts, questioning the assumptions of modernity and its impact on religious practices.
4	New Media in the Muslim World: The Emerging Public Sphere	This book discusses the transformative role of new media technologies in Islamic societies, highlighting how they have contributed to the emergence of a public sphere where traditional and modern values intersect.
5	Transnational Muslim Politics: Reimagining the Umma	Mandaville examines how Muslim politics transcends national boundaries, exploring the concept of the Umma (the global Muslim community) in the context of globalization and technological advances.
6	Do Muslim Women Need Saving?	Abu-Lughod critiques the Western narrative of rescuing Muslim women, arguing for a deeper understanding of cultural practices and the diverse experiences of women within Islamic societies.
7	Imagined Communities: Reflections on the Origin and Spread of Nationalism	Though not exclusively about the Islamic world, Anderson's seminal work on nationalism offers critical insights into how national identities are constructed, which is relevant to understanding Muslim identity and solidarity.
8	Globalized Islam: The Search for a New Ummah	Roy discusses the challenges and transformations within Islam in the context of globalization, focusing on the search for a new form of Muslim community that transcends traditional geographic and cultural boundaries.

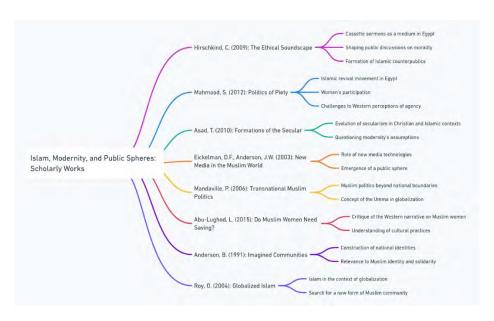


Figure 20. Mapping insight from other most cited references in Digital Islam

<u>Figure 20</u> explores the dynamic role of digital platforms in shaping contemporary Islamic identities, practices, and communities, emphasizing their function as transformative public spaces. It highlights how digital spaces facilitate discussions of morality and ethics, challenge traditional boundaries, and enable the formation of new counterpublics within Islamic communities. Notably, this study addresses the impact of digital engagement on gender dynamics, offering perspectives on the resistance and reaffirmation of societal norms. It also delves into the intersection of secularism, modernity, and religion in digital contexts, enriching the discourse on Muslim societies' navigation of traditions and modernity. Furthermore, this study examines the concept of the Ummah in the digital age, focusing on how digital platforms redefine community boundaries and facilitate transnational connections. This collection of scholarly works provides a comprehensive overview of digital Islam, presenting it as a field in which traditional and modern elements intersect, highlighting the active role of digital spaces in reshaping Islamic identity, authority, and community in the 21st century.

Furthermore, based on the analysis of the study and the main insights from most references, including the theories used and taken in digital Islam references, the following theoretical framework is formulated in this research:

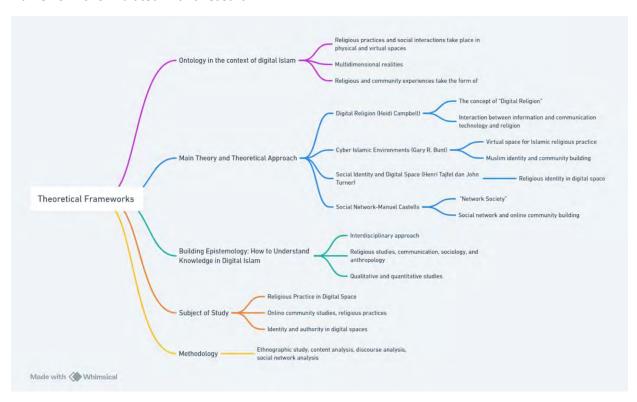


Figure 21. Theoretical Frameworks in Digital Islam

Figure 21 outlines the structure of thought in the realm of Digital Islam, delineating it into four principal branches and their respective subcategories. The first branch, Ontology in the Context of Digital Islam, examines the complex reality of religious practices within both tangible and virtual realms by focusing on community and religious experiences. The second branch discusses Major Theories and Theoretical Approaches, introducing concepts such as Heidi Campbell's digital religion and the Gary R. Bunt's Cyber Islamic Environments, alongside theories on social and digital identity and network societies, emphasize Muslim identity and community formation in digital spaces. Building Epistemology, the third branch adopts an interdisciplinary methodology incorporating religious studies, communication, sociology, and anthropology, utilizing both quantitative and qualitative research to delve into religious practices in digital settings. The final branch, Subjects of

Study, centers on methodological areas, including religious practices, online communities, and the concepts of identity and authority within digital environments, employing ethnographic studies, content analysis, discourse analysis, and social network analysis. This study serves as a comprehensive guide for researchers interested in understanding how Islam is practiced and manifested in digital contexts, highlighting the multidisciplinary nature of this research and the variety of methods required for a thorough investigation.

## Conclussion

This study presents three foundational insights into digital Islamic studies, addressing key questions regarding the nature of digital Islam, its theoretical framework, and the significant role of women. First, it positions digital Islam as a critical subfield of digital religion, highlighting the intersection of Islamic traditions and digital technologies. This intersection catalyzes transformative shifts in religious practices, community formations, and identity reconstructions in the digital sphere, challenging conventional paradigms and forging a new understanding of Islam in the digital age.

Moreover, the research articulates the concepts of 'digital Muslim' and 'digital ummah' as central to this field. The 'digital Muslim' refers to individuals whose Islamic practice and community engagement take place in digital environments, and embodies the broader concept of the 'digital Ummah' - a global online Muslim community that transcends traditional geographic and cultural boundaries. This global community exemplifies significant changes in how religious information is disseminated and how Muslims worldwide connect, share, and interact in the digital age. The synonymous use of digital Muslims and ummah in this study underscores the seamless integration of individual and collective Islamic identities in digital spaces, demonstrating the expansive reach and communal solidarity of Islam across the digital landscape.

This study delves into the theoretical frameworks that frame digital Islam, drawing on disciplines such as digital religious studies, sociology, and anthropology to construct a comprehensive analytical lens. By engaging with theories such as Heidi Campbell's "digital religion," Gary R. Bunt's "cyber-Islamic environments," and discussions of digital and social identity by Henri Tajfel, John Turner, and Manuel Castells' concept of "network societies," the research enriches our understanding of the socio-cultural and technological forces that shape the digital Muslim experience.

Significantly, women's empowerment and active participation in digital Islamic spaces have emerged as key findings that challenge traditional gender narratives. Women writers and scholars enrich the discourse, navigate, and influence the digital religious landscape through their contributions. The strategic use of digital platforms for education, socialization, and activism not only challenges established gender roles but also underscores women's empowerment and self-representation in the context of digital Islam.

In sum, the findings of this study highlight the transformative impact of digital Islam, characterized by the integration of tradition and digital innovation, the elucidation of multidisciplinary theoretical frameworks, and the dynamic engagement of women. By exploring the nature of digital Islam, the synonymous relationship between digital Muslims and Ummah, and the empowering role of women, this research significantly advances the field of action studies.

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Ref.: Ms. No. SSHO-D-24-00472

Exploring the Intersection of Islam and Digital Technology: A Bibliometric Analysis

Social Sciences & Humanities Open

Dear Mr Wahid,

Reviewers have now commented on your paper. You will see that they are advising that you revise your manuscript. If you are prepared to undertake the work required, I would be pleased to reconsider my decision.

For your guidance, reviewers' comments are appended below.

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Yours sincerely

César García-Díaz, Ph.D. Special Issue Editor Social Sciences & Humanities Open

Comments from the Editors and Reviewers:

Editor

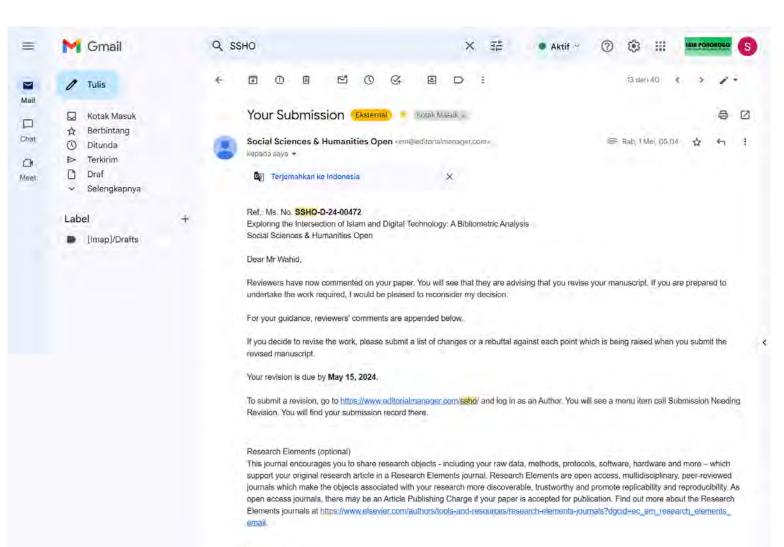
Please address all the points raised by reviewers. When submitting the revised manuscript, please also prepare a Word document detailing each point and your action. Clearly specify if you agree or disagree, provide a remarks, and then if any, what changes have you done.

Reviewer #1:

# Attachments for Manuscript Number SSHO-D-24-00472 R2 "Exploring the Intersection of Islam and Digital Technology: A Bibliometric Analysis"

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Yours sincerely

César Garcia-Diaz, Ph.D. Special Issue Editor Social Sciences & Humanities Open

Comments from the Editors and Reviewers:

### Editor:

Please address all the points raised by reviewers. When submitting the revised manuscript, please also prepare a Word document detailing each point and your action. Clearly specify if you agree or disagree, provide a remarks, and then if any, what changes have you done.

### Reviewer #1:

This abstract provides a fairly comprehensive overview of the content and objectives of the research carried out. However, there are several areas where this abstract could be improved or clarified:

- 1. Does this research aim to identify specific trends, analyze the impact of digital technology on Islamic religious practices, or measure the adoption of digital technology by Muslim communities?
- It is not stated in detail how the bibliometric data was collected, including the search and analysis criteria used. In fact, I saw a lot of research results using the VOSviwer tool, while there were fewer results from biblioshiny.
- results using the YOSviwer tool, while there were tewer results from biblioshiny.

  3. Does this research present new findings or identify gaps in existing research? Highlighting the contributions of this research will help clarify its importance and relevance.

This introduction provides a broad and detailed overview of the importance of digital Islam in Muslim societies and an understanding of the

- theoretical framework underlying research in this field. However, there are several areas where this introduction could be improved;

  1. Although the introduction mentions a variety of approaches to defining "digital Islam," it would be better to provide a clearer definition. A clear definition will help readers better understand the scope of the research.
- While it is important to understand the significance of digital Islam, the introduction could be strengthened by explaining why this research is
  important or relevant in the current context. Mentioning the challenges or gaps in existing research that the study aims to fill will provide a
  stronger context.
- The introduction provides an overview of the bibliometric methods used in the research. However, it would be better to provide a more detailed explanation of how these methods will be implemented, including the search and analysis criteria used.
- 4. Although the introduction mentions some of the contributions of previous research, it would be better to provide a brief analysis of how this research broadens or deepens the understanding of this topic compared to previous research.

#### Reviewer #2-

- Ensure that all key terms, especially "digital Islam" and "digital ummah", are clearly defined early in the paper to establish a solid theoretical foundation. Given the complexity and novelty of the concepts, defining these terms will help in aligning the readers' understanding with the authors' perspectives.
- 2. The introduction could be more focused on outlining the specific objectives of the bibliometric analysis. Clarifying how this analysis contributes uniquely to the field will help in setting the stage for the research questions and the overall study.
- Check for consistency in the formatting of references, figures, and tables. Ensuring uniformity in presentation will improve the manuscript's professional appearance and readability.
- 4. Provide more detailed explanations of the bibliometric methods used, such as the criteria for selecting databases, the specific search strings employed, and the rationale behind choosing Biblioshiny software. This detail will enhance the reproducibility of the research and strengthen the methodological rigor.
- 5. The discussion section could benefit from a deeper exploration of the theoretical implications of the findings. Discuss how these insights contribute to existing theories of digital religion and propose new theoretical frameworks that could be derived from your findings.
- Clearly articulate the limitations of the current study. This honesty will aid readers in understanding the scope of the conclusions drawn.Additionally, suggest directions for future research to further explore unanswered questions or new inquiries that arose from this study.
- 7. Throughout the document, consider revising sentences that may be overly complex or contain grammatical errors. Simplifying the language
- where possible will make the paper more accessible to a broader audience, including those for whom English might not be a first language.

  8. Enhance the impact of your findings with clear, well-designed visual representations. Graphs, charts, and thematic maps that are easy to
- understand can greatly enhance the presentation of your bibliometric analysis.

  9. Strengthen the analysis section by critically engaging with the findings. Discuss the broader implications of digital Islam's trends, and compare
- these trends with those observed in other religions or digital cultural studies.

  10. Augment the literature review by discussing and contrasting your findings with previous studies more thoroughly. This will situate your paper within the existing academic discourse and highlight its contribution to the field.

### Reviewer #3:

This manuscript can be accepted if you have corrected all the suggestions given. I have provided my remarks in the attached file, aimed to assist authors to amend the manuscript accordingly. Additionally, I am available for further clarification or discussion on any of the points raised in the review process.

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# Social Sciences & Humanities Open

# Exploring the Intersection of Islam and Digital Technology: A Bibliometric Analysis --Manuscript Draft--

Manuscript Number:	SSHO-D-24-00472
Full Title:	Exploring the Intersection of Islam and Digital Technology: A Bibliometric Analysis
Article Type:	VSI: Quantitative Islam
Section/Category:	Religious Studies/Theology
Keywords:	Islam, digital religion, digital Islam, bibliometric analysis, women in digital Islam
Manuscript Region of Origin:	INDONESIA
Abstract:	This study aims to provide new insights and enrich the understanding of the dynamics and interactions between Islam and digital technology. The study identifies key developments and trends in the field, influential authors and their contributions, patterns of collaboration between Islamic-majority countries, thematic evolution of the literature, and perceptions and attitudes towards digital technology in an Islamic context. Additionally, this study examines the participation and representation of women in the field and the main theoretical frameworks used in the study of digital Islam. The research used the Biblioshiny software in R-Studio to conduct a bibliometric analysis. The research positioning digital Islam as a critical subfield of digital religion and explores that the concepts of 'digital Muslim' is relevan with concpet 'digital ummah.' The findings reveal the transformative impact of digital Islam, characterized by the integration of traditional and digital innovation, multidisciplinary theoretical frameworks, and the dynamic engagement of women. The findings also show that women have a greater representation in papers with the highest citation rates.

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This study aims to provide new insights and enrich the understanding of the dynamics and interactions between Islam and digital technology. The study identifies key developments and trends in the field, influential authors and their contributions, patterns of collaboration between Islamic-majority countries, thematic evolution of the literature, and perceptions and attitudes towards digital technology in an Islamic context. Additionally, this study examines the participation and representation of women in the field and the main theoretical frameworks used in the study of digital Islam. The research used the Biblioshiny software in R-Studio to conduct a bibliometric analysis. The research positioning digital Islam as a critical subfield of digital religion and explores that the concepts of 'digital Muslim' is relevan with concept 'digital ummah.' The findings reveal the transformative impact of digital Islam, characterized by the integration of traditional and digital innovation, multidisciplinary theoretical frameworks, and the dynamic engagement of women. The findings also show that women have a greater representation in papers with the highest citation rates.

Keywowds: Islam, digital religion, digital Islam, bibliometric analysis, women in digital Islam

# Introduction

The significance of digital Islam in Muslim societies is rapidly growing as digital technologies become more prevalent. It is imperative to understand how Islam adapts and is represented in this new medium. Fortunately, despite a lack of consensus on the definition of "digital Islam," it is clear that it represents a unique manifestation of Islam in the digital context, with new identities, practices, and emerging communities (Campbell, 2012; el-Nawawy & Khamis, 2010; Zaid et al., 2022). Some view it as the use of digital tools to practice Islam (Al-Farizi et al., 2022; Arifin et al., 2022; Mustafa et al., 2020), whereas others argue that it extends it (al-Mutairi, 2022; el-Nawawy & Khamis, 2010; Lengauer, 2018; Olson, 2017).

A strong theoretical foundation in digital Islamic studies is essential for a deeper understanding of the implications of digital tools and platforms for Islamic practices and beliefs. One author who addresses this issue is Campbell (2017), who highlights the importance of a theoretical approach to studying digital Islam. Chaudhary (2020) also discussed the importance of digital ethics in Islam, identifying contemporary themes that could serve as the foundation for a broader philosophical framework. Both contributions emphasize the blend of theoretical rigor and practical flexibility in the study of digital Islam and the importance of ongoing research and dialogue in understanding digital transformation in Islam.

Research on "digital Islam" in Muslim societies focuses on various topics related to the relationship between Islam and digital technology. These themes include the connection between religiosity and consumer attitudes (Souiden & Rani, 2015), the use of digital platforms for Islamic education among youth (Alkouatli et al., 2023), the portrayal of Islam in national and international media (Ghauri et al., 2021), media representation and Islamophobia (Saeed, 2007), the impact of Muslim communities on Islamophobia (Bowe & Makki, 2016), the emergence of hybrid Muslim identities in the digital realm (Evolvi, 2017), and women's empowerment in an Islamic context (Gökhan, 2019). These findings highlight the complex interplay between technology, culture, digital islam, and societal norms in the realm of "digital Islam."

In light of the development of research in this field, as previously mentioned. Bibliometric analysis is a valuable tool to study the adaptation and representation of Islam in the digital realm. This enables the identification of trends, conceptual relationships, and gaps in the existing literature, thus strengthening the theoretical framework for future research and highlighting unexplored areas of study. This research also provides insights into how digital technologies affect Islamic beliefs and practices, thus enabling the development of more effective strategies to support Muslim communities in their interactions with these technologies. Conducting research using bibliometric analysis in this area is not only urgent, but also important to advance our understanding of the complex relationship between digital technology, Islam, and religious identity. Moreover, this research can inform the development of inclusive and responsive policies and practices that meet the needs of global Muslim communities.

Regarding the bibliometric analysis method in research on the theme of 'digital Islam,' previous studies have not specifically used this term in their discussion. Instead, they focused on themes such as religious moderation, Islamic studies and new media, terrorism issues, Islamic communication, and Da'wah, as shown in <u>Table 1</u>.

Table 1. Bibliometric analysis research with themes similar to 'digital Islam'

Sr. No	Objective	Title	References
1	Aims to identify the publication of articles and trends or research positions on religious moderation in the last 2 years and to find out the number of citations or publications during 2020 to 2022.	Bibliometric analysis: religious moderation	(Prahesti, 2022)
2	Examines the evolution of Islam and new media topics during the past two decades. The most prolific years for article production were 2012 and 2020	The Bibliometric Analysis Of Islamic Studies Research And New Media Based On Biblioshiny	(Yunus Mustofa & Rizal Mustofa, 2023)
3	The paper aims to evaluate the publication trends on terrorism issues in Indonesia from 1980 to 2022 through bibliometric analysis.	Bibliometric analysis of publications trends on the terrorism issues in Indonesia	(Yumitro et al., 2023)
4	The study aims to conduct a bibliometric analysis of academic articles related to Islamic Studies, analyzing their evolution over time and identifying key research topics.	Systematic Review Studi Islam: A Bibliometrics Analysis (1941-2022)	(Latuconsina, 2023)
5	Islamic communication and da'wah that has been published by Dimensions-indexed journals between 2012 and 2022, using both qualitative and descriptive statistics methods to analyze the 275 papers, VOSviewer was used to create bibliometric maps	Analisis Scientometrik Tentang Komunikasi dan Dakwah Islam dalam Literatur Ilmiah	(Izza, 2023)

Previous studies on the topic of "digital Islam" have not specifically used this term, instead focusing on themes such as religious moderation and new media. No study has explicitly examined the field of "digital Islam" using bibliometric analysis. This study aims to fill this gap by applying bibliometric analysis to identify and analyze the trends and patterns in the study of "digital Islam." This study aims to provide new insights and enrich the understanding of the dynamics and interactions between Islam and digital technology in a broader context.

In relation to these objectives, the research questions in this study are as follows:

RQ1: How does a performance analysis of the 'digital Islamic literature reveal key developments and trends in this field?

RQ2: Who are the influential authors in the 'digital Islam' literature and what are their main contributions? Why have they become influential?

RQ3: How do patterns of collaboration between Islamic-majority countries affect the output and impact of 'digital Islamic research?

RQ4: How does bibliometric analysis reveal the thematic evolution of the 'digital Islam' literature and what are the major themes that have evolved over time?

RQ5: How does sentiment anysis in ' the literature reveal perceptions and attitudes towards digital technology in an Islamic context?

RQ6: What is the involvement and representation of women as the main authors in the 'digital Islam' literature, and what are the main articles that address gender issues?

RQ7: What are the main theoretical frameworks used in the study of digital Islam, and how do they help understand the interaction between Islam and digital technology?

In this article, I explore several important aspects of Digital Islam literature through bibliometric analysis using the Biblioshiny software in R-Studio to map key developments, trends, and dynamics in the field (Aria & Cuccurullo, 2017). First, I conducted a performance analysis of the 'Digital Islam' literature to identify key developments and trends in the field, including publications per year, citations, and the most prolific journals, highlighting how this literature is growing and which areas are receiving the most attention. This bibliometric method effectively maps the state-of-the-art and identifies research gaps and trends, aiding the development of scientific projects ( De Oliveira et al., 2019).

I continue by identifying influential authors in digital Islamic literature using co-citation analysis and author collaboration networks to identify those individuals who have made significant contributions and why they have become influential. This includes an evaluation of their h-index and total number of citations to demonstrate their influence and contribution to the field.

In addition, my research explores the patterns of collaboration between Muslim-majority countries in digital Islam research through network collaboration analysis to understand how international collaboration affects research output and impact. We assessed the contribution and impact based on publications and citations per country and used cluster analysis to identify key collaborative groups.

The research also included an analysis of thematic evolution in the 'digital Islam' literature, using keyword co-occurrence analysis and thematic evolution maps to map key themes and their evolution over time. This provides deep insight into the focus of research in the field and how interest in certain topics has changed.

Sentiment analysis of the 'digital Islam' literature provides an understanding of perceptions and attitudes towards digital technology in an Islamic context, using sentiment scores and analyzing sentiment trends over time to reveal how communities are responding to the integration of technology into religious practice.

I also examined the participation and representation of women as lead authors in the literature on digital Islam, as well as the literature that addresses gender issues, using author gender analysis and network analysis to explore the collaboration and influence of female authors.

Finally, I examine the main theoretical frameworks in 'digital Islam' studies, focusing on the most cited documents and references worldwide to determine the most influential frameworks and how they help understand the interaction between Islam and digital technologies. Through this approach, my article provides a valuable contribution to the understanding of the 'Digital Islam' literature, combining theoretical rigor with empirical analysis to understand the complex dynamics at the intersection of technology, religion, and society.

This study introduces two unique aspects of bibliometric analyses: sentiment analysis of 'digital Islam''s literature, and women's participation and representation in this field. By conducting sentiment analysis, this study uncovers the diverse perceptions and attitudes of Muslims towards digital technologies, providing significant insights into the integration of these technologies into religious practices and daily life. Understanding the interplay between digital Islam and technology is therefore crucial. Moreover, the research on women's participation and representation sheds light on the prominent role women play as primary authors and research subjects in 'digital Islam' literature. This challenges existing assumptions and underscores the importance of gender in this area of research. By emphasizing these aspects, this study contributes to the academic discourse on 'digital Islam' and promotes inclusivity and gender awareness. It also establishes a foundation for future research investigating the relationship between technology, digital Islam, and gender.

# **Research Design**

Bibliometrix is a flexible, open-source tool for comprehensive science mapping analysis that supports a recommended workflow and enables rapid upgrades and integration with other statistical R packages (Aria & Cuccurullo, 2017). To conduct a bibliometric analysis focusing on the interplay between Islamic or Muslim societies and the digital realm, a detailed search strategy was implemented using the Scopus database (Donthu et al., 2021). The search string used was as follows:

TITLE-ABS-KEY (islam OR "Muslim societies" AND "digital world" OR "digital age" OR technology OR "social media" OR internet OR "online community" OR "cyber space" OR "digital culture" OR "virtual community" OR "online engagement" OR "digital engagement" OR "social networking" OR "online education" OR "e-learning" OR "virtual learning" OR "digital platforms" OR "online platforms")

This string aimed to capture a wide range of documents discussing Islam or Muslim societies in relation to various facets of the digital age, including technology use, online communities, digital culture, and online learning environments. The initial search returned 1,777 documents, indicating a significant body of work at the intersection of these topics.

To refine the dataset and ensure focus on the most relevant and high-quality publications, several filters were applied. Documents were excluded based on the document type to remove conference reviews (cr), letters (le), editorials (er), short surveys (sh), book chapters (bk), and notes (no), focusing on the analysis of peer-reviewed articles and substantial contributions to the field. The search was also limited to documents published in English to ensure that the analysis was manageable and that the results were accessible to a broad academic audience.

Further refinement was made by excluding documents from unrelated subject areas, such as health sciences, chemistry, and engineering, which do not directly contribute to the understanding of digital Islam. This exclusion was essential to maintain the focus and relevance of the research. After

applying these exclusion criteria, the dataset was narrowed to 1,060 documents, offering a concentrated corpus for bibliometric analysis.

The retained dataset of 1,060 documents forms the basis for bibliometric analysis, allowing for a detailed examination of publication trends, authorship patterns, thematic concentrations, and citation networks within the literature on Islam and digital engagement. This methodological approach not only highlights the breadth and depth of research in this emerging field but also provides a foundation for identifying gaps in the literature, understanding the evolution of key themes over time, and suggesting avenues for future research. Through this bibliometric analysis, this study provides a structured overview of how digital technologies intersect with Islamic practices and their broader implications for Muslim societies globally, as shown in Table 2.

Table 2. Digital Islamic Literature From Scopus (1969-2024)

Description	Results
Timespan	1969:2024
Sources (Journals, Books, etc)	656
Documents	1060
Annual Growth Rate %	4.77
Document Average Age	7.68
Average citations per doc	8.541
References	42523
DOCUMENT CONTENTS	
Keywords Plus (ID)	1442
Author's Keywords (DE)	2941
AUTHORS	
Authors	1790
Authors of single-authored docs	546
AUTHORS COLLABORATION	
Single-authored docs	622
Co-Authors per Doc	1.86
International co-authorships %	10
DOCUMENT TYPES	
article	731
book chapter	173
conference paper	89
review	67

Following the bibliometric analysis, the research design incorporated the use of N-Vivo, a qualitative data analysis software, to conduct sentiment analysis on the same set of 1,060 documents. This phase particularly focuses on understanding the nuances of discourse in the literature. By applying sentiment analysis, this study aims to uncover the prevailing attitudes and perceptions regarding the integration of digital technologies in Islamic practices and Muslim societies. Sentiment analysis in N-Vivo involves coding textual data from documents, identifying positive, negative, and neutral sentiments, and analyzing the context in which digital Islam is discussed.

# **Result and Discussion**

This study presents a comprehensive bibliometric framework for analyzing Digital Islam literature. Using Biblioshiny in R-Studio (Moral-Muñoz et al., 2020), we mapped growth dynamics, identified

influential authors, analyzed international collaborations, outlined thematic evolution, explored sentiments towards digital technologies in the Islamic context, assessed the role of women, and identified theoretical frameworks for digital Islamic studies.

# Growth and Trends in Digital Islam Literature

The analysis starts by presenting the growth trend of Digital Islam literature since its inception. Based on publication and citation data, we identified time periods with significant surges in research, highlighting the topics and issues that dominate academic discourse. A performance analysis of the 'Digital Islam' literature was conducted to identify key developments and trends in the field. This included analyzing publications per year, citations, and the most prolific journals. The analysis highlighted how this literature is evolving and which areas are receiving the most attention.

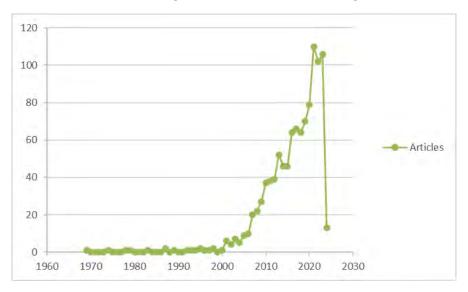


Figure 1. Annual Scientific Production for Digital Islamic Literature

Figure 1 shows a significant and consistent increase in the number of publications of Islamic digital literature from 1969 to 2024. The number of publications per year grew slowly at first but then increased rapidly and significantly in the early 2000s. This surge in publications can be attributed to the growing interest in and recognition of the significance of research in digital Islam, particularly in the past two decades. The period between 2007 and 2024 is marked by significant annual growth in research activity. This era is considered pivotal in the development of Islamic digital literature, signifying a heightened focus on exploring and advancing this field. The data reveal the increasing importance placed on digital Islam and progress made in this area.

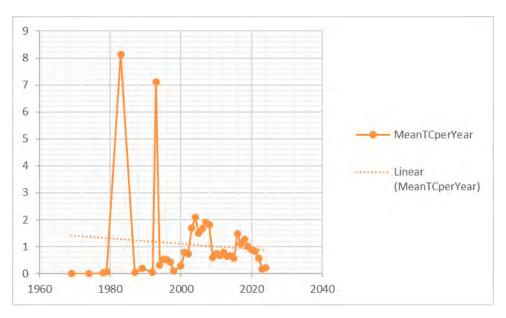


Figure 2. Average citations per year for digital Islam literature

Figure 2 shows the analysis of average citations per year for digital Islamic literature, revealing fluctuations in research recognition and impact over time. Initially, there was a lack of impact from the late 1960s to the early 1980s, with almost no citations per year. However, in 1983, there was a significant increase in the average citations, indicating the importance of research in the field. Since the 2000s, there has been a consistent upward trend in the average citations, albeit with some fluctuations. The years 2003 and 2004 were notable for having a higher average number of citations, indicating increased recognition of research in Islamic digital literature. The average number of citations stabilized at a lower but still significant level, with another peak in 2016. However, from 2019 to 2024, there was a decline in the average number of citations per year, which may be due to a time lag in citation collection or an increase in less-cited publications. This analysis offers insights into the evolving dynamics of citations over time and academic recognition of Islamic digital research on a global scale.



Figure 3. Most productive journals in Digital Islam literature

Figure 3 highlights that the journal 'Religions' is the most prolific, with 30 articles, followed by the 'Indonesian Journal of Islam and Muslim Societies' and 'Contemporary Islam.' The 'Journal of Arab and Muslim Media Research' and the 'Journal of Religion, Media, and Digital Culture' were also significant contributors. Furthermore, the '2013 5th International Conference on Information and Communication Technology for the Muslim World (ICT4M 2013)' and its 2014 edition contributed to the field. The analysis of publication trends from 1969 to 2024 reveals exponential growth in research output, particularly between 2007 and 2024, marking a new era of increased academic interest in digital Islamic studies. This growth was accompanied by fluctuations in citation recognition, with a noticeable increase since the early 2000s. This paper underscores the diverse platforms supporting digital Islamic research and advocates for enhanced strategies to boost the visibility and impact of these studies.

# Influential Sources and Authors in Digital Islam Literature

This includes an evaluation of their h-index and total number of citations to demonstrate their influence and contribution to the field. This study aimed to understand the basis of their influence, including the quality and impact of their research.

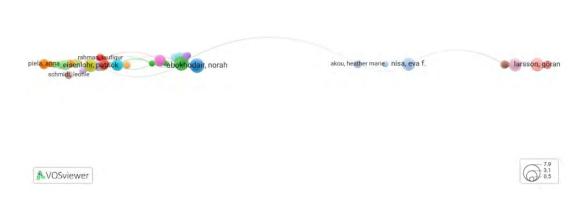


Figure 4. Top Authors and Sources in Digital Islam literature by VOSViewer

Figure 4 presents an analysis of influential authors in the field of Islamic digital literature and their contributions based on citation metrics derived from VOS Viewer. Norah Abokhodair emerges as a leading figure with 233 citations across six documents, whereas Francis Robinson, with a single document, amasses 228 citations, highlighting his significant impact. Sarah Vieweg, Eva F. Nisa, and Bryan S. Turner are also noted for their substantial citation counts, indicating their important contributions to the field. The analysis further identified the high normalized citation scores of Anton Törnberg and Jamie Cleland, underscoring their influential research. These authors primarily focused on the intersection of technology, social media, and socio-cultural dynamics within Muslim societies, offering deep insights into how digital advancements are shaping social, cultural, and religious practices. This study underscores the critical role of digital Islamic research in understanding the evolving relationship between technology and Islamic communities.

Despite their diversity, these studies collectively articulate how digital technologies and social media have become integrated into religious practices, social identity, and discourse dynamics within the context of Islam. Abokhodair and Vieweg (2016, 2020) revealed the use of social media in the Arabian Gulf as a means of expressing collective identity and autonomy, particularly through the maintenance of traditional values in Qatar. This is extended by research on the sharing and

discussion of the Quran on Twitter, which highlights the impact of social media on contemporary religious practices.

Nisa's research emphasizes how Muslim women utilize the Internet and social media, especially in Indonesia, for religious and social purposes, underlining digital platforms as new spaces for religious engagement and expression (Nisa 2013, 2018a, 2021). Francis Robinson (1993), with a focus on the impact of print technology, demonstrates a significant shift in the dissemination and interpretation of Islam, changing the educational and religious landscape in the Muslim world.

The analysis by Törnberg and Nissen (2023) of far-right extra-parliamentary groups in Europe using hyperlink networks on social media to mobilize anti-Islamic sentiment shows how digital technologies can facilitate sociopolitical polarization and extremism. This is complemented by studies on the representation of Muslims in social media discourse, identifying narratives and prejudices that shape public perception.

Turner (2007) and Cleland (2014) address issues of religious authority and Islamophobia in the digital age, while Eisenlohr explores the impact of sound reproduction technologies on Islamic devotional practices, highlighting the complexity of the interaction between technology and authenticity in religious practice.

Together, these studies depict a complex interplay between digital technologies, social media, and Islam, revealing how technology is shaped and transformed by religious and social contexts. Although topics and approaches vary collectively, they offer comprehensive insights into the challenges and opportunities presented by the digital age of the Muslim community and its religious practices.

# *International Collaboration in Digital Islam Literature*

A network analysis of collaborations between countries demonstrates the global reach of digital Islamic research. This study evaluates the intensity and characteristics of collaborations, and identifies patterns that indicate scholarly exchange and joint contributions to global knowledge.

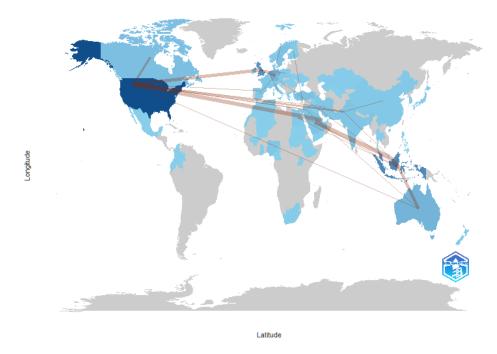


Figure 5. Digital Islam literature collaboration world map

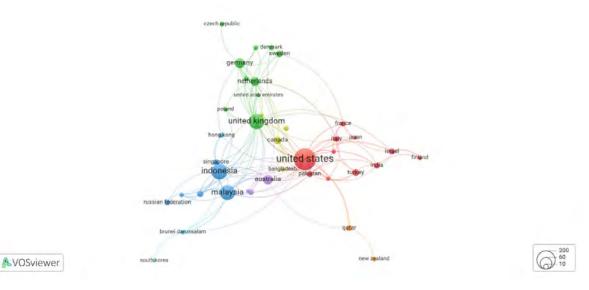


Figure 6. Digital Islam literature co-authorship by Country

In this analysis, we also present the ten countries with the highest number of collaborations in digital Islamic literature research, as well as the ten pairs of countries with the most frequent collaborations.

Table 3. 10 Most Collaborated Countries

Country	Total Collaborations
United States	44
United Kingdom	35
Malaysia	28
Indonesia	26
Australia	18
Netherlands	18
Saudi Arabia	17
Germany	16
Pakistan	14
Italy	12

Table 4. 10 Countries' Most Collaborated Couples

Country 1	Country 2	Collaborations	
Indonesia	Malaysia	7	
Malaysia	Saudi Arabia	7	
United Kingdom	United States	7	
Germany	Netherlands	6	
Qatar	United States	5	
Australia	Indonesia	4	
Netherlands	United Kingdom	4	
Australia	Malaysia	3	
Australia	United States	3	
Canada	United States	3	

The analysis of international collaboration networks in the field of digital Islamic literature, as depicted in <u>Figure 5</u> and <u>6</u> and <u>Tables 3</u> and <u>4</u>, reveals significant patterns and relationships among the countries. The analysis of international collaboration in the digital Islamic literature identifies key patterns and relationships among countries, highlighting the central roles of the United States and

the United Kingdom as academic hubs. Malaysia and Indonesia also emerged as significant contributors, with these countries demonstrating a high level of participation and strong bilateral collaboration, especially between Indonesia and Malaysia. The study showcases the global nature of research collaboration, with notable connections such as Malaysia-Saudi Arabia and UK-US each recording seven collaborations, and a notable trans-European link between Germany and the Netherlands. This underscores the importance of international cooperation to enhance the understanding of Islam in the digital era, reflecting a complex, interconnected global network of knowledge exchange.

Table 4 shows the analyses of inter-country collaborations in Digital Islam research, focusing on how countries with varied interests and capacities collaborate to understand and apply digital technologies in Islamic contexts. It highlights significant partnerships, such as between Indonesia and Malaysia and Malaysia and Saudi Arabia, which reflect shared cultural and religious backgrounds and the integration of technology with Islamic values. Additionally, collaborations between Western and Muslim-majority countries, such as the US, UK, Qatar, and Germany, underscore the importance of cross-cultural research in this field. The findings emphasize that international cooperation is crucial for a comprehensive understanding of Digital Islam, covering the technological, social, and religious dimensions. Such collaborations facilitate enriched dialogue and innovation within Muslim communities globally, showcasing the global relevance and interdisciplinary nature of digital Islamic research.

# Thematic Evolution in Digital Islam Literature

Using keyword co-occurrence and thematic evolution mapping techniques, we explored how the research focus has shifted and evolved. These findings offer insights into research dynamics, highlighting new areas and emerging topics in academic dialogue.

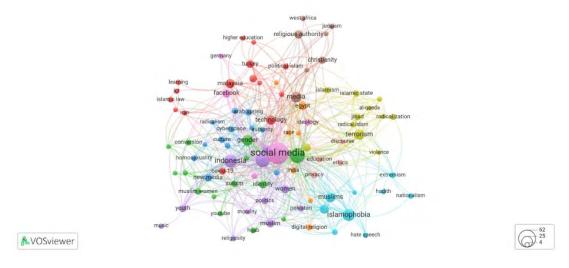


Figure 7. Digital Islam Vos Viewer Co-Occurence Analysis

<u>Figure 7</u> presents a comprehensive analysis of ten thematic clusters identified through specific keywords, each exploring various facets of contemporary societal issues through the lens of digital media, religious identity, and socio-political dynamics.

The first cluster delves into the role of digital platforms, such as Facebook and YouTube, in shaping cultural and religious identities, emphasizing the negotiation of gender politics and social activism within diverse cultural landscapes. This finding highlights the impact of digital media on contemporary discourse and identity formation.

The second cluster examines the interaction between Islamic traditions and modern challenges, such as globalization and the COVID-19 pandemic, focusing on the implications for education, technology, and societal change. This underscores Islamic societies' adaptation to technological advancements and global dynamics.

In the third cluster, the focus shifted to the Middle East, exploring sociopolitical and cultural transformations after the Arab Spring. The role of new media in influencing political activism, religious identity, and cultural values is analyzed, offering insights into the complexities of governance and freedom of expression in the region.

The fourth cluster addresses terrorism, radicalization, and extremism within the context of Islamism, highlighting the influence of jihadist movements and propaganda on global security. It provides a critical view of the sociopolitical challenges posed by radical ideologies.

The fifth cluster explores the intersections of digital culture, activism, and identity politics, particularly the role of social media in advocating for social justice issues, such as Islamophobia and racism. This illustrates how digital platforms facilitate activism and discussions of discrimination.

The sixth cluster looks at Pakistan, focusing on the interplay between digital media, education, ethics, and sociopolitical dynamics concerning Islam, nationalism, and gender. The significance of religious discourse and educational initiatives in shaping societal norms has been emphasized.

The seventh cluster analyzes the religious and cultural dynamics of Christianity, Hinduism, and Judaism in West Africa, exploring the impact of the diaspora, media, and religious authority on community identities and practices.

The eighth cluster investigated the influence of religion, social media, and youth culture in Indonesia, highlighting the role of Instagram and music in shaping moral values and religious expressions among youth.

The ninth cluster considers geopolitical, cultural, and social dynamics in regions such as Egypt, India, and Nigeria, addressing broader themes such as orientalism, race, and secularism. It offers a critical examination of cultural representation and power dynamics.

Finally, the tenth cluster focuses on the intersection of bioethics and Islamic science, examining ethical considerations in scientific advancements guided by Islamic principles. This reflects an interdisciplinary field that merges scientific inquiry with ethical and religious reflections.

Overall, this study elucidates the intricate relationships between digital media, religious identity, and socio-political issues across different cultural and geographical contexts, providing a nuanced understanding of contemporary societal challenges and transformations.

Having identified the various themes in the ten clusters of Vos-Viewer. I then identified how these clusters were thematically interconnected.

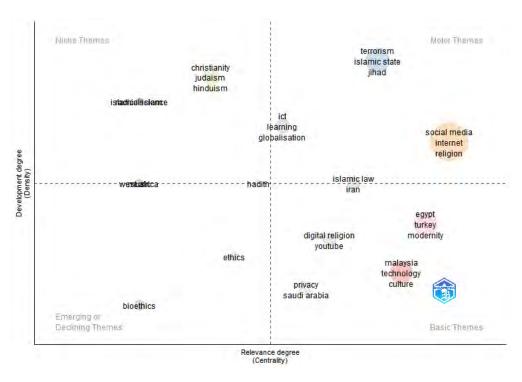


Figure 8. Digital Islam thematic Map analysis Biblioshiny

Figure 8 presents a thematic analysis focused on "Digital Islam," which encompasses the practice, interpretation, and communication of Islam within digital environments. The analysis utilized a thematic map to categorize research themes based on their relevance and level of development, employing axes to represent theme importance and density. Key themes were organized into quadrants, illustrating their relationships and significance. Central themes, identified as Motor Themes, include 'terrorism,' 'Islamic state,' and 'jihad,' highlighting their prominence in discussions about the digital impact on these subjects. Basic Themes, such as 'malaysia,' 'technology,' and 'culture,' though fundamental, are recognized as less explored areas. Emerging or Declining Themes like 'bioethics' and 'ethics' suggest new or waning interests, while Niche Themes mention religions like Christianity, Judaism, and Hinduism, indicating specialized but less connected topics. This analysis helps pinpoint research priorities and potential gaps within the field of digital Islamic studies, suggesting areas for further investigation.

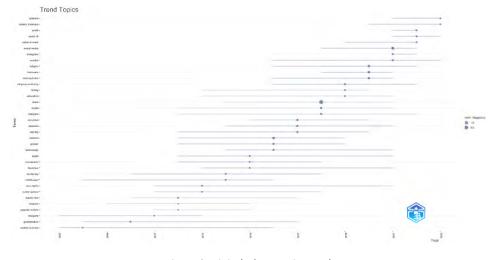


Figure 9. Digital Islam Topic Trends

Figure 9 shows the evolution of topics related to Digital Islam from 2008 to 2021, illustrating a shift towards integrating digital technology within Islamic discourse and practices. Initially, discussions focused on Islamic science and explored the relationship between religion and technology. By 2013, the emphasis had shifted towards the use of new media and communication technologies, such as social media and mobile applications, for education and religious engagement. The year 2016 marked notable interest in the impact of technology on Islamic practices, including the use of digital applications for religious observance and virtual reality for immersive religious experiences. The study highlights a significant trend towards digital platforms that enhance religious practice, accessibility, and community engagement within the Muslim community. By 2021, social media, particularly Instagram, has emerged as a vital space for expressing and debating Islamic identity, showcasing the growing importance of digital spaces for religious dialogue and community development.

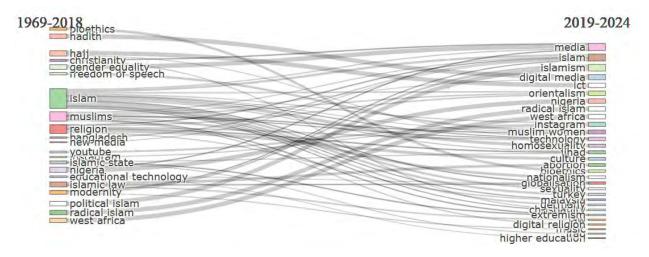


Figure 10. Thematic evolution in Digital Islam literature

<u>Figure 10</u> illustrates the thematic evolution of Islamic studies from 2019 to 2024, highlighting the emergence of new themes such as digital media, ICT, Instagram, and technology. It notes an increased focus on gender and representation, particularly regarding Muslim women, alongside traditional themes such as hadith and Islamic law. The period also saw a rise in discussions on sociopolitical issues, such as Islamophobia, nationalism, and homosexuality, indicating a broader inclusion of social and political analysis within Islamic studies. The study underscores a shift towards integrating Islam with technology and contemporary debates, expanding the scope of discussion to include global issues such as globalization and radical Islam. This reflects a dynamic and expanding field of study that adapts to contemporary societal changes and technological advancements.

## Sentiments Analysis towards Digital Islam

We analyzed the sentiments of the authors of the articles using N-Vivo for a sentiment analysis. The discussions revealed both positive and negative nuances,

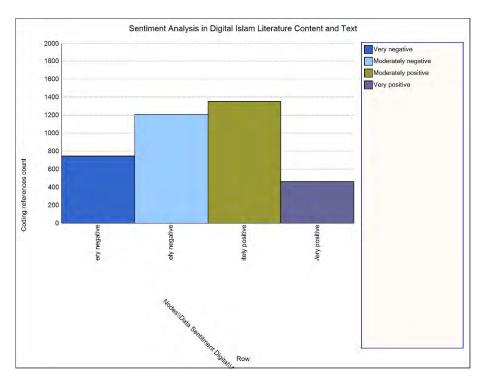


Figure 11. Sentiment Analysis in Digital Islam based on Text

When conducting sentiment analysis on articles using N-Vivo, it is important to note that the results obtained do not reflect the personal sentiments or viewpoints of the authors. The analysis focuses on extracting information and nuances regarding discussions on digital technology, regardless of whether they are positive or negative. The objective of this analysis is to identify themes, patterns, and nuances that emerge from the content, without making any assumptions about the author's attitude towards the subject. Therefore, when stating that 'the discussion reveals both positive and negative nuances, showing complex perceptions of digital technology,' it refers to the range of opinions and views presented in the articles rather than the authors' sentiments. This interpretation clarifies that sentiment analysis is a tool for extracting information and trends from text and that the results reflect the content being analyzed rather than the subjective perceptions of the authors.

Figure 11 presents a sentiment analysis focusing on the interaction between Islam and digital technology, analyzing 748 negative and 1359 positive sentiments from various entries. It reveals a complex and multifaceted discourse, with a dominant, moderately negative sentiment reflecting concerns and criticisms, alongside a significant presence of positive viewpoints that acknowledge the beneficial impact of digital technology on Islam. The analysis underscores the diverse perceptions within the discourse, highlighting both the challenges and opportunities of digital technologies present in contemporary Islamic practice and understanding. This suggests a nuanced landscape of views, balancing skepticism and optimism in the context of the role of digital technology in Islam.

# The Role of Women in Digital Islam Literature

This study investigates gender dynamics in the digital Islamic literature by focusing on the participation of female authors. It employs a two-stage methodology to analyze gender representation, beginning with the identification of 100 highly cited authors from a corpus of 1060 articles, leading to the recognition of 59 female authors based on citation frequency. The second stage zeroes in on the most prolific among these female authors, narrowing down to 18 individuals recognized for their significant contributions. This study meticulously examines the gender of authors and their distribution across publications, paying particular attention to the positions held by

female authors in the authorship order, which serves as an indicator of their leadership and influence within the field. This approach sheds light on collaboration patterns and leadership roles, aiming to offer a comprehensive understanding of women's roles and contributions in the digital Islamic literature. Furthermore, it explores the broader discourse on gender issues within digital Islamic research, highlighting the acknowledgment and valuation of women's contributions in this scholarly domain.

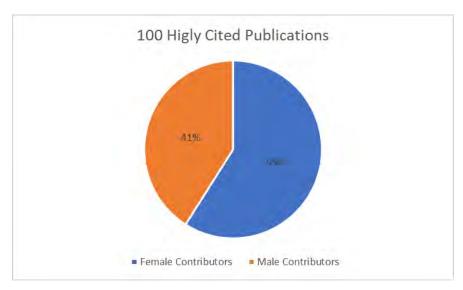


Figure 12. Women's representation in the top 100 most cited papers

Table 5. Top 59 Female Authors by Number of Citations

Authors	Female Authors	Title Yo	ear So	ource title	Cited by
Wersal L. (1995)	Wersal, Lisa	ISLAM AND ENVIRONMENTAL ETHICS: TRADITION RESPONDS TO CONTEMPORARY CHALLENGES	1995	Zygon®	31
Stowasser B. (2001)	Stowasser, Barbara	Old shaykhs, young women, and the internet: The rewriting of women's political rights in Islam	2001	Muslim World	21
Inhorn M.C. (2003)	Inhorn, Marcia C.	Global infertility and the globalization of new reproductive technologies: Illustrations from Egypt	2003	Social Science and Medicine	206
Mamadouh V. (2003)	Mamadouh, Virginie	11 September and popular geopolitics: A study of websites run for and by Dutch Morrocans	2003	Geopolitics	27
Inhorn M.C. (2004)	Inhorn, Marcia C.	Middle Eastern masculinities in the age of new reproductive technologies: Male infertility and stigma in Egypt and Lebanon	2004	Medical Anthropology Quarterly	136
Kosnick K. (2004)	Kosnick, Kira	'Speaking in one's own voice': Representational strategies of Alevi Turkish migrants on open- access television in Berlin	2004	Journal of Ethnic and Migration Studies	37
Fullwiley D. (2004)	Fullwiley, Duana	Discriminate biopower and everyday biopolitics: Views on sickle cell testing in Dakar	2004	Medical Anthropology: Cross Cultural Studies i Health and Illness	
Cohrs J.C.; Moschner B.; Macs J.; Kielmann S. (Cohrs et al., 2005)	Moschner, Barbara	The motivational bases of right- wing authoritarianism and social dominance orientation: Relations to values and attitudes in the aftermath of September 11, 2001	2005	Personality and Social Psychology Bulletin	187

Abdul Karim N.S.; Hazmi N.R. (2005)	Abdul Karim, Nor Shahriza; Hazmi, Norzelatun Rodhiah	Assessing Islamic information quality on the internet: A case of information about Hadith	2005	Malaysian Journal of Library and Information Science	27
Inhorn M.C. (2006)	Inhorn, Marcia C.	"He won't be my son": Middle Eastern Muslim men's discourses of adoption and gamete donation Promises of (im)mediate	2006	Medical Anthropology Quarterly	112
Schulz D.E. (2006)	Schulz, Dorothea E.	salvation: Islam, broadcast media, and the remaking of religious experience in Mali	2006	American Ethnologist	109
Newcomb R. (2006)	Newcomb, Rachel	Gendering the city, gendering the nation: Contesting urban space in Fes, Morocco	2006	City and Society	27
Toft M.D. (2007)	Toft, Monica Duffy Hashim, Noor	Getting religion? The puzzling case of Islam and civil war	2007	International Security	259
Hashim N.H.; Murphy J.; Hashim N.M. (Hashim et al., 2007)	Hazarina; Hashim, Nazlida Muhamad	Islam and online imagery on malaysian tourist destination websites	2007	Journal of Computer- Mediated Communication	73
Akou H.M. (2007)	Akou, Heather Marie	Building a new "world fashion": Islamic dress in the twenty-first century	2007	Fashion Theory - Journal of Dress Body and Culture	38
Raiya H.A.; Pargament K.; Mahoney A.; Stein C. (Abu Raiya et al., 2008)	Mahoney, Annette; Stein, Catherine	A psychological measure of islamic religiousness: Development and evidence for reliability and validity	2008	International Journal for the Psychology of Religion	212
Ho S.S.; Lee W.; Hameed S.S. (Ho et al., 2008)	Ho, Shirley S.; Lee, Waipeng; Hameed, Shahiraa Sahul	Muslim surfers on the internet: Using the theory of planned behaviour to examine the factors influencing engagement in online religious activities	2008	New Media and Society	51
Wyche S.P.; Caine K.E.; Davison B.; Arteaga M.; Grinter R.E. (Wyche et al., 2008)	Wyche, Susan P.; Caine, Kelly E.; Grinter, Rebecca E.	Sun dial: Exploring technospiritual design through a mobile islamic call to prayer application	2008	Conference on Human Factors in Computing Systems - Proceedings	34
van Zoonen L.; Vis F.; Mihelj S.(Van Zoonen et al., 2010)	van Zoonen, Liesbet; Vis, Farida; Mihelj, Sabina	Performing citizenship on YouTube: Activism, satire and online debate around the anti-Islam video Fitna	2010	Critical Discourse Studies	104
Akou H.M. (Akou, 2010)	Akou, Heather Marie	Interpreting Islam through the Internet: Making sense of hijab	2010	Contemporary Islam	28
Piela A. (Piela, 2010)	Piela, Anna	Muslim women's online discussions of gender relations in Islam	2010	Journal of Muslim Minority Affairs	25
Bryant L.D.; Ahmed S.; Ahmed M.; Jafri H.; Raashid Y. (Bryant et al., 2011)	Ahmed, Shenaz	'All is done by Allah'. Understandings of Down syndrome and prenatal testing in Pakistan Mutuality and immediacy	2011	Social Science and Medicine	36
Clarke M.; Inhorn M.C. (Clarke & Inhorn, 2011)	Inhorn, Marcia C.	Mutuality and immediacy between marja and muqallid: Evidence from male in vitro fertilization patients in shii lebanon	2011	International Journal of Middle East Studies	25
Akhter W.; Abassi A.S.; Umar S. (Akhter et al., 2011)	Umar, Sadia	Ethical issues in advertising in pakistan: An islamic perspective	2011	World Applied Sciences Journal	23

Mihelj S.; van Zoonen L.; Vis F. (Mihelj et al., 2011)	Mihelj, Sabina; van Zoonen, Liesbet; Vis, Farida	Cosmopolitan communication online: YouTube responses to the anti-Islam film Fitna	2011	British Journal of Sociology	21
Fekete L. (Fekete, 2012)	Fekete, Liz	The muslim conspiracy theory and the oslo massacre	2012	Race and Class	62
Salamandra C. (Salamandra, 2012)	Salamandra, Christa	The Muhannad effect: Media panic, melodrama, and the Arab female gaze	2012	Anthropological Quarterly	32
Afrianty D. (Afrianty, 2012)	Afrianty, Dina	Islamic education and youth extremism in Indonesia	2012	Journal of Policing, Intelligence and Counter Terrorism	29
Halverson J.R.; Way A.K. (Halverson & Way, 2012)	Way, Amy K.	The curious case of Colleen LaRose: Social margins, new media, and online radicalization	2012	Media, War and Conflict	23
Hamayotsu K. (Hamayotsu, 2013)	Hamayotsu, Kikue	The Limits of Civil Society in Democratic Indonesia: Media Freedom and Religious Intolerance	2013	Journal of Contemporary Asia	31
Nisa E.F. (Nisa, 2013)	Nisa, Eva F.	The internet subculture of Indonesian face-veiled women	2013	International Journal of Cultural Studies 2013 5th International	30
Lubis M.; Kartiwi M. (Lubis & Kartiwi, 2013)	Kartiwi, Mira	Privacy and trust in the Islamic perspective: Implication of the digital age	2013	Conference on Information and Communication Technology for the Muslim World, ICT4M 2013	23
Sreberny A. (Sreberny, 2015)	Sreberny, Annabelle	Women's Digital Activism in a Changing Middle East Uncovering modesty: Dejabis and	2015	International Journal of Middle East Studies	24
Lewis R. (Lewis, 2015)	Lewis, Reina	dewigies expanding the parameters of the modest fashion blogosphere	2015	Fashion Theory - Journal of Dress Body and Culture	24
Abokhodair N.; Vieweg S. (Abokhodair & Vieweg, 2016)	Abokhodair, Norah; Vieweg, Sarah	Privacy & social media in the context of the Arab Gulf	2016	DIS 2016 - Proceedings of the 2016 ACM Conference on Designing Interactive Systems: Fuse	98
Johnson N.F.; Zheng M.; Vorobyeva Y.; Gabriel A.; Qi H.; Velasquez N.; Manrique P.; Johnson D.; Restrepo E.; Song C.; Wuch J. 2016)	Vorobyeva, Y.	New online ecology of adversarial aggregates: ISIS and beyond	2016	Science	84
et al., 2016) Afriana J.; Permanasari A.; Fitriani A. (Afriana et al., 2016)	Afriana, J.; Permanasari, A.; Fitriani, A.	Project based learning integrated to stem to enhance elementary school's students' scientific literacy	2016	Jurnal Pendidikan IPA Indonesia	70
Magdy W.; Darwish K.; Abokhodair N.; Rahimi A.; Baldwin T. (Magdy et al., 2016)	Abokhodair, Norah	#ISISisNotIslam or #DeportAllMuslims? Predicting unspoken views	2016	WebSci 2016 - Proceedings of the 2016 ACM Web Science Conference	49
Aguilera-Carnerero C.; Azeez A.H. (Aguilera-Carnerero & Azeez, 2016)	Aguilera- Carnerero, Carmen	Islamonausea, not islamophobia: The many faces of cyber hate speech	2016	Journal of Arab and Muslim Media Research	34

Abokhodair N.; Abbar S.; Vieweg S.; Mejova Y. (Abokhodair et al., 2016)	Abokhodair, Norah; Abbar, Sofiane; Vieweg, Sarah; Mejova, Yelena	Privacy and twitter in Qatar: Traditional values in the digital world	2016	WebSci 2016 - Proceedings of the 2016 ACM Web Science Conference	26
Benigni M.C.; Joseph K.; Carley K.M. (Benigni et al., 2017)	Carley, Kathleen M.	Online extremism and the communities that sustain it: Detecting the ISIS supporting community on Twitter	2017	PLoS ONE	82
Horsti K. (Horsti, 2017)	Horsti, Karina	Digital Islamophobia: The Swedish woman as a figure of pure and dangerous whiteness	2017	New Media and Society	51
Walter B.F. (Walter, 2017)	Walter, Barbara F.	The New New Civil Wars	2017	Annual Review of Political Science	50
Abokhodair N.; Hodges A.; Vieweg S. (Abokhodair et al., 2017)	Abokhodair, Norah; Vieweg, Sarah	Photo sharing in the Arab gulf: Expressing the collective and autonomous selves	2017	Proceedings of the ACM Conference on Computer Supported Cooperative Work, CSCW	33
da Silva R.; Crilley R. (Da Silva & Crilley, 2017)	da Silva, Raquel	"Talk about terror in our back gardens": an analysis of online comments about British foreign fighters in Syria	2017	Critical Studies on Terrorism	25
Evolvi G. (Evolvi, 2017)	Evolvi, Giulia	Hybrid Muslim identities in digital space: The Italian blog Yalla Creative and Lucrative Dawa: The	2017	Social Compass	22
Nisa E.F. (Nisa, 2018a)	Nisa, Eva F.	Visual Culture of Instagram amongst Female Muslim Youth in Indonesia	2018	Asiascape: Digital Asia	61
Evolvi G. (Nisa, 2018a)	Evolvi, Giulia	Hate in a tweet: Exploring internet-based islamophobic discourses	2018	Religions	42
Nisa E.F. (Nisa, 2018b)	Nisa, Eva F.	Social media and the birth of an Islamic social movement: ODOJ (One Day One Juz) in contemporary Indonesia	2018	Indonesia and the Malay World	35
Baulch E.; Pramiyanti A. (Pramiyanti & Baulch, 2018)	Baulch, Emma; Pramiyanti, Alila	Hijabers on instagram: Using visual social media to construct the ideal muslim woman	2018	Social Media and Society	33
Husein F.; Slama M. (Husein & Slama, 2018)	Husein, Fatimah; Slama, Martin	Online piety and its discontent: revisiting Islamic anxieties on Indonesian social media	2018	Indonesia and the Malay World	27
Dynel M.; Poppi F.I.M. (Dynel & Poppi, 2018)	Dynel, Marta	In tragoedia risus: Analysis of dark humour in post-terrorist attack discourse	2018	Discourse and Communication	25
Klein O.; Muis J. (Klein & Muis, 2019)	Klein, Ofra	Online discontent: comparing Western European far-right groups on Facebook	2019	European Societies	56
Asongu S.A.; Nwachukwu J.C.; Pyke C. (Asongu et al., 2019)	Nwachukwu, Jacinta C.	The Comparative Economics of ICT, Environmental Degradation and Inclusive Human Development in Sub-Saharan Africa	2019	Social Indicators Research	46
Ibtasam S.; Razaq L.; Ayub M.; Webster J.R.; Ahmed S.I.; Anderson R. (Ibtasam et al., 2019)	Ibtasam, Samia; Razaq, Lubna; Ayub, Maryam; Webster, Jennifer R.	"My cousin bought the phone for me. I never go to mobile shops.": The role of family in women's technological inclusion in Islamic culture	2019	Proceedings of the ACM on Human-Computer Interaction	35
Nisa E.F. (Nisa, 2019)	Nisa, Eva F.	Muslim Women in Contemporary Indonesia: Online Conflicting Narratives behind the Women	2019	Asian Studies Review	22

## Ulama Congress

Salinas E.; Pradell T.; Molera J. (Salinas et al., 2019)	Salinas, Elena; Pradell, Trinitat ; Molera, Judit	Glaze production at an early Islamic workshop in al-Andalus	2019	Archaeological and Anthropological Sciences	21
Aljarah I.; Habib M.; Hijazi N.; Faris H.; Qaddoura R.; Hammo B.; Abushariah M.; Alfawareh M. (Aljarah et al., 2021)	Habib, Maria; Qaddoura, Raneem	Intelligent detection of hate speech in Arabic social network: A machine learning approach	2021	Journal of Information Science	51

Table 6. 18 Top Female Authors by Productivity and Citation

Female Author	Title	Year	Source title	Cited	T. Article
	Global infertility and the globalization of new reproductive technologies: Illustrations from Egypt	2003	Social Science and Medicine	206	
	Middle Eastern masculinities in the age of new reproductive technologies: Male infertility and stigma in Egypt and Lebanon	2004	Medical Anthropology Quarterly	136	
	"He won't be my son": Middle Eastern Muslim men's discourses of adoption and gamete donation	2006	Medical Anthropology Quarterly	112	
Inhorn, Marcia C.	Mutuality and immediacy between marja and muqallid: Evidence from male in vitro fertilization patients in shii lebanon	2011	International Journal of Middle East Studies	25	6
	Medical Cosmopolitanism in Global Dubai: A Twenty-first-century Transnational Intracytoplasmic Sperm Injection (ICSI) Depot	2017	Medical Anthropology Quarterly	9	
	Abrahamic traditions and egg freezing: Religious Women's experiences in local moral worlds	2020	Social Science and Medicine	8	
	Performing citizenship on YouTube: Activism, satire and online debate around the anti-Islam video Fitna	2010	Critical Discourse Studies	104	
van Zoonen, Liesbet	Cosmopolitan communication online: YouTube responses to the anti-Islam film Fitna	2011	British Journal of Sociology	21	3
	How funny can Islam controversies be? Comedians defending their faiths on YouTube	2013	Television and New Media	7	
	Performing citizenship on YouTube: Activism, satire and online debate around the anti-Islam video Fitna	2010	Critical Discourse Studies	104	2
Vis, Farida	Cosmopolitan communication online: YouTube responses to the anti-Islam film Fitna	2011	British Journal of Sociology	21	2
	Performing citizenship on YouTube: Activism, satire and online debate around the anti-Islam video Fitna	2010	Critical Discourse Studies	104	
Mihelj, Sabina	Cosmopolitan communication online: YouTube responses to the anti-Islam film Fitna	2011	British Journal of Sociology	21	2
Abokhodair, Norah	Privacy & social media in the context of the Arab Gulf	2016	DIS 2016 - Proceedings of the 2016 ACM Conference on Designing Interactive Systems: Fuse	98	6

	#ISISisNotIslam or #DeportAllMuslims? Predicting unspoken views	2016	Proceedings of the 2016 ACM Web Science Conference	49	
	Photo sharing in the Arab gulf: Expressing the collective and autonomous selves	2017	Proceedings of the ACM Conference on Computer Supported Cooperative Work, CSCW	33	
	Privacy and twitter in Qatar: Traditional values in the digital world	2016	WebSci 2016 - Proceedings of the 2016 ACM Web Science Conference	26	
	"Against marrying a stranger:" Marital matchmaking technologies in Saudi Arabia	2017	DIS 2017 - Proceedings of the 2017 ACM Conference on Designing Interactive Systems	20	
	Holy Tweets: Exploring the Sharing of Quran on Twitter	2020	Proceedings of the ACM on Human-Computer Interaction	7	
	Privacy & social media in the context of the Arab Gulf	2016	DIS 2016 - Proceedings of the 2016 ACM Conference on Designing Interactive Systems: Fuse	98	
Vieweg, Sarah	Photo sharing in the Arab gulf: Expressing the collective and autonomous selves	2017	Proceedings of the ACM Conference on Computer Supported Cooperative Work, CSCW	33	3
	Privacy and twitter in Qatar: Traditional values in the digital world	2016	WebSci 2016 - Proceedings of the 2016 ACM Web Science Conference	26	
	Creative and Lucrative Dawa: The Visual Culture of Instagram amongst Female Muslim Youth in Indonesia	2018	Asiascape: Digital Asia	61	
	Social media and the birth of an Islamic social movement: ODOJ (One Day One Juz) in contemporary Indonesia	2018	Indonesia and the Malay World	35	
Nisa, Eva F.	The internet subculture of Indonesian face- veiled women	2013	International Journal of Cultural Studies	30	5
	Muslim Women in Contemporary Indonesia: Online Conflicting Narratives behind the Women Ulama Congress	2019	Asian Studies Review	22	
	Internet and Muslim Women	2021	Handbook of Contemporary Islam and Muslim Lives	0	
	Hate in a tweet: Exploring internet-based islamophobic discourses	2018	Religions	42	
	Hybrid Muslim identities in digital space: The Italian blog Yalla	2017	Social Compass	22	
	Emotional politics, islamophobic tweets: The hashtags #Brexit and #chiudiamoiporti	2019	Partecipazione e Conflitto	8	
Evolvi, Giulia	The veil and its materiality: Muslim women's digital narratives about the burkini ban	2019	Journal of Contemporary Religion	8	6
	Introduction: Islam, space, and the internet	2021	Journal of Religion, Media and Digital Culture	4	
	Likes, comments, and follow requests: The instagram user experiences of young Muslim women in the Netherlands	2021	Journal of Religion, Media and Digital Culture	2	

WebSci 2016 -

Akou, Heather	Building a new "world fashion": Islamic dress in the twenty-first century	2007	Fashion Theory - Journal of Dress Body and Culture	38	2
Marie	Interpreting Islam through the Internet: Making sense of hijab	2010	Contemporary Islam	28	-
Ibtasam, Samia	"My cousin bought the phone for me. I never go to mobile shops.": The role of family in women's technological inclusion in Islamic culture	2019	Proceedings of the ACM on Human-Computer Interaction	35	2
	For God's sake! Considering Religious Beliefs in HCI Research: A Case of Islamic HCI	2021	Conference on Human Factors in Computing Systems - Proceedings	9	
Paulch Emma	Hijabers on instagram: Using visual social media to construct the ideal muslim woman	2018	Social Media and Society	33	2
Baulch, Emma	Beyond the Middle Classes, Beyond New Media: The Politics of Islamic Consumerism in Indonesia	2024	Asian Studies Review	0	2
Dunani anti Alila	Hijabers on instagram: Using visual social media to construct the ideal muslim woman	2018	Social Media and Society	33	2
Pramiyanti, Alila	Hijabers on Instagram: Using Visual Social Media to Construct the Ideal Muslim Woman	2018	Social Media and Society	27	2
	Accelerating Islamic charities in Indonesia: zakat, sedekah and the immediacy of social media	2020	South East Asia Research	28	
Slama, Martin	Online piety and its discontent: revisiting Islamic anxieties on Indonesian social media	2018	Indonesia and the Malay World	27	3
	Imagining indonesian islam as a center: New mediations and old concepts of power	2020	Archiv Orientalni	4	
	Muslim women's online discussions of gender relations in Islam	2010	Journal of Muslim Minority Affairs	25	
Piela, Anna	How do Muslim women who wear the niqab interact with others online? A case study of a profile on a photo-sharing website	2017	New Media and Society	7	3
	Online Islamic Spaces as Communities of Practice for Female Muslim Converts Who Wear the Nigab	2015	Hawwa	4	
Cuala a uni.	Women's Digital Activism in a Changing Middle East	2015	International Journal of Middle East Studies	24	
Sreberny, Annabelle	The internet in Iran: The battle over an emerging virtual public sphere	2010	Internationalizing Internet Studies: Beyond Anglophone Paradigms	3	2
	Glaze production at an early Islamic workshop in al-Andalus	2019	Archaeological and Anthropological Sciences	21	
Salinas, Elena	An early example of glaze technology diffusion in North Africa: The Islamic workshop of Tahert (central Maghreb, Algeria)	2023	Journal of Archaeological Science: Reports	0	2
	Glaze production at an early Islamic workshop in al-Andalus	2019	Archaeological and Anthropological Sciences	21	
Pradell, Trinitat	An early example of glaze technology diffusion in North Africa: The Islamic workshop of Tahert (central Maghreb, Algeria)	2023	Journal of Archaeological Science: Reports	0	2
	Performing citizenship on YouTube: Activism, satire and online debate around the anti-Islam video Fitna	2010	Critical Discourse Studies	104	
Mihelj, Sabina	Cosmopolitan communication online: YouTube responses to the anti-Islam film	2011	British Journal of	21	2

Figure 12, Table 5, and Table 6 present a comprehensive analysis of the role and contributions of female authors in digital Islamic literature, highlighting their significant impact across various disciplines such as social sciences, medical anthropology, and geopolitics. It shows the diversity of topics covered by these authors, including environmental ethics, women's political rights, and the implications of new reproductive technologies in Middle Eastern societies. This research emphasizes the importance of collaboration among female scholars and the high level of recognition they receive, as evidenced by citations. Notably, Marcia C. Inhorn stands out for her contribution to medical anthropology and reproductive technology. This paper also identifies emerging themes in digital Islamic literature, such as the expression of Islamic identity through social media (Abokhodair & Vieweg, 2016), the intersection of technology with religious practice, and evolving gender dynamics in Muslim societies (Clarke & Inhorn, 2011; Inhorn, 2003, 2004, 2006; Stowasser, 2001). This analysis challenges existing perceptions of gender bias in Islamic studies and the digital humanities, underscoring the vital role female authors play in advancing the discourse on Islam and digital culture (Clarke & Inhorn, 2011; Inhorn, 2003, 2004, 2006).

An analysis of the most prolific female writers in the digital Islamic literature reveals a dynamic and diverse field. Their contributions not only enrich the academic world but also provide deep insights into the complexities of digital Islam and gender dynamics.

## Most Cited References in Digital Islam Literature

This study uses bibliometric indicators, such as the most cited references by the author and the most cited sources and references, to analyze the theoretical framework that dominates studies on the interaction between Islam and digital technology.

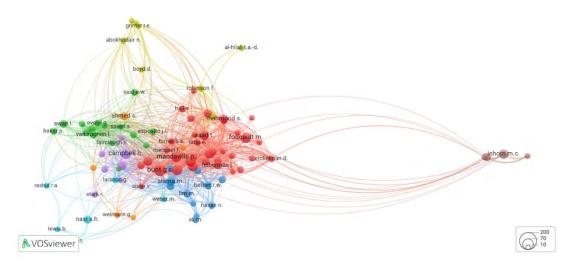


Figure 13. Most cited Reference by Author in Digital Islam

<u>Figure 13</u> shows the names of the authors of the documents referenced in the 1060 articles analyzed in this study. The table below provides a detailed summary of the 15 most influential authors.

Authors	Citation
Bunt G.R.	91
Foucault M.	71
Roy O.	71
Campbell H.	66

Table 7. 15 Most Influental References Authors

Mandaville P.	66
Eickelman D.F.	64
Anderson J.W.	63
Hirschkind C.	60
Asad T.	55
Inhorn M.C.	55
Bunt G.	53
Campbell H.A.	53
Slama M.	50
Mahmood S.	48
Ahmed S.	42

<u>Table 7</u> shows the authors who made the most significant contributions to the 1060 pieces of literature examining the relationship between Islam and digital technology based on the number of citations to their work in the documents analyzed.

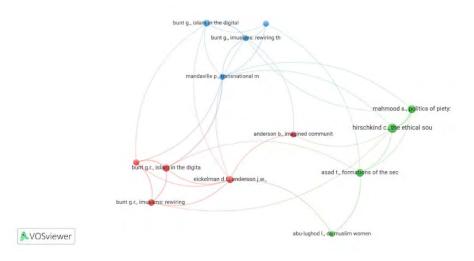
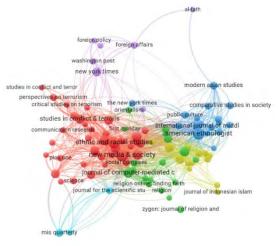


Figure 14. Most Cited References in Digital Islam

Table 8. 15 Most Cited References in Digital Islam

Authors	Article	Citations
	The Ethical Soundscape: Cassette Sermons and Islamic	
Hirschkind C. (2009)	Counterpublics	26
Mahmood S. (2012)	Politics of Piety: The Islamic Revival and the Feminist Subject	19
Asad T. (2010)	Formations of the Secular: Christianity, Islam, Modernity Islam in the Digital Age: E-Jihad, Online Fatwas and Cyber Islamic	18
Bunt G.R. (2003) Eickelman D.F.,	Environments	28
Anderson J.W. (2003)	New Media in the Muslim World: The Emerging Public Sphere	14
Bunt G.R. (2009)	iMuslims: Rewiring the House of Islam	23
	Virtually Islamic: Computer-Mediated Communication and	
Bunt G.R. (2000)	Cyber Islamic Environments	11
Mandaville P. (2006)	Transnational Muslim Politics: Reimagining the Umma	11
Abu-Lughod L. (2015)	Do Muslim Women Need Saving?	10
	Imagined Communities: Reflections on the Origin and Spread of	
Anderson B. (1991)	Nationalism	10
Roy O. (2004)	Globalized Islam: The Search for a New Ummah	10

<u>Table 8</u> and <u>Figure 14</u> show the significant works frequently cited in the literature on the correlation between Islam and technology, emphasizing their impact on shaping academic comprehension of the topic.





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Table 9. 15 most cited sources

Figure 15. Most Cited Sources

Sources	Citation
American Ethnologist	94
Ethnic and Racial Studies	93
New Media & Society	103
Contemporary Islam	62
Journal of Communication	73
Journal of Computer-Mediated Communication	64
Journal of Ethnic and Migration Studies	63
New Media in the Muslim World: The Emerging Public Sphere	63
The New York Times	56
Information, Communication & Society	56
Social media + Society	46
International Journal of Communication	46
Computers in Human Behavior	47
The Muslim World	49
Indonesia and the Malay World	49

The interaction between Islam and digital technology is a dynamic and interdisciplinary field of study, as observed from the analysis of various data sources in Figure 15 and Table 9. Multiple disciplines such as anthropology, sociology, and media studies contribute to this research by offering diverse perspectives on the topic. The most-cited references indicate a significant focus on the influence of new media and communication technologies on Muslim life. Scholars such as Bunt and Hirschkind are recognized for their influential contributions to the field. Several journals, including "American Ethnologist," "New Media & Society," and "Contemporary Islam," Contemporary Islam, are important sources for publishing current and influential studies on this subject. Research in this area considers both global and local contexts, recognizing the unique social, cultural, and political dynamics at play. Critical topics that are frequently explored include identity, online Muslim communities, religious practices in the digital age, and debates on religious authority in digital

spaces. Overall, this study combines theoretical analysis with empirical case studies to understand the impact of technology on the social and spiritual dimensions of Muslims' lives.

### **Discussion**

## What a Digital Islam?

This bibliometric analysis has revealed some important findings in the form of influential authors, the most impactful articles, topic trends, topic evolution, and the most cited references among authors who have written articles on digital Islam. The main findings described above can be the basis for formulating what and how this concept of digital Islam is actually. In this discussion, I will present in more detail, based on the results of bibliometric research, the question of what digital Islam is.

Before discussing the topic of digital Islam, two important terms in the discourse of Islam in the digital age often appear as the basis of writers' thoughts: digital religion and the term digital ummah or cyber ummah. Therefore, it is important to first position our understanding of the two terms.

Digital religion encompasses the intersection, transformation, and coexistence of religious practices with digital technologies and cultures. It includes the expression, experience, and negotiation of religious beliefs, practices, communities, and identities in digital spaces, such as social media, websites, online forums, and virtual reality environments. The field studies how online and offline religious activities are interconnected and how digital technologies influence traditional religious practices (Campbell and Evolvi 2020). It also explores the emergence of new forms of spirituality and religious engagement supported by the digital world (Campbell & Evolvi, 2020). The study of digital religion also focuses on the impact of digital media and the Internet on how religious adherents practice their faith, interact with religious communities, and integrate their religion with digital culture, thereby changing the landscape of contemporary religiosity (Campbell, 2017).

The concept of "Cyber Ummah" or "Virtual Ummah" refers to the Islamic community in cyberspace that emerged with the advent of the Internet in the Muslim world (Khamis, 2018). Cyber Ummah represents an online community that transcends geographical, ethnic, and cultural boundaries (Khamis 2018). The Internet enables global communication among Muslims and interactions between different groups of Muslims and non-Muslims (Khamis 2018). It creates an egalitarian and interactive virtual community that allows for the formation of new identities and resistance in the online Islamic discourse. Cyber Ummah has implications for the creation of diverse identities and resistance, shaping various Islamic discourses and sites in cyberspace (Khamis 2018). Online sites and platforms function as virtual marketplaces in which ideas and concepts about Islam and Muslims are exchanged. Muslims use online resources to access mainstream and alternative interpretations of Islamic doctrines and scriptures. Overall, the Cyber Ummah is a phenomenon that reflects the changes in Muslim societies online and offline and plays an important role in shaping the religious, social, and cultural aspects of Muslim communities in the digital age.

First, let us look at one of the bibliometric findings: in 1983 and 1993, there were two papers with the highest citation value. The papers were by Rapoport (1983) and Robinson (1993), Rapoport's work, in this case, criticizes the definition of the concept of "modern terrorism" that is only associated with an increase in the number of incidents, the amount of damage, and the transnational nature of terrorist attacks today. He emphasized the importance of considering historical roots and early experiences in understanding terrorism (Rapoport, 1983). This research shows that the definition of modern terrorism is related not only to technological changes but also to significant political events that influence the motivations and actions of terrorist groups

(Rapoport, 1983). Furthermore, Robinson's work discusses how print technology affected religious change in Islam in his paper from 1993. He explains that Muslims' negative responses to printing are deeply rooted in the system of knowledge transmission in Islamic societies (Robinson, 1993). Printing challenged the traditional method of knowledge transmission from person to person, which is central to Islamic authority and belief in knowledge (Robinson, 1993). Muslims hesitated to adopt the printing press until they perceived benefits that outweighed the potential harm they could cause (Robinson 1993). The adoption of printing in Muslim societies is often driven by the belief that it is a necessary tool for maintaining faith (Robinson, 1993).

These two works do not directly state an Islamic definition of digital Islam. However, as early works that discussed the relationship between technology and Islam, these works need to be considered. Digital Islam can be defined by several important indicators (Rapoport, 1983; Robinson, 1993). The first is the interaction between history and technology, where historical events and technological developments influence religious practices and understanding in Islam. Second, the transformation in knowledge transmission, where the way knowledge is delivered and received, changes from traditional face-to-face to print and digital media. Third, sociopolitical dynamics, in which political and social events shape responses to technology and definitions of religious practice. Finally, adaptation and resistance to innovation, in which Muslims respond to new technologies by weighing benefits and potential harm.

Through these indicators, Digital Islam has become a complex phenomenon involving interactions between tradition, technology, and socio-political factors. This phenomenon includes changes in knowledge transmission, adaptation to innovation, and dynamics of religious practice.

Through bibliometric analysis, I also found that several articles and authors have the most impact on the discussion of digital Islam. Norah Abokhodair, Francis Robinson, Sarah Vieweg, Eva F. Nisa, Bryan S. Turner, Anton Törnberg, Jamie Cleland, and Patrick Eisenlohr are the most influential authors based on bibliometric analysis. Furthermore, I conducted an in-depth review to identify key indicators in the articles of these researchers to identify some concepts related to digital Islam.

With respect to Digital Islam, an analysis of the research findings revealed several key aspects of digital Islam. First, the use of digital technology, especially social media, has changed the dissemination of religious information and formation of religious discourse among Muslim communities around the world. Individuals can now seek religious knowledge independently through the Internet, which challenges traditional religious authorities and digitally empowers them (Robinson 1993; Turner 2007).

In addition, the Internet has facilitated global connectivity and opened up spaces for international discussions and interpretations of Islam. This expansion challenges the authority of traditional Islamic scholars and allows for diverse interpretations and translations of Islam through digital platforms (Robinson, 1993).

Third, social media platforms can perpetuate negative stereotypes about Islam and Muslims, contributing to the (re)production of discursive power that influences the public's understanding of religion (Eickelman 2003).

Moreover, the use of sound reproduction technologies in religious practices and the sharing of religious content on digital platforms reflects contemporary adaptations in Islam, signaling the emergence of Digital Islam.

The use of technology in Muslim communities is influenced by traditional values and cultural expectations, particularly in terms of privacy and social media interactions. In addition, the role of Muslim women in digital spaces is significant. Women use and influence the digital space for religious, social, and political purposes, emphasizing the importance of gender in discussions on Digital Islam (Nisa, 2018b, 2018a, 2021).

In addition, the implementation and utilization of digital technologies in religious contexts, such as matchmaking technologies and sharing Quranic verses on Twitter, illustrate the potential of digital technologies to enhance religious communities and practices (Abokhodair et al., 2020).

To understand Digital Islam, it is necessary to consider the social, cultural, and political contexts in which Digital Islam exists. In the thematic analysis related to digital Islam, various themes have been identified, such as "terrorism," "Islamic state," and "jihad" being the main research focus, while underlying themes such as "Malaysia," "technology," and "culture" are recognized as important but less explored. The shift in topics from 2008 to 2021 reflects the use of technology in religious practices, theological debates, and exploration of religious identity. Social media, especially Instagram, has become a popular platform for sharing religious, political, and cultural perspectives and discussing issues such as Muslim identity and Islamophobia. There is also increasing emphasis on the intersection of Islam and technology, including gender issues and the representation of Muslim women. Traditional religious themes and new themes such as "bioethics" and "hajj" are also important. Sociopolitical issues such as "Islamophobia" and "nationalism" are also of concern.

Digital Islam can thus be defined as the integration of Islam with digital technology, which includes the use of digital platforms and social media to promote inclusivity, accessibility, and community building within the global Muslim community. This suggests a broadening of the scope of the discussion, in which Islamic studies are becoming more integrated with technology, adapting to contemporary debates, and engaging in various fields, thus expanding the scope of the discussion on Islam in the digital age.

## Digital Islam as a Specialization in Digital Religion Studies

Digital Islam is a specialized study of Islam's interactions with digital religion (Campbell, 2012; Campbell & Evolvi, 2020). It involves research on how Islamic practices and communities adapt in a digital context. This transformation has been influenced by the history and technological developments that have affected Islam. This study involves an in-depth exploration of the ways in which Islamic practices, beliefs, and communities are adapted and reconstructed in digital contexts. This phenomenon is reflected in various aspects ranging from the transformation of religious practices and the dissemination of information to the formation of communities that undergo significant changes due to adaptation and the dynamic interaction between tradition and technological innovation. This transformation is inseparable from the historical context and the evolution of technology that has influenced Islam, as emphasized by Rapoport and Robinson, who show how print technology was initially received with hesitation by Muslims but was eventually adopted because of its great benefits in maintaining faith.

## Digital Muslim and Digital Ummah

To further analyze digital Islam, it is important to acknowledge the contributions of various researchers who have deepened our understanding of the subject. Norah Abokhodair, Eva F. Nisa, Bryan S. Turner, and Anton Törnberg, for example, have explored aspects such as the representation of Islam on social media, the use of digital technologies in religious practices, and the social dynamics that arise from online interactions in Islamic contexts. These works help us understand

how digital technologies not only change religious practices but also shape discourse and identity within Muslim communities.

The term "digital Muslim" or "digital Ummah" refers to the online Muslim community, which is a manifestation of cyber Ummah (Khamis 2018). This concept highlights how Muslims, transcending geographical and cultural boundaries, use digital technologies to communicate, interact, and build communities. Digital Muslims are individuals whose religious practices are integrated into a digital context, while digital Ummah is the global community formed through these interactions. Important factors driving this concept include the use of social media for the dissemination of religious information, challenges to traditional religious authority through wider access to information, and formation of new identities and resistance in the digital space.

These studies highlight the impact of digital technologies on Islam and Muslims, focusing on four main areas: dissemination of religious information, community and identity building, adaptation and resistance to innovation, and gender roles. Digital technologies have revolutionized the dissemination of religious information, allowing Muslims to access a plethora of sources without relying on traditional intermediaries. This democratization of information challenges existing religious authority and fosters a broader space for interpretation and discussion. Furthermore, social media and online platforms facilitate the formation of global Muslim communities, enhancing the concept of a digital ummah that promotes solidarity and a shared identity across geographic boundaries. This paper also examines the varied responses of Muslims to technological innovations, highlighting the balance between preserving tradition and embracing modernity. Additionally, it underscores the significance of gender, particularly the role of women in using digital platforms for education, social engagement, and political activism, which challenge traditional narratives and enable self-representation. By integrating these aspects, this study provides a comprehensive understanding of the complex dynamics between Islam, its followers, and digital technology, illustrating how these interactions shape and sustain global Muslim communities in the digital age.

## Theoretical Frameworks in Digital Islam

This study aimed to understand the key theories and concepts that have shaped the field by identifying and analyzing the most cited documents and references in the literature. It also evaluates these theoretical frameworks to gain insights into how they explain the relationships between Islamic religious practices and the use and impact of digital technology. This study critically assesses the effectiveness and relevance of these theoretical approaches and suggests new directions for future research in this area.

As previously found, this study identified each of the 15 most-cited references, their sources, and authors. Some of the key concepts from these 15 references are as follows:

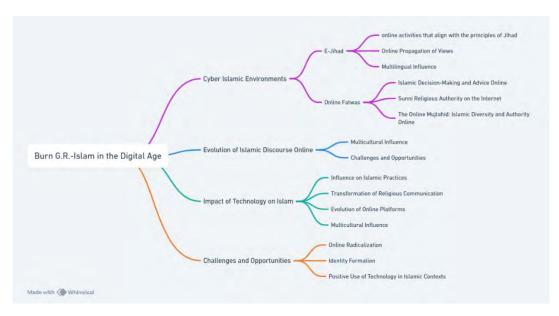


Figure 16. "Islam in the Digital Age" by Gary R. Bunt

As shown in Figure 16, Bunt (2003) examines the transformative role of technology, especially the Internet, in Muslim religious practices. This work introduces the concept of the Cyber Islamic Environment, which has facilitated new forms of religious expression, such as E-jihad and online fatwas. These developments allow for the wider dissemination of Islamic views and decision-making processes. The book also addresses the complexities of cultural mixing within online discourse, which presents opportunities for broadening the reach of traditional teachings and challenges to preserving religious authenticity. Furthermore, Bunt discussed the impact of technology on the expansion of Arabic culture and language, alongside concerns about online radicalization and identity formation. The author advocates constructive engagement with technology, emphasizing that innovation and adaptation are crucial for maintaining the essence of religious practices in the digital era.

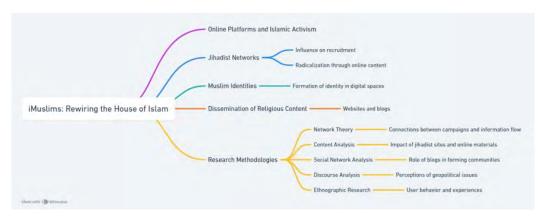


Figure 17. iMuslims: Rewiring the House of Islam by Gary R. Bunt

As shown In Figure 17, Bunt (2009) provides a comprehensive examination of the impact of online platforms on Islamic activism, jihadi networks, Muslim identity, and the spread of religious teaching. Using a multidisciplinary approach, Bunt explored the intricate dynamics of online Muslim communities. The book employs network theory to analyze the connections within Islamic campaigns and the distribution of information online; content analysis to assess the role of jihadi websites and materials in recruitment and radicalization; and social network analysis to explore the formation of Muslim networks and communities via blogs. Additionally, discourse analysis was

applied to understand how online narratives influence community perceptions of global events, while ethnographic research offers deep insights into the digital experiences, motivations, and behaviors of users. Through these methodologies, Bunt's work illuminates the complex interplay between Islam and technology, thus enhancing our understanding of the digital dimensions of religious life and identity in the contemporary world.

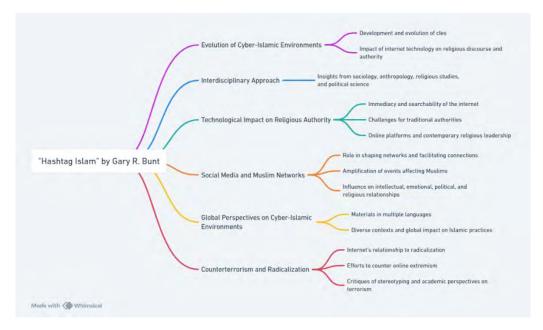


Figure 18. Hashtag Islam

Furthermore, as shown in Figure 18, Bunt (2018) discusses the development of cyber-Islamic environments (CIES) and the relationship between technology and Islamic practices. The book reviews several key themes and perspectives, including the evolution of CIES as influenced by developments in Internet technology and how it is changing religious discourse and authority in Islam. The author uses an interdisciplinary approach by drawing on insights from fields such as sociology, anthropology, religious studies, and political science, to understand the complex interactions between technology and Islam. One important theme addressed in this book is the impact of technology on Islamic religious authority online, including the challenges faced by traditional authorities in the digital age, and the role of online platforms in shaping contemporary understandings of religious leadership. The book also explores the role of social media in shaping Muslim networks and influencing relationships between Muslim individuals and communities in various contexts.



Figure 19. Campbell Theori of Digital Religion

The next expert who was also frequently cited by the authors in the analyzed articles was Heidi Campbell (2016). As Figure 19 shows, the concept often taken from Campbell is a digital religion. Exploration of the phenomenon of "Digital Religion" includes the study of how religion and new information communication technologies, especially the Internet, interact with each other. It examines how religious beliefs, practices, and communities manifest and transform in digital spaces, including online religious communities, virtual worship spaces, and religious rituals performed online (Campbell & Vitullo, 2016). Digital Religion encompasses various terms such as "cyber religion," "virtual religion," "network religion," and "internet religion," marking the field as an interdisciplinary one involving Religious Studies, Communication and Media Studies, Information Studies, and Sociology.

Researchers have explored the interconnections between online and offline religious realms, highlighting how traditional religious contexts blend with new digital contexts (Campbell 2012). In the Western context, "Digital Religion" has emerged as a way to discuss and study online religious practices that influence offline religious communities and institutions. The concept recognizes the unique influence of the Internet and digital technologies in shaping religious practices and beliefs as well as changing perceptions of religiosity in society. Digital Religious Studies is considered a subfield of broader disciplines, such as Internet Studies and Media, Culture and Religion Studies.

Research in this field was rooted in the mid-1990s, focusing on the use of the Internet by religious groups and its potential implications for religious beliefs and practices (Rapoport, 1983; Robinson, 1993). It also examines how religious groups move religious practices to the Internet, creating online communities and houses of worship, and conducting rituals online (Tsuria et al., 2017). Helland (2005; 2005) distinguishes between "religion online" versus "online religion," with "religion online" referring to information presented and controlled by traditionasl religious organizations or leaders, while "online religion" relates to religious innovation and collaboration that creates new understandings of religion through online environments.

Subsequent studies frequently cited in 1060 were spread across multiple authors. In contrast, the authors cited the work of Bunt and Campbell. Therefore, in this case, a focused summary of the most cited studies is presented in <u>Table 10</u>.

Table 10. Insight from other most cited references in Digital Islam

No.	Paper Title	Insight
1	The Ethical Soundscape: Cassette Sermons and Islamic Counterpublics	This book examines how cassette sermons became a powerful medium in Egypt for shaping public discussions on morality, demonstrating the role of new media in forming Islamic counterpublics.
2	Politics of Piety: The Islamic Revival and the Feminist Subject	Mahmood's work is a critical analysis of the Islamic revival movement in Egypt, focusing on women's participation. It challenges Western perceptions of agency and subjectivity, providing insights into the complex interplay between religion and gender.
3	Formations of the Secular: Christianity, Islam, Modernity	Asad explores the concept of secularism as it has evolved in Christian and Islamic contexts, questioning the assumptions of modernity and its impact on religious practices.
4	New Media in the Muslim World: The Emerging Public Sphere	This book discusses the transformative role of new media technologies in Islamic societies, highlighting how they have contributed to the emergence of a public sphere where traditional and modern values intersect.
5	Transnational Muslim Politics: Reimagining the Umma	Mandaville examines how Muslim politics transcends national boundaries, exploring the concept of the Umma (the global Muslim community) in the context of globalization and technological advances.
6	Do Muslim Women Need Saving?	Abu-Lughod critiques the Western narrative of rescuing Muslim women, arguing for a deeper understanding of cultural practices and the diverse experiences of women within Islamic societies.
7	Imagined Communities: Reflections on the Origin and Spread of Nationalism	Though not exclusively about the Islamic world, Anderson's seminal work on nationalism offers critical insights into how national identities are constructed, which is relevant to understanding Muslim identity and solidarity.
8	Globalized Islam: The Search for a New Ummah	Roy discusses the challenges and transformations within Islam in the context of globalization, focusing on the search for a new form of Muslim community that transcends traditional geographic and cultural boundaries.

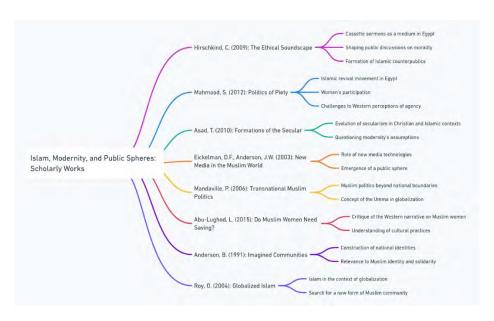


Figure 20. Mapping insight from other most cited references in Digital Islam

Figure 20 explores the dynamic role of digital platforms in shaping contemporary Islamic identities, practices, and communities, emphasizing their function as transformative public spaces. It highlights how digital spaces facilitate discussions of morality and ethics, challenge traditional boundaries, and enable the formation of new counterpublics within Islamic communities. Notably, this study addresses the impact of digital engagement on gender dynamics, offering perspectives on the resistance and reaffirmation of societal norms. It also delves into the intersection of secularism, modernity, and religion in digital contexts, enriching the discourse on Muslim societies' navigation of traditions and modernity. Furthermore, this study examines the concept of the Ummah in the digital age, focusing on how digital platforms redefine community boundaries and facilitate transnational connections. This collection of scholarly works provides a comprehensive overview of digital Islam, presenting it as a field in which traditional and modern elements intersect, highlighting the active role of digital spaces in reshaping Islamic identity, authority, and community in the 21st century.

Furthermore, based on the analysis of the study and the main insights from most references, including the theories used and taken in digital Islam references, the following theoretical framework is formulated in this research:

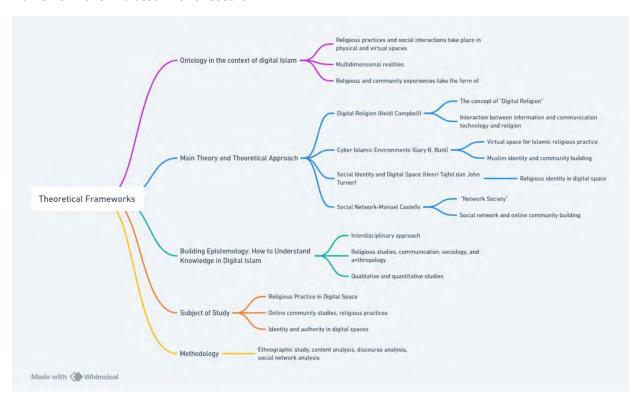


Figure 21. Theoretical Frameworks in Digital Islam

Figure 21 outlines the structure of thought in the realm of Digital Islam, delineating it into four principal branches and their respective subcategories. The first branch, Ontology in the Context of Digital Islam, examines the complex reality of religious practices within both tangible and virtual realms by focusing on community and religious experiences. The second branch discusses Major Theories and Theoretical Approaches, introducing concepts such as Heidi Campbell's digital religion and the Gary R. Bunt's Cyber Islamic Environments, alongside theories on social and digital identity and network societies, emphasize Muslim identity and community formation in digital spaces. Building Epistemology, the third branch adopts an interdisciplinary methodology incorporating religious studies, communication, sociology, and anthropology, utilizing both quantitative and qualitative research to delve into religious practices in digital settings. The final branch, Subjects of

Study, centers on methodological areas, including religious practices, online communities, and the concepts of identity and authority within digital environments, employing ethnographic studies, content analysis, discourse analysis, and social network analysis. This study serves as a comprehensive guide for researchers interested in understanding how Islam is practiced and manifested in digital contexts, highlighting the multidisciplinary nature of this research and the variety of methods required for a thorough investigation.

## Conclussion

This study presents three foundational insights into digital Islamic studies, addressing key questions regarding the nature of digital Islam, its theoretical framework, and the significant role of women. First, it positions digital Islam as a critical subfield of digital religion, highlighting the intersection of Islamic traditions and digital technologies. This intersection catalyzes transformative shifts in religious practices, community formations, and identity reconstructions in the digital sphere, challenging conventional paradigms and forging a new understanding of Islam in the digital age.

Moreover, the research articulates the concepts of 'digital Muslim' and 'digital ummah' as central to this field. The 'digital Muslim' refers to individuals whose Islamic practice and community engagement take place in digital environments, and embodies the broader concept of the 'digital Ummah' - a global online Muslim community that transcends traditional geographic and cultural boundaries. This global community exemplifies significant changes in how religious information is disseminated and how Muslims worldwide connect, share, and interact in the digital age. The synonymous use of digital Muslims and ummah in this study underscores the seamless integration of individual and collective Islamic identities in digital spaces, demonstrating the expansive reach and communal solidarity of Islam across the digital landscape.

This study delves into the theoretical frameworks that frame digital Islam, drawing on disciplines such as digital religious studies, sociology, and anthropology to construct a comprehensive analytical lens. By engaging with theories such as Heidi Campbell's "digital religion," Gary R. Bunt's "cyber-Islamic environments," and discussions of digital and social identity by Henri Tajfel, John Turner, and Manuel Castells' concept of "network societies," the research enriches our understanding of the socio-cultural and technological forces that shape the digital Muslim experience.

Significantly, women's empowerment and active participation in digital Islamic spaces have emerged as key findings that challenge traditional gender narratives. Women writers and scholars enrich the discourse, navigate, and influence the digital religious landscape through their contributions. The strategic use of digital platforms for education, socialization, and activism not only challenges established gender roles but also underscores women's empowerment and self-representation in the context of digital Islam.

In sum, the findings of this study highlight the transformative impact of digital Islam, characterized by the integration of tradition and digital innovation, the elucidation of multidisciplinary theoretical frameworks, and the dynamic engagement of women. By exploring the nature of digital Islam, the synonymous relationship between digital Muslims and Ummah, and the empowering role of women, this research significantly advances the field of action studies.

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## Social Sciences & Humanities Open

## Exploring the Intersection of Islam and Digital Technology: A Bibliometric Analysis --Manuscript Draft--

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Abstract:	This study aims to provide new insights and enrich the understanding of the dynamics and interactions between Islam and digital technology. The study identifies key developments and trends in the field, influential authors and their contributions, patterns of collaboration between Islamic-majority countries, thematic evolution of the literature, and perceptions and attitudes towards digital technology in an Islamic context. Additionally, this study examines the participation and representation of women in the field and the main theoretical frameworks used in the study of digital Islam. The research used the Biblioshiny software in R-Studio to conduct a bibliometric analysis. The research positioning digital Islam as a critical subfield of digital religion and explores that the concepts of 'digital Muslim' is relevan with concpet 'digital ummah.' The findings reveal the transformative impact of digital Islam, characterized by the integration of traditional and digital innovation, multidisciplinary theoretical frameworks, and the dynamic engagement of women. The findings also show that women have a greater representation in papers with the highest citation rates.

# Exploring the Intersection of Islam and Digital Technology: A Bibliometric Analysis

interactions between Islam and digital technology. The study identifies key developments and trends in the field, influential authors and their contributions, patterns of collaboration between Islamic-majority countries, thematic evolution of the literature, and perceptions and attitudes towards digital technology in an Islamic context. Additionally, this study examines the participation and representation of women in the field and the main theoretical frameworks used in the study of digital Islam. The research used the Biblioshiny ware in R-Studio to conduct a bibliometric analysis. The research positioning digital Islam as a critical subfield of digital religion and explores that the concepts of 'digital Muslim' is relevan with concept 'digital ummah.' The findings reveal the transformative impact of digital Islam, characterized by the integration of traditional and digital innovation, multidisciplinary theoretical frameworks, and the dynamic engagement of women. The findings also show that women have a greater representation in papers with the highest citation rates.

Keywowds: Islam, digital religion, digital Islam, bibliometric analysis, women in digital Islam

## Introduction

The significance of digital Islam in Muslim societies is rapidly growing as digital technologies become more prevalent. It is imperative to understand how Islam adapts and is represented in this new medium. Fortunately, despite a lack of consensus on the definition of "digital Islam," it is clear that it represents a unique manifestation of Islam in the digital context, with new identities, practices, and emerging communities (Campbell, 2012; el-Nawawy & Khamis, 2010; Zaid et al., 2022). Some view it as the use of digital tools to practice Islam (Al-Farizi et al., 2022; Arifin et al., 2022; Mustafa et al., 2020), whereas others argue that it extends it (al-Mutairi, 2022; el-Nawawy & Khamis, 2010; Lengauer, 2018; Olson, 2017).

A strong theoretical foundation in digital Islamic studies is essential for a deeper understanding of the implications of digital tools and platforms for Islamic practices and beliefs. One author who addresses this issue is Campbell (2017), who highlights the importance of a theoretical approach to studying digital Islam. Chaudhary (2020) also discussed the importance of digital ethics in Islam, identifying contemporary themes that could serve as the foundation for a broader philosophical framework. Both contributions emphasize the blend of theoretical rigor and practical flexibility in the study of digital Islam and the importance of ongoing research and dialogue in understanding digital transformation in Islam.

Research on "digital Islam" in Muslim societies focuses on various topics related to the relationship between Islam and digital technology. These themes include the connection between religiosity and consumer attitudes (Souiden & Rani, 2015), the use of digital platforms for Islamic education among youth (Alkouatli et al., 2023), the portrayal of Islam in national and international media (Ghauri et al., 2021), media representation and Islamophobia (Saeed, 2007), the impact of Muslim communities on Islamophobia (Bowe & Makki, 2016), the emergence of hybrid Muslim identities in the digital realm (Evolvi, 2017), and women's empowerment in an Islamic context (Gökhan, 2019). These findings highlight the complex interplay between technology, culture, digital islam, and societal norms in the realm of "digital Islam."

In light of the development of research in this field, as previously mentioned. Bibliometric analysis is a valuable tool to study the adaptation and representation of Islam in the digital realm. This enables the identification of trends, conceptual relationships, and gaps in the existing literature, thus strengthening the theoretical framework for future research and highlighting unexplored areas of study. This research also provides insights into how digital technologies affect Islamic beliefs and practices, thus enabling the development of more effective strategies to support Muslim communities in their interactions with these technologies. Conducting research using bibliometric analysis in this area is not only urgent, but also important to advance our understanding of the complex relationship between digital technology, Islam, and religious identity. Moreover, this research can inform the development of inclusive and responsive policies and practices that meet the needs of global Muslim communities.

Regarding the bibliometric analysis method in research on the theme of 'digital Islam,' previous studies have not specifically used this term in their discussion. Instead, they focused on themes such as religious moderation, Islamic studies and new media, terrorism issues, Islamic communication, and Da'wah, as shown in <u>Table 1</u>.

Table 1. Bibliometric analysis research with themes similar to 'digital Islam'

Sr. No	Objective	Title	References
1	Aims to identify the publication of articles and trends or research positions on religious moderation in the last 2 years and to find out the number of citations or publications during 2020 to 2022.	Bibliometric analysis: religious moderation	(Prahesti, 2022)
2	Examines the evolution of Islam and new media topics during the past two decades. The most prolific years for article production were 2012 and 2020	The Bibliometric Analysis Of Islamic Studies Research And New Media Based On Biblioshiny	(Yunus Mustofa & Rizal Mustofa, 2023)
3	The paper aims to evaluate the publication trends on terrorism issues in Indonesia from 1980 to 2022 through bibliometric analysis.	Bibliometric analysis of publications trends on the terrorism issues in Indonesia	(Yumitro et al., 2023)
4	The study aims to conduct a bibliometric analysis of academic articles related to Islamic Studies, analyzing their evolution over time and identifying key research topics.	Systematic Review Studi Islam: A Bibliometrics Analysis (1941-2022)	(Latuconsina, 2023)
5	Islamic communication and da'wah that has been published by Dimensions-indexed journals between 2012 and 2022, using both qualitative and descriptive statistics methods to analyze the 275 papers, VOSviewer was used to create bibliometric maps	Analisis Scientometrik Tentang Komunikasi dan Dakwah Islam dalam Literatur Ilmiah	(Izza, 2023)

Previous studies on the topic of "digital Islam" have not specifically used this term, instead focusing on themes such as religious moderation and new media. No study has explicitly examined the field of "digital Islam" using bibliometric analysis. This study aims to fill this gap by applying bibliometric analysis to identify and analyze the trends and patterns in the study of "digital Islam." This study aims to provide new insights and enrich the understanding of the dynamics and interactions between Islam and digital technology in a broader context.

In relation to these objectives, the research questions in this study are as follows:

RQ1: How does a performance analysis of the 'digital Islamic literature reveal key developments and trends in this field?

RQ2: Who are the influential authors in the 'digital Islam' literature and what are their main contributions? Why have they become influential?

RQ3: How do patterns of collaboration between Islamic-majority countries affect the output and impact of 'digital Islamic research?

RQ4: How does bibliometric analysis reveal the thematic evolution of the 'digital Islam' literature and what are the major themes that have evolved over time?

RQ5: How does sentiment anysis in ' the literature reveal perceptions and attitudes towards digital technology in an Islamic context?

RQ6: What is the involvement and representation of women as the main authors in the 'digital Islam' literature, and what are the main articles that address gender issues?

RQ7: What are the main theoretical frameworks used in the study of digital Islam, and how do they help understand the interaction between Islam and digital technology?

In this article, I explore several important aspects of Digital Islam literature through bibliometric analysis using the Biblioshiny software in R-Studio to map key developments, trends, and dynamics in the field (Aria & Cuccurullo, 2017). First, I conducted a performance analysis of the 'Digital Islam' literature to identify key developments and trends in the field, including publications per year, citations, and the most prolific journals, highlighting how this literature is growing and which areas are receiving the most attention. This bibliometric method effectively maps the state-of-the-art and identifies research gaps and trends, aiding the development of scientific projects ( De Oliveira et al., 2019).

I continue by identifying influential authors in digital Islamic literature using co-citation analysis and author collaboration networks to identify those individuals who have made significant contributions and why they have become influential. This includes an evaluation of their h-index and total number of citations to demonstrate their influence and contribution to the field.

In addition, my research explores the patterns of collaboration between Muslim-majority countries in digital Islam research through network collaboration analysis to understand how international collaboration affects research output and impact. We assessed the contribution and impact based on publications and citations per country and used cluster analysis to identify key collaborative groups.

The research also included an analysis of thematic evolution in the 'digital Islam' literature, using keyword co-occurrence analysis and thematic evolution maps to map key themes and their evolution over time. This provides deep insight into the focus of research in the field and how interest in certain topics has changed.

Sentiment analysis of the 'digital Islam' literature provides an understanding of perceptions and attitudes towards digital technology in an Islamic context, using sentiment scores and analyzing sentiment trends over time to reveal how communities are responding to the integration of technology into religious practice.



I also examined the participation and representation of women as lead authors in the literature on digital Islam, as well as the literature that addresses gender issues, using author gender analysis and network analysis to explore the collaboration and influence of female authors.

Finally, I examine the main theoretical frameworks in 'digital Islam' studies, focusing on the most cited documents and references worldwide to determine the most influential frameworks and how they help understand the interaction between Islam and digital technologies. Through this approach, my article provides a valuable contribution to the understanding of the 'Digital Islam' literature, combining theoretical rigor with empirical analysis to understand the complex dynamics at the intersection of technology, religion, and society.

This study introduces two unique aspects of bibliometric analyses: sentiment analysis of 'digital Islam''s literature, and women's participation and representation in this field. By conducting sentiment analysis, this study uncovers the diverse perceptions and attitudes of Muslims towards digital technologies, providing significant insights into the integration of these technologies into religious practices and daily life. Understanding the interplay between digital Islam and technology is therefore crucial. Moreover, the research on women's participation and representation sheds light on the prominent role women play as primary authors and research subjects in 'digital Islam' literature. This challenges existing assumptions and underscores the importance of gender in this area of research. By emphasizing these aspects, this study contributes to the academic discourse on 'digital Islam' and promotes inclusivity and gender awareness. It also establishes a foundation for future research investigating the relationship between technology, digital Islam, and gender.

## Research Design

Bibliometrix is a flexible, open-source tool for comprehensive science mapping analysis that supports a recommended workflow and enables rapid upgrades and integration with other statistical R packages (Aria & Cuccurullo, 2017). To conduct a bibliometric analysis focusing on the interplay between Islamic or Muslim societies and the digital realm, a detailed search strategy was implemented using the Scopus datate (Donthu et al., 2021). The search string used was as follows:

TITLE-ABS-KEY (islam OR "Muslim societies" AND "digital world" OR "digital age" OR technology OR "social media" OR internet OR "online community" OR "cyber space" OR "digital culture" OR "virtual community" OR "online engagement" OR "digital engagement" OR "social networking" OR "online education" OR "e-learning" OR "virtual learning" OR "digital platforms" OR "online platforms")

This string aimed to capture a wide range of documents discussing Islam or Muslim societies in relation to various facets of the digital age, including technology use, online communities, digital culture, and online learning environments. The initial search returned 1,777 documents, indicating a significant body of work at the intersection of these topics.

To refine the dataset and ensure focus on the most relevant and high-quality publications, several filters were applied. Documents were excluded based on the document type to remove conference reviews (cr), letters (le), editorials (er), short surveys (sh), book chapters (bk), and notes (no), focusing on the analysis of peer-reviewed articles and substantial contributions to the field. The search was also limited to documents published in English to ensure that the analysis was manageable and that the results were accessible to a broad academic audience.

Further refinement was made by excluding documents from unrelated subject areas, such as health sciences, chemistry, and engineering, which do not directly contribute to the understanding of digital Islam. This exclusion was essential to maintain the focus and relevance of the research. After

applying these exclusion criteria, the dataset was narrowed to 1,060 documents, offering a concentrated corpus for bibliometric analysis.

The retained dataset of 1,060 documents forms the basis for bibliometric analysis, allowing for a detailed examination of publication trends, authorship patterns, thematic concentrations, and citation networks within the literature on Islam and digital engagement. This methodological approach not only highlights the breadth and depth of research in this emerging field but also provides a foundation for identifying gaps in the literature, understanding the evolution of key themes over time, and suggesting avenues for future research. Through this bibliometric analysis, this study provides a structured overview of how digital technologies intersect with Islamic practices and their broader implications for Muslim societies globally, as shown in Table 2.

Table 2. Digital Islamic Literature From Scopus (1969-2024)

Description	Results
Timespan	1969:2024
Sources (Journals, Books, etc)	656
Documents	1060
Annual Growth Rate %	4.77
Document Average Age	7.68
Average citations per doc	8.541
References	42523
DOCUMENT CONTENTS	
Keywords Plus (ID)	1442
Author's Keywords (DE)	2941
AUTHORS	
Authors	1790
Authors of single-authored docs	546
AUTHORS COLLABORATION	
Single-authored docs	622
Co-Authors per Doc	1.86
International co-authorships %	10
DOCUMENT TYPES	
article	731
book chapter	173
conference paper	89
review	67

Following the bibliometric analysis, the research design incorporated the use of N-Vivo, a qualitative data analysis software, to conduct sentiment analysis on the same set of 1,060 documents. This phase particularly focuses on understanding the nuances of discourse in the literature. By applying sentiment analysis, this study aims to uncover the prevailing attitudes and perceptions regarding the integration of digital technologies in Islamic practices and Muslim societies. Sentiment analysis in N-Vivo involves coding textual data from documents, identifying positive, negative, and neutral sentiments, and analyzing the context in which digital Islam is discussed.

## **Result and Discussion**

This study presents a comprehensive bibliometric framework for analyzing Digital Islam literature. Using Biblioshiny in R-Studio (Moral-Muñoz et al., 2020), we mapped growth dynamics, identified



influential authors, analyzed international collaborations, outlined thematic evolution, explored sentiments towards digital technologies in the Islamic context, assessed the role of women, and identified theoretical frameworks for digital Islamic studies.

## Growth and Trends in Digital Islam Literature

The analysis starts by presenting the growth trend of Digital Islam literature since its inception. Based on publication and citation data, we identified time periods with significant surges in research, highlighting the topics and issues that dominate academic discourse. A performance analysis of the 'Digital Islam' literature was conducted to identify key developments and trends in the field. This included analyzing publications per year, citations, and the most prolific journals. The analysis highlighted how this literature is evolving and which areas are receiving the most attention.

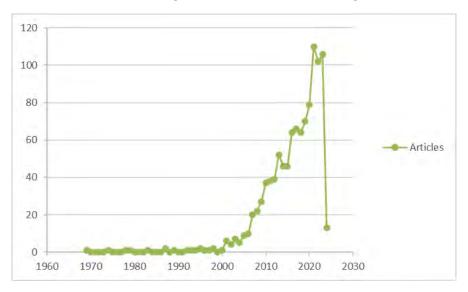


Figure 1. Annual Scientific Production for Digital Islamic Literature

Figure 1 shows a significant and consistent increase in the number of publications of Islamic digital literature from 1969 to 2024. The number of publications per year grew slowly at first but then increased rapidly and significantly in the early 2000s. This surge in publications can be attributed to the growing interest in and recognition of the significance of research in digital Islam, particularly in the past two decades. The period between 2007 and 2024 is marked by significant annual growth in research activity. This era is considered pivotal in the development of Islamic digital literature, signifying a heightened focus on exploring and advancing this field. The data reveal the increasing importance placed on digital Islam and progress made in this area.

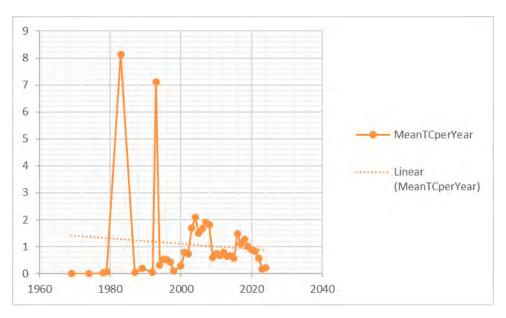


Figure 2. Average citations per year for digital Islam literature

Figure 2 shows the analysis of average citations per year for digital Islamic literature, revealing fluctuations in research recognition and impact over time. Initially, there was a lack of impact from the late 1960s to the early 1980s, with almost no citations per year. However, in 1983, there was a significant increase in the average citations, indicating the importance of research in the field. Since the 2000s, there has been a consistent upward trend in the average citations, albeit with some fluctuations. The years 2003 and 2004 were notable for having a higher average number of citations, indicating increased recognition of research in Islamic digital literature. The average number of citations stabilized at a lower but still significant level, with another peak in 2016. However, from 2019 to 2024, there was a decline in the average number of citations per year, which may be due to a time lag in citation collection or an increase in less-cited publications. This analysis offers insights into the evolving dynamics of citations over time and academic recognition of Islamic digital research on a global scale.



Figure 3. Most productive journals in Digital Islam literature

Figure 3 highlights that the journal 'Religions' is the most prolific, with 30 articles, followed by the 'Indonesian Journal of Islam and Muslim Societies' and 'Contemporary Islam.' The 'Journal of Arab and Muslim Media Research' and the 'Journal of Religion, Media, and Digital Culture' were also significant contributors. Furthermore, the '2013 5th International Conference on Information and Communication Technology for the Muslim World (ICT4M 2013)' and its 2014 edition contributed to the field. The analysis of publication trends from 1969 to 2024 reveals exponential growth in research output, particularly between 2007 and 2024, marking a new era of increased academic interest in digital Islamic studies. This growth was accompanied by fluctuations in citation recognition, with a noticeable increase since the early 2000s. This paper underscores the diverse platforms supporting digital Islamic research and advocates for enhanced strategies to boost the visibility and impact of these studies.

## Influential Sources and Authors in Digital Islam Literature

This includes an evaluation of their h-index and total number of citations to demonstrate their influence and contribution to the field. This study aimed to understand the basis of their influence, including the quality and impact of their research.

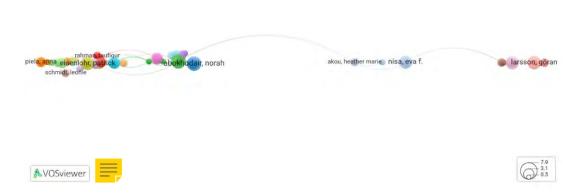


Figure 4. Top Authors and Sources in Digital Islam literature by VOSViewer

presents an analysis of influential authors in the field of Islamic digital literature and their contributions based on citation metrics derived from VOS Viewer. Norah Abokhodair emerges as a leading figure with 233 citations across six documents, whereas Francis Robinson, with a single document, amasses 228 citations, highlighting his significant impact. Sarah Vieweg, Eva F. Nisa, and Bryan S. Turner are also noted for their substantial citation counts, indicating their important contributions to the field. The analysis further identified the high normalized citation scores of Anton Törnberg and Jamie Cleland, underscoring their influential research. These authors primarily focused on the intersection of technology, social media, and socio-cultural dynamics within Muslim societies, offering deep insights into how digital advancements are shaping social, cultural, and religious practices. This study underscores the critical role of digital Islamic research in understanding the evolving relationship between technology and Islamic communities.

Despite their diversity, these studies collectively articulate how digital technologies and social media have become integrated into religious practices, social identity, and discourse dynamics within the context of Islam. Abokhodair and Vieweg (2016, 2020) revealed the use of social media in the Arabian Gulf as a means of expressing collective identity and autonomy, particularly through the maintenance of traditional values in Qatar. This is extended by research on the sharing and

discussion of the Quran on Twitter, which highlights the impact of social media on contemporary religious practices.

Nisa's research emphasizes how Muslim women utilize the Internet and social media, especially in Indonesia, for religious and social purposes, underlining digital platforms as new spaces for religious engagement and expression (Nisa 2013, 2018a, 2021). Francis Robinson (1993), with a focus on the impact of print technology, demonstrates a significant shift in the dissemination and interpretation of Islam, changing the educational and religious landscape in the Muslim world.

The analysis by Törnberg and Nissen (2023) of far-right extra-parliamentary groups in Europe using hyperlink networks on social media to mobilize anti-Islamic sentiment shows how digital technologies can facilitate sociopolitical polarization and extremism. This is complemented by studies on the representation of Muslims in social media discourse, identifying narratives and prejudices that shape public perception.

Turner (2007) and Cleland (2014) address issues of religious authority and Islamophobia in the digital age, while Eisenlohr explores the impact of sound reproduction technologies on Islamic devotional practices, highlighting the complexity of the interaction between technology and authenticity in religious practice.

Together, these studies depict a complex interplay between digital technologies, social media, and Islam, revealing how technology is shaped and transformed by religious and social contexts. Although topics and approaches vary collectively, they offer comprehensive insights into the challenges and opportunities presented by the digital age of the Muslim community and its religious practices.

# *International Collaboration in Digital Islam Literature*

A network analysis of collaborations between countries demonstrates the global reach of digital Islamic research. This study evaluates the intensity and characteristics of collaborations, and identifies patterns that indicate scholarly exchange and joint contributions to global knowledge.

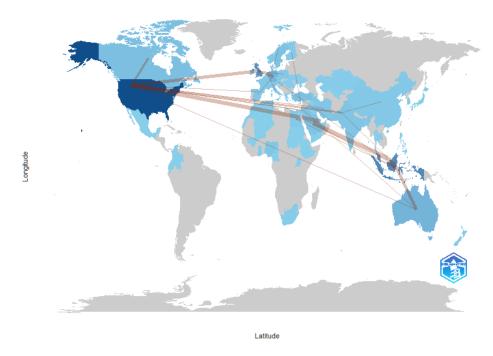


Figure 5. Digital Islam literature collaboration world map

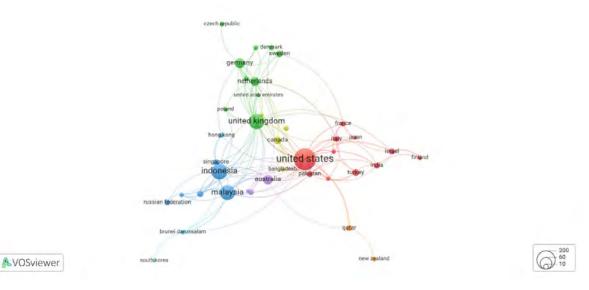


Figure 6. Digital Islam literature co-authorship by Country

In this analysis, we also present the ten countries with the highest number of collaborations in digital Islamic literature research, as well as the ten pairs of countries with the most frequent collaborations.

Table 3. 10 Most Collaborated Countries

Country	Total Collaborations
United States	44
United Kingdom	35
Malaysia	28
Indonesia	26
Australia	18
Netherlands	18
Saudi Arabia	17
Germany	16
Pakistan	14
Italy	12

Table 4. 10 Countries' Most Collaborated Couples

Country 1	Country 2	Collaborations	
Indonesia	Malaysia	7	
Malaysia	Saudi Arabia	7	
United Kingdom	United States	7	
Germany	Netherlands	6	
Qatar	United States	5	
Australia	Indonesia	4	
Netherlands	United Kingdom	4	
Australia	Malaysia	3	
Australia	United States	3	
Canada	United States	3	

The analysis of international collaboration networks in the field of digital Islamic literature, as depicted in <u>Figure 5</u> and <u>6</u> and <u>Tables 3</u> and <u>4</u>, reveals significant patterns and relationships among the countries. The analysis of international collaboration in the digital Islamic literature identifies key patterns and relationships among countries, highlighting the central roles of the United States and

the United Kingdom as academic hubs. Malaysia and Indonesia also emerged as significant contributors, with these countries demonstrating a high level of participation and strong bilateral collaboration, especially between Indonesia and Malaysia. The study showcases the global nature of research collaboration, with notable connections such as Malaysia-Saudi Arabia and UK-US each recording seven collaborations, and a notable trans-European link between Germany and the Netherlands. This underscores the importance of international cooperation to enhance the understanding of Islam in the digital era, reflecting a complex, interconnected global network of knowledge exchange.

Table 4 shows the analyses of inter-country collaborations in Digital Islam research, focusing on how countries with varied interests and capacities collaborate to understand and apply digital technologies in Islamic contexts. It highlights significant partnerships, such as between Indonesia and Malaysia and Malaysia and Saudi Arabia, which reflect shared cultural and religious backgrounds and the integration of technology with Islamic values. Additionally, collaborations between Western and Muslim-majority countries, such as the US, UK, Qatar, and Germany, underscore the importance of cross-cultural research in this field. The findings emphasize that international cooperation is crucial for a comprehensive understanding of Digital Islam, covering the technological, social, and religious dimensions. Such collaborations facilitate enriched dialogue and innovation within Muslim communities globally, showcasing the global relevance and interdisciplinary nature of digital Islamic research.

# Thematic Evolution in Digital Islam Literature

Using keyword co-occurrence and thematic evolution mapping techniques, we explored how the research focus has shifted and evolved. These findings offer insights into research dynamics, highlighting new areas and emerging topics in academic dialogue.

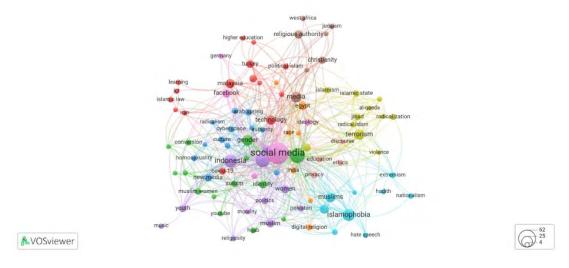


Figure 7. Digital Islam Vos Viewer Co-Occurence Analysis

<u>Figure 7</u> presents a comprehensive analysis of ten thematic clusters identified through specific keywords, each exploring various facets of contemporary societal issues through the lens of digital media, religious identity, and socio-political dynamics.

The first cluster delves into the role of digital platforms, such as Facebook and YouTube, in shaping cultural and religious identities, emphasizing the negotiation of gender politics and social activism within diverse cultural landscapes. This finding highlights the impact of digital media on contemporary discourse and identity formation.

The second cluster examines the interaction between Islamic traditions and modern challenges, such as globalization and the COVID-19 pandemic, focusing on the implications for education, technology, and societal change. This underscores Islamic societies' adaptation to technological advancements and global dynamics.

In the third cluster, the focus shifted to the Middle East, exploring sociopolitical and cultural transformations after the Arab Spring. The role of new media in influencing political activism, religious identity, and cultural values is analyzed, offering insights into the complexities of governance and freedom of expression in the region.

The fourth cluster addresses terrorism, radicalization, and extremism within the context of Islamism, highlighting the influence of jihadist movements and propaganda on global security. It provides a critical view of the sociopolitical challenges posed by radical ideologies.

The fifth cluster explores the intersections of digital culture, activism, and identity politics, particularly the role of social media in advocating for social justice issues, such as Islamophobia and racism. This illustrates how digital platforms facilitate activism and discussions of discrimination.

The sixth cluster looks at Pakistan, focusing on the interplay between digital media, education, ethics, and sociopolitical dynamics concerning Islam, nationalism, and gender. The significance of religious discourse and educational initiatives in shaping societal norms has been emphasized.

The seventh cluster analyzes the religious and cultural dynamics of Christianity, Hinduism, and Judaism in West Africa, exploring the impact of the diaspora, media, and religious authority on community identities and practices.

The eighth cluster investigated the influence of religion, social media, and youth culture in Indonesia, highlighting the role of Instagram and music in shaping moral values and religious expressions among youth.

The ninth cluster considers geopolitical, cultural, and social dynamics in regions such as Egypt, India, and Nigeria, addressing broader themes such as orientalism, race, and secularism. It offers a critical examination of cultural representation and power dynamics.

Finally, the tenth cluster focuses on the intersection of bioethics and Islamic science, examining ethical considerations in scientific advancements guided by Islamic principles. This reflects an interdisciplinary field that merges scientific inquiry with ethical and religious reflections.

Overall, this study elucidates the intricate relationships between digital media, religious identity, and socio-political issues across different cultural and geographical contexts, providing a nuanced understanding of contemporary societal challenges and transformations.

Having identified the various themes in the ten clusters of Vos-Viewer. I then identified how these clusters were thematically interconnected.

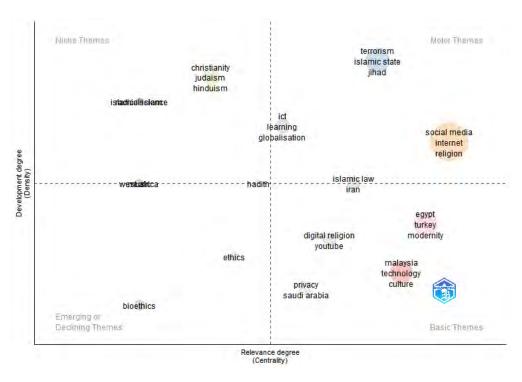


Figure 8. Digital Islam thematic Map analysis Biblioshiny

Figure 8 presents a thematic analysis focused on "Digital Islam," which encompasses the practice, interpretation, and communication of Islam within digital environments. The analysis utilized a thematic map to categorize research themes based on their relevance and level of development, employing axes to represent theme importance and density. Key themes were organized into quadrants, illustrating their relationships and significance. Central themes, identified as Motor Themes, include 'terrorism,' 'Islamic state,' and 'jihad,' highlighting their prominence in discussions about the digital impact on these subjects. Basic Themes, such as 'malaysia,' 'technology,' and 'culture,' though fundamental, are recognized as less explored areas. Emerging or Declining Themes like 'bioethics' and 'ethics' suggest new or waning interests, while Niche Themes mention religions like Christianity, Judaism, and Hinduism, indicating specialized but less connected topics. This analysis helps pinpoint research priorities and potential gaps within the field of digital Islamic studies, suggesting areas for further investigation.

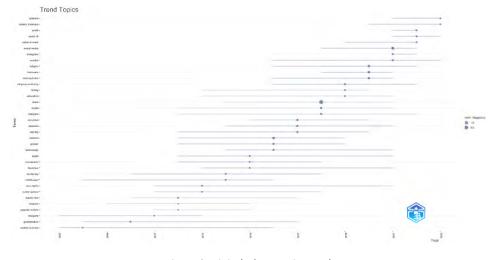


Figure 9. Digital Islam Topic Trends

Figure 9 shows the evolution of topics related to Digital Islam from 2008 to 2021, illustrating a shift towards integrating digital technology within Islamic discourse and practices. Initially, discussions focused on Islamic science and explored the relationship between religion and technology. By 2013, the emphasis had shifted towards the use of new media and communication technologies, such as social media and mobile applications, for education and religious engagement. The year 2016 marked notable interest in the impact of technology on Islamic practices, including the use of digital applications for religious observance and virtual reality for immersive religious experiences. The study highlights a significant trend towards digital platforms that enhance religious practice, accessibility, and community engagement within the Muslim community. By 2021, social media, particularly Instagram, has emerged as a vital space for expressing and debating Islamic identity, showcasing the growing importance of digital spaces for religious dialogue and community development.

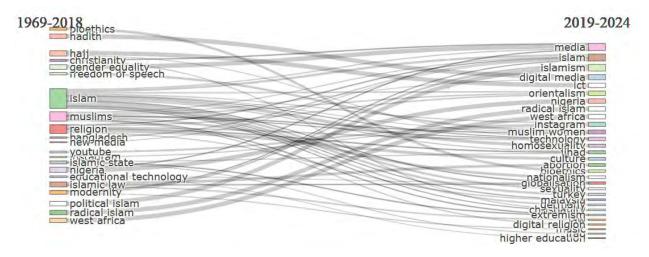


Figure 10. Thematic evolution in Digital Islam literature

<u>Figure 10</u> illustrates the thematic evolution of Islamic studies from 2019 to 2024, highlighting the emergence of new themes such as digital media, ICT, Instagram, and technology. It notes an increased focus on gender and representation, particularly regarding Muslim women, alongside traditional themes such as hadith and Islamic law. The period also saw a rise in discussions on sociopolitical issues, such as Islamophobia, nationalism, and homosexuality, indicating a broader inclusion of social and political analysis within Islamic studies. The study underscores a shift towards integrating Islam with technology and contemporary debates, expanding the scope of discussion to include global issues such as globalization and radical Islam. This reflects a dynamic and expanding field of study that adapts to contemporary societal changes and technological advancements.

# Sentiments Analysis towards Digital Islam

We analyzed the sentiments of the authors of the articles using N-Vivo for a sentiment analysis. The discussions revealed both positive and negative nuances,

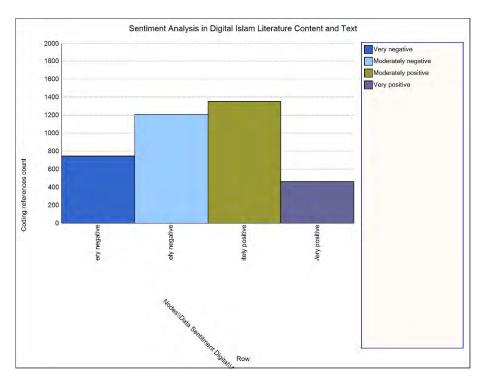


Figure 11. Sentiment Analysis in Digital Islam based on Text

When conducting sentiment analysis on articles using N-Vivo, it is important to note that the results obtained do not reflect the personal sentiments or viewpoints of the authors. The analysis focuses on extracting information and nuances regarding discussions on digital technology, regardless of whether they are positive or negative. The objective of this analysis is to identify themes, patterns, and nuances that emerge from the content, without making any assumptions about the author's attitude towards the subject. Therefore, when stating that 'the discussion reveals both positive and negative nuances, showing complex perceptions of digital technology,' it refers to the range of opinions and views presented in the articles rather than the authors' sentiments. This interpretation clarifies that sentiment analysis is a tool for extracting information and trends from text and that the results reflect the content being analyzed rather than the subjective perceptions of the authors.

Figure 11 presents a sentiment analysis focusing on the interaction between Islam and digital technology, analyzing 748 negative and 1359 positive sentiments from various entries. It reveals a complex and multifaceted discourse, with a dominant, moderately negative sentiment reflecting concerns and criticisms, alongside a significant presence of positive viewpoints that acknowledge the beneficial impact of digital technology on Islam. The analysis underscores the diverse perceptions within the discourse, highlighting both the challenges and opportunities of digital technologies present in contemporary Islamic practice and understanding. This suggests a nuanced landscape of views, balancing skepticism and optimism in the context of the role of digital technology in Islam.

# The Role of Women in Digital Islam Literature

This study investigates gender dynamics in the digital Islamic literature by focusing on the participation of female authors. It employs a two-stage methodology to analyze gender representation, beginning with the identification of 100 highly cited authors from a corpus of 1060 articles, leading to the recognition of 59 female authors based on citation frequency. The second stage zeroes in on the most prolific among these female authors, narrowing down to 18 individuals recognized for their significant contributions. This study meticulously examines the gender of authors and their distribution across publications, paying particular attention to the positions held by

female authors in the authorship order, which serves as an indicator of their leadership and influence within the field. This approach sheds light on collaboration patterns and leadership roles, aiming to offer a comprehensive understanding of women's roles and contributions in the digital Islamic literature. Furthermore, it explores the broader discourse on gender issues within digital Islamic research, highlighting the acknowledgment and valuation of women's contributions in this scholarly domain.

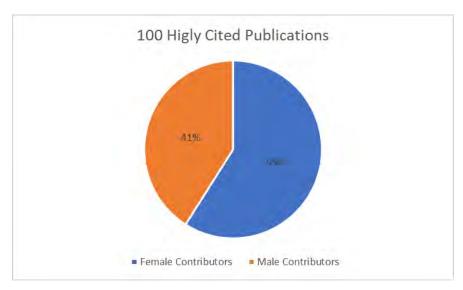


Figure 12. Women's representation in the top 100 most cited papers

Table 5. Top 59 Female Authors by Number of Citations

Authors	Female Authors	Title Yo	ear So	ource title	Cited by
Wersal L. (1995)	Wersal, Lisa	ISLAM AND ENVIRONMENTAL ETHICS: TRADITION RESPONDS TO CONTEMPORARY CHALLENGES	1995	Zygon®	31
Stowasser B. (2001)	Stowasser, Barbara	Old shaykhs, young women, and the internet: The rewriting of women's political rights in Islam	2001	Muslim World	21
Inhorn M.C. (2003)	Inhorn, Marcia C.	Global infertility and the globalization of new reproductive technologies: Illustrations from Egypt	2003	Social Science and Medicine	206
Mamadouh V. (2003)	Mamadouh, Virginie	11 September and popular geopolitics: A study of websites run for and by Dutch Morrocans	2003	Geopolitics	27
Inhorn M.C. (2004)	Inhorn, Marcia C.	Middle Eastern masculinities in the age of new reproductive technologies: Male infertility and stigma in Egypt and Lebanon	2004	Medical Anthropology Quarterly	136
Kosnick K. (2004)	Kosnick, Kira	'Speaking in one's own voice': Representational strategies of Alevi Turkish migrants on open- access television in Berlin	2004	Journal of Ethnic and Migration Studies	37
Fullwiley D. (2004)	Fullwiley, Duana	Discriminate biopower and everyday biopolitics: Views on sickle cell testing in Dakar	2004	Medical Anthropology: Cross Cultural Studies i Health and Illness	
Cohrs J.C.; Moschner B.; Macs J.; Kielmann S. (Cohrs et al., 2005)	Moschner, Barbara	The motivational bases of right- wing authoritarianism and social dominance orientation: Relations to values and attitudes in the aftermath of September 11, 2001	2005	Personality and Social Psychology Bulletin	187

Abdul Karim N.S.; Hazmi N.R. (2005)	Abdul Karim, Nor Shahriza; Hazmi, Norzelatun Rodhiah	Assessing Islamic information quality on the internet: A case of information about Hadith	2005	Malaysian Journal of Library and Information Science	27
Inhorn M.C. (2006)	Inhorn, Marcia C.	"He won't be my son": Middle Eastern Muslim men's discourses of adoption and gamete donation Promises of (im)mediate	2006	Medical Anthropology Quarterly	112
Schulz D.E. (2006)	Schulz, Dorothea E.	salvation: Islam, broadcast media, and the remaking of religious experience in Mali	2006	American Ethnologist	109
Newcomb R. (2006)	Newcomb, Rachel	Gendering the city, gendering the nation: Contesting urban space in Fes, Morocco	2006	City and Society	27
Toft M.D. (2007)	Toft, Monica Duffy Hashim, Noor	Getting religion? The puzzling case of Islam and civil war	2007	International Security	259
Hashim N.H.; Murphy J.; Hashim N.M. (Hashim et al., 2007)	Hazarina; Hashim, Nazlida Muhamad	Islam and online imagery on malaysian tourist destination websites	2007	Journal of Computer- Mediated Communication	73
Akou H.M. (2007)	Akou, Heather Marie	Building a new "world fashion": Islamic dress in the twenty-first century	2007	Fashion Theory - Journal of Dress Body and Culture	38
Raiya H.A.; Pargament K.; Mahoney A.; Stein C. (Abu Raiya et al., 2008)	Mahoney, Annette; Stein, Catherine	A psychological measure of islamic religiousness: Development and evidence for reliability and validity	2008	International Journal for the Psychology of Religion	212
Ho S.S.; Lee W.; Hameed S.S. (Ho et al., 2008)	Ho, Shirley S.; Lee, Waipeng; Hameed, Shahiraa Sahul	Muslim surfers on the internet: Using the theory of planned behaviour to examine the factors influencing engagement in online religious activities	2008	New Media and Society	51
Wyche S.P.; Caine K.E.; Davison B.; Arteaga M.; Grinter R.E. (Wyche et al., 2008)	Wyche, Susan P.; Caine, Kelly E.; Grinter, Rebecca E.	Sun dial: Exploring technospiritual design through a mobile islamic call to prayer application	2008	Conference on Human Factors in Computing Systems - Proceedings	34
van Zoonen L.; Vis F.; Mihelj S.(Van Zoonen et al., 2010)	van Zoonen, Liesbet; Vis, Farida; Mihelj, Sabina	Performing citizenship on YouTube: Activism, satire and online debate around the anti-Islam video Fitna	2010	Critical Discourse Studies	104
Akou H.M. (Akou, 2010)	Akou, Heather Marie	Interpreting Islam through the Internet: Making sense of hijab	2010	Contemporary Islam	28
Piela A. (Piela, 2010)	Piela, Anna	Muslim women's online discussions of gender relations in Islam	2010	Journal of Muslim Minority Affairs	25
Bryant L.D.; Ahmed S.; Ahmed M.; Jafri H.; Raashid Y. (Bryant et al., 2011)	Ahmed, Shenaz	'All is done by Allah'. Understandings of Down syndrome and prenatal testing in Pakistan Mutuality and immediacy	2011	Social Science and Medicine	36
Clarke M.; Inhorn M.C. (Clarke & Inhorn, 2011)	Inhorn, Marcia C.	Mutuality and immediacy between marja and muqallid: Evidence from male in vitro fertilization patients in shii lebanon	2011	International Journal of Middle East Studies	25
Akhter W.; Abassi A.S.; Umar S. (Akhter et al., 2011)	Umar, Sadia	Ethical issues in advertising in pakistan: An islamic perspective	2011	World Applied Sciences Journal	23

Mihelj S.; van Zoonen L.; Vis F. (Mihelj et al., 2011)	Mihelj, Sabina; van Zoonen, Liesbet; Vis, Farida	Cosmopolitan communication online: YouTube responses to the anti-Islam film Fitna	2011	British Journal of Sociology	21
Fekete L. (Fekete, 2012)	Fekete, Liz	The muslim conspiracy theory and the oslo massacre	2012	Race and Class	62
Salamandra C. (Salamandra, 2012)	Salamandra, Christa	The Muhannad effect: Media panic, melodrama, and the Arab female gaze	2012	Anthropological Quarterly	32
Afrianty D. (Afrianty, 2012)	Afrianty, Dina	Islamic education and youth extremism in Indonesia	2012	Journal of Policing, Intelligence and Counter Terrorism	29
Halverson J.R.; Way A.K. (Halverson & Way, 2012)	Way, Amy K.	The curious case of Colleen LaRose: Social margins, new media, and online radicalization	2012	Media, War and Conflict	23
Hamayotsu K. (Hamayotsu, 2013)	Hamayotsu, Kikue	The Limits of Civil Society in Democratic Indonesia: Media Freedom and Religious Intolerance	2013	Journal of Contemporary Asia	31
Nisa E.F. (Nisa, 2013)	Nisa, Eva F.	The internet subculture of Indonesian face-veiled women	2013	International Journal of Cultural Studies 2013 5th International	30
Lubis M.; Kartiwi M. (Lubis & Kartiwi, 2013)	Kartiwi, Mira	Privacy and trust in the Islamic perspective: Implication of the digital age	2013	Conference on Information and Communication Technology for the Muslim World, ICT4M 2013	23
Sreberny A. (Sreberny, 2015)	Sreberny, Annabelle	Women's Digital Activism in a Changing Middle East Uncovering modesty: Dejabis and	2015	International Journal of Middle East Studies	24
Lewis R. (Lewis, 2015)	Lewis, Reina	dewigies expanding the parameters of the modest fashion blogosphere	2015	Fashion Theory - Journal of Dress Body and Culture	24
Abokhodair N.; Vieweg S. (Abokhodair & Vieweg, 2016)	Abokhodair, Norah; Vieweg, Sarah	Privacy & social media in the context of the Arab Gulf	2016	DIS 2016 - Proceedings of the 2016 ACM Conference on Designing Interactive Systems: Fuse	98
Johnson N.F.; Zheng M.; Vorobyeva Y.; Gabriel A.; Qi H.; Velasquez N.; Manrique P.; Johnson D.; Restrepo E.; Song C.; Wuch J. 2016)	Vorobyeva, Y.	New online ecology of adversarial aggregates: ISIS and beyond	2016	Science	84
et al., 2016) Afriana J.; Permanasari A.; Fitriani A. (Afriana et al., 2016)	Afriana, J.; Permanasari, A.; Fitriani, A.	Project based learning integrated to stem to enhance elementary school's students' scientific literacy	2016	Jurnal Pendidikan IPA Indonesia	70
Magdy W.; Darwish K.; Abokhodair N.; Rahimi A.; Baldwin T. (Magdy et al., 2016)	Abokhodair, Norah	#ISISisNotIslam or #DeportAllMuslims? Predicting unspoken views	2016	WebSci 2016 - Proceedings of the 2016 ACM Web Science Conference	49
Aguilera-Carnerero C.; Azeez A.H. (Aguilera-Carnerero & Azeez, 2016)	Aguilera- Carnerero, Carmen	Islamonausea, not islamophobia: The many faces of cyber hate speech	2016	Journal of Arab and Muslim Media Research	34

Abokhodair N.; Abbar S.; Vieweg S.; Mejova Y. (Abokhodair et al., 2016)	Abokhodair, Norah; Abbar, Sofiane; Vieweg, Sarah; Mejova, Yelena	Privacy and twitter in Qatar: Traditional values in the digital world	2016	WebSci 2016 - Proceedings of the 2016 ACM Web Science Conference	26
Benigni M.C.; Joseph K.; Carley K.M. (Benigni et al., 2017)	Carley, Kathleen M.	Online extremism and the communities that sustain it: Detecting the ISIS supporting community on Twitter	2017	PLoS ONE	82
Horsti K. (Horsti, 2017)	Horsti, Karina	Digital Islamophobia: The Swedish woman as a figure of pure and dangerous whiteness	2017	New Media and Society	51
Walter B.F. (Walter, 2017)	Walter, Barbara F.	The New New Civil Wars	2017	Annual Review of Political Science	50
Abokhodair N.; Hodges A.; Vieweg S. (Abokhodair et al., 2017)	Abokhodair, Norah; Vieweg, Sarah	Photo sharing in the Arab gulf: Expressing the collective and autonomous selves	2017	Proceedings of the ACM Conference on Computer Supported Cooperative Work, CSCW	33
da Silva R.; Crilley R. (Da Silva & Crilley, 2017)	da Silva, Raquel	"Talk about terror in our back gardens": an analysis of online comments about British foreign fighters in Syria	2017	Critical Studies on Terrorism	25
Evolvi G. (Evolvi, 2017)	Evolvi, Giulia	Hybrid Muslim identities in digital space: The Italian blog Yalla Creative and Lucrative Dawa: The	2017	Social Compass	22
Nisa E.F. (Nisa, 2018a)	Nisa, Eva F.	Visual Culture of Instagram amongst Female Muslim Youth in Indonesia	2018	Asiascape: Digital Asia	61
Evolvi G. (Nisa, 2018a)	Evolvi, Giulia	Hate in a tweet: Exploring internet-based islamophobic discourses	2018	Religions	42
Nisa E.F. (Nisa, 2018b)	Nisa, Eva F.	Social media and the birth of an Islamic social movement: ODOJ (One Day One Juz) in contemporary Indonesia	2018	Indonesia and the Malay World	35
Baulch E.; Pramiyanti A. (Pramiyanti & Baulch, 2018)	Baulch, Emma; Pramiyanti, Alila	Hijabers on instagram: Using visual social media to construct the ideal muslim woman	2018	Social Media and Society	33
Husein F.; Slama M. (Husein & Slama, 2018)	Husein, Fatimah; Slama, Martin	Online piety and its discontent: revisiting Islamic anxieties on Indonesian social media	2018	Indonesia and the Malay World	27
Dynel M.; Poppi F.I.M. (Dynel & Poppi, 2018)	Dynel, Marta	In tragoedia risus: Analysis of dark humour in post-terrorist attack discourse	2018	Discourse and Communication	25
Klein O.; Muis J. (Klein & Muis, 2019)	Klein, Ofra	Online discontent: comparing Western European far-right groups on Facebook	2019	European Societies	56
Asongu S.A.; Nwachukwu J.C.; Pyke C. (Asongu et al., 2019)	Nwachukwu, Jacinta C.	The Comparative Economics of ICT, Environmental Degradation and Inclusive Human Development in Sub-Saharan Africa	2019	Social Indicators Research	46
Ibtasam S.; Razaq L.; Ayub M.; Webster J.R.; Ahmed S.I.; Anderson R. (Ibtasam et al., 2019)	Ibtasam, Samia; Razaq, Lubna; Ayub, Maryam; Webster, Jennifer R.	"My cousin bought the phone for me. I never go to mobile shops.": The role of family in women's technological inclusion in Islamic culture	2019	Proceedings of the ACM on Human-Computer Interaction	35
Nisa E.F. (Nisa, 2019)	Nisa, Eva F.	Muslim Women in Contemporary Indonesia: Online Conflicting Narratives behind the Women	2019	Asian Studies Review	22

# Ulama Congress

Salinas E.; Pradell T.; Molera J. (Salinas et al., 2019)	Salinas, Elena; Pradell, Trinitat ; Molera, Judit	Glaze production at an early Islamic workshop in al-Andalus	2019	Archaeological and Anthropological Sciences	21
Aljarah I.; Habib M.; Hijazi N.; Faris H.; Qaddoura R.; Hammo B.; Abushariah M.; Alfawareh M. (Aljarah et al., 2021)	Habib, Maria; Qaddoura, Raneem	Intelligent detection of hate speech in Arabic social network: A machine learning approach	2021	Journal of Information Science	51

Table 6. 18 Top Female Authors by Productivity and Citation

Female Author	Title	Year	Source title	Cited	T. Article
	Global infertility and the globalization of new reproductive technologies: Illustrations from Egypt	2003	Social Science and Medicine	206	
	Middle Eastern masculinities in the age of new reproductive technologies: Male infertility and stigma in Egypt and Lebanon	2004	Medical Anthropology Quarterly	136	
	"He won't be my son": Middle Eastern Muslim men's discourses of adoption and gamete donation	2006	Medical Anthropology Quarterly	112	
Inhorn, Marcia C.	Mutuality and immediacy between marja and muqallid: Evidence from male in vitro fertilization patients in shii lebanon	2011	International Journal of Middle East Studies	25	6
	Medical Cosmopolitanism in Global Dubai: A Twenty-first-century Transnational Intracytoplasmic Sperm Injection (ICSI) Depot	2017	Medical Anthropology Quarterly	9	
	Abrahamic traditions and egg freezing: Religious Women's experiences in local moral worlds	2020	Social Science and Medicine	8	
	Performing citizenship on YouTube: Activism, satire and online debate around the anti-Islam video Fitna	2010	Critical Discourse Studies	104	
van Zoonen, Liesbet	Cosmopolitan communication online: YouTube responses to the anti-Islam film Fitna	2011	British Journal of Sociology	21	3
	How funny can Islam controversies be? Comedians defending their faiths on YouTube	2013	Television and New Media	7	
	Performing citizenship on YouTube: Activism, satire and online debate around the anti-Islam video Fitna	2010	Critical Discourse Studies	104	2
Vis, Farida	Cosmopolitan communication online: YouTube responses to the anti-Islam film Fitna	2011	British Journal of Sociology	21	2
	Performing citizenship on YouTube: Activism, satire and online debate around the anti-Islam video Fitna	2010	Critical Discourse Studies	104	
Mihelj, Sabina	Cosmopolitan communication online: YouTube responses to the anti-Islam film Fitna	2011	British Journal of Sociology	21	2
Abokhodair, Norah	Privacy & social media in the context of the Arab Gulf	2016	DIS 2016 - Proceedings of the 2016 ACM Conference on Designing Interactive Systems: Fuse	98	6

	#ISISisNotIslam or #DeportAllMuslims? Predicting unspoken views	2016	Proceedings of the 2016 ACM Web Science Conference	49	
	Photo sharing in the Arab gulf: Expressing the collective and autonomous selves	2017	Proceedings of the ACM Conference on Computer Supported Cooperative Work, CSCW	33	
	Privacy and twitter in Qatar: Traditional values in the digital world	2016	WebSci 2016 - Proceedings of the 2016 ACM Web Science Conference	26	
	"Against marrying a stranger:" Marital matchmaking technologies in Saudi Arabia	2017	DIS 2017 - Proceedings of the 2017 ACM Conference on Designing Interactive Systems	20	
	Holy Tweets: Exploring the Sharing of Quran on Twitter	2020	Proceedings of the ACM on Human-Computer Interaction	7	
	Privacy & social media in the context of the Arab Gulf	2016	DIS 2016 - Proceedings of the 2016 ACM Conference on Designing Interactive Systems: Fuse	98	
Vieweg, Sarah	Photo sharing in the Arab gulf: Expressing the collective and autonomous selves	2017	Proceedings of the ACM Conference on Computer Supported Cooperative Work, CSCW	33	3
	Privacy and twitter in Qatar: Traditional values in the digital world	2016	WebSci 2016 - Proceedings of the 2016 ACM Web Science Conference	26	
	Creative and Lucrative Dawa: The Visual Culture of Instagram amongst Female Muslim Youth in Indonesia	2018	Asiascape: Digital Asia	61	
	Social media and the birth of an Islamic social movement: ODOJ (One Day One Juz) in contemporary Indonesia	2018	Indonesia and the Malay World	35	
Nisa, Eva F.	The internet subculture of Indonesian face- veiled women	2013	International Journal of Cultural Studies	30	5
	Muslim Women in Contemporary Indonesia: Online Conflicting Narratives behind the Women Ulama Congress	2019	Asian Studies Review	22	
	Internet and Muslim Women	2021	Handbook of Contemporary Islam and Muslim Lives	0	
	Hate in a tweet: Exploring internet-based islamophobic discourses	2018	Religions	42	
	Hybrid Muslim identities in digital space: The Italian blog Yalla	2017	Social Compass	22	
	Emotional politics, islamophobic tweets: The hashtags #Brexit and #chiudiamoiporti	2019	Partecipazione e Conflitto	8	
Evolvi, Giulia	The veil and its materiality: Muslim women's digital narratives about the burkini ban	2019	Journal of Contemporary Religion	8	6
	Introduction: Islam, space, and the internet	2021	Journal of Religion, Media and Digital Culture	4	
	Likes, comments, and follow requests: The instagram user experiences of young Muslim women in the Netherlands	2021	Journal of Religion, Media and Digital Culture	2	

WebSci 2016 -

Akou, Heather	Building a new "world fashion": Islamic dress in the twenty-first century	2007	Fashion Theory - Journal of Dress Body and Culture	38	2
Marie	Interpreting Islam through the Internet: Making sense of hijab	2010	Contemporary Islam	28	-
Ibtasam, Samia	"My cousin bought the phone for me. I never go to mobile shops.": The role of family in women's technological inclusion in Islamic culture	2019	Proceedings of the ACM on Human-Computer Interaction	35	2
	For God's sake! Considering Religious Beliefs in HCI Research: A Case of Islamic HCI	2021	Conference on Human Factors in Computing Systems - Proceedings	9	
Paulch Emma	Hijabers on instagram: Using visual social media to construct the ideal muslim woman	2018	Social Media and Society	33	2
Baulch, Emma	Beyond the Middle Classes, Beyond New Media: The Politics of Islamic Consumerism in Indonesia	2024	Asian Studies Review	0	2
Dunani anti Alila	Hijabers on instagram: Using visual social media to construct the ideal muslim woman	2018	Social Media and Society	33	2
Pramiyanti, Alila	Hijabers on Instagram: Using Visual Social Media to Construct the Ideal Muslim Woman	2018	Social Media and Society	27	2
	Accelerating Islamic charities in Indonesia: zakat, sedekah and the immediacy of social media	2020	South East Asia Research	28	
Slama, Martin	Online piety and its discontent: revisiting Islamic anxieties on Indonesian social media	2018	Indonesia and the Malay World	27	3
	Imagining indonesian islam as a center: New mediations and old concepts of power	2020	Archiv Orientalni	4	
	Muslim women's online discussions of gender relations in Islam	2010	Journal of Muslim Minority Affairs	25	
Piela, Anna	How do Muslim women who wear the niqab interact with others online? A case study of a profile on a photo-sharing website	2017	New Media and Society	7	3
	Online Islamic Spaces as Communities of Practice for Female Muslim Converts Who Wear the Nigab	2015	Hawwa	4	
Cuala a uni.	Women's Digital Activism in a Changing Middle East	2015	International Journal of Middle East Studies	24	
Sreberny, Annabelle	The internet in Iran: The battle over an emerging virtual public sphere	2010	Internationalizing Internet Studies: Beyond Anglophone Paradigms	3	2
	Glaze production at an early Islamic workshop in al-Andalus	2019	Archaeological and Anthropological Sciences	21	
Salinas, Elena	An early example of glaze technology diffusion in North Africa: The Islamic workshop of Tahert (central Maghreb, Algeria)	2023	Journal of Archaeological Science: Reports	0	2
	Glaze production at an early Islamic workshop in al-Andalus	2019	Archaeological and Anthropological Sciences	21	
Pradell, Trinitat	An early example of glaze technology diffusion in North Africa: The Islamic workshop of Tahert (central Maghreb, Algeria)	2023	Journal of Archaeological Science: Reports	0	2
	Performing citizenship on YouTube: Activism, satire and online debate around the anti-Islam video Fitna	2010	Critical Discourse Studies	104	
Mihelj, Sabina	Cosmopolitan communication online: YouTube responses to the anti-Islam film	2011	British Journal of	21	2

Figure 12, Table 5, and Table 6 present a comprehensive analysis of the role and contributions of female authors in digital Islamic literature, highlighting their significant impact across various disciplines such as social sciences, medical anthropology, and geopolitics. It shows the diversity of topics covered by these authors, including environmental ethics, women's political rights, and the implications of new reproductive technologies in Middle Eastern societies. This research emphasizes the importance of collaboration among female scholars and the high level of recognition they receive, as evidenced by citations. Notably, Marcia C. Inhorn stands out for her contribution to medical anthropology and reproductive technology. This paper also identifies emerging themes in digital Islamic literature, such as the expression of Islamic identity through social media (Abokhodair & Vieweg, 2016), the intersection of technology with religious practice, and evolving gender dynamics in Muslim societies (Clarke & Inhorn, 2011; Inhorn, 2003, 2004, 2006; Stowasser, 2001). This analysis challenges existing perceptions of gender bias in Islamic studies and the digital humanities, underscoring the vital role female authors play in advancing the discourse on Islam and digital culture (Clarke & Inhorn, 2011; Inhorn, 2003, 2004, 2006).

An analysis of the most prolific female writers in the digital Islamic literature reveals a dynamic and diverse field. Their contributions not only enrich the academic world but also provide deep insights into the complexities of digital Islam and gender dynamics.

# Most Cited References in Digital Islam Literature

This study uses bibliometric indicators, such as the most cited references by the author and the most cited sources and references, to analyze the theoretical framework that dominates studies on the interaction between Islam and digital technology.

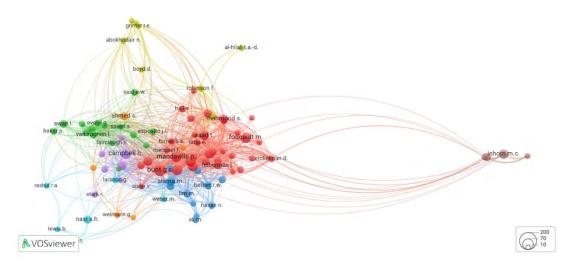


Figure 13. Most cited Reference by Author in Digital Islam

<u>Figure 13</u> shows the names of the authors of the documents referenced in the 1060 articles analyzed in this study. The table below provides a detailed summary of the 15 most influential authors.

Authors	Citation
Bunt G.R.	91
Foucault M.	71
Roy O.	71
Campbell H.	66

Table 7. 15 Most Influental References Authors

Mandaville P.	66
Eickelman D.F.	64
Anderson J.W.	63
Hirschkind C.	60
Asad T.	55
Inhorn M.C.	55
Bunt G.	53
Campbell H.A.	53
Slama M.	50
Mahmood S.	48
Ahmed S.	42

<u>Table 7</u> shows the authors who made the most significant contributions to the 1060 pieces of literature examining the relationship between Islam and digital technology based on the number of citations to their work in the documents analyzed.

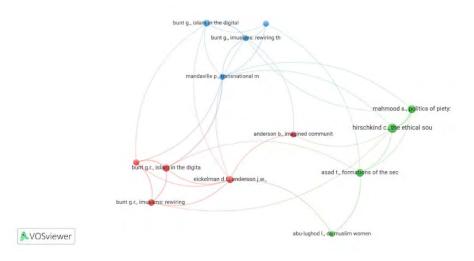
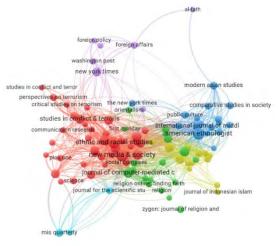


Figure 14. Most Cited References in Digital Islam

Table 8. 15 Most Cited References in Digital Islam

Authors	Article	Citations	
	The Ethical Soundscape: Cassette Sermons and Islamic		
Hirschkind C. (2009)	Counterpublics	26	
Mahmood S. (2012)	Politics of Piety: The Islamic Revival and the Feminist Subject	19	
Asad T. (2010)	Formations of the Secular: Christianity, Islam, Modernity Islam in the Digital Age: E-Jihad, Online Fatwas and Cyber Islamic	18	
Bunt G.R. (2003) Eickelman D.F.,	Environments	28	
Anderson J.W. (2003)	New Media in the Muslim World: The Emerging Public Sphere	14	
Bunt G.R. (2009)	iMuslims: Rewiring the House of Islam	23	
	Virtually Islamic: Computer-Mediated Communication and		
Bunt G.R. (2000)	Cyber Islamic Environments	11	
Mandaville P. (2006)	Transnational Muslim Politics: Reimagining the Umma	11	
Abu-Lughod L. (2015)	Do Muslim Women Need Saving?	10	
	Imagined Communities: Reflections on the Origin and Spread of		
Anderson B. (1991)	Nationalism	10	
Roy O. (2004)	Globalized Islam: The Search for a New Ummah	10	

<u>Table 8</u> and <u>Figure 14</u> show the significant works frequently cited in the literature on the correlation between Islam and technology, emphasizing their impact on shaping academic comprehension of the topic.





**♣VOSviewer** 

Table 9. 15 most cited sources

Figure 15. Most Cited Sources

Sources	Citation
American Ethnologist	94
Ethnic and Racial Studies	93
New Media & Society	103
Contemporary Islam	62
Journal of Communication	73
Journal of Computer-Mediated Communication	64
Journal of Ethnic and Migration Studies	63
New Media in the Muslim World: The Emerging Public Sphere	63
The New York Times	56
Information, Communication & Society	56
Social media + Society	46
International Journal of Communication	46
Computers in Human Behavior	47
The Muslim World	49
Indonesia and the Malay World	49

The interaction between Islam and digital technology is a dynamic and interdisciplinary field of study, as observed from the analysis of various data sources in Figure 15 and Table 9. Multiple disciplines such as anthropology, sociology, and media studies contribute to this research by offering diverse perspectives on the topic. The most-cited references indicate a significant focus on the influence of new media and communication technologies on Muslim life. Scholars such as Bunt and Hirschkind are recognized for their influential contributions to the field. Several journals, including "American Ethnologist," "New Media & Society," and "Contemporary Islam," Contemporary Islam, are important sources for publishing current and influential studies on this subject. Research in this area considers both global and local contexts, recognizing the unique social, cultural, and political dynamics at play. Critical topics that are frequently explored include identity, online Muslim communities, religious practices in the digital age, and debates on religious authority in digital

spaces. Overall, this study combines theoretical analysis with empirical case studies to understand the impact of technology on the social and spiritual dimensions of Muslims' lives.

### **Discussion**

# What a Digital Islam?

This bibliometric analysis has revealed some important findings in the form of influential authors, the most impactful articles, topic trends, topic evolution, and the most cited references among authors who have written articles on digital Islam. The main findings described above can be the basis for formulating what and how this concept of digital Islam is actually. In this discussion, I will present in more detail, based on the results of bibliometric research, the question of what digital Islam is.

Before discussing the topic of digital Islam, two important terms in the discourse of Islam in the digital age often appear as the basis of writers' thoughts: digital religion and the term digital ummah or cyber ummah. Therefore, it is important to first position our understanding of the two terms.

Digital religion encompasses the intersection, transformation, and coexistence of religious practices with digital technologies and cultures. It includes the expression, experience, and negotiation of religious beliefs, practices, communities, and identities in digital spaces, such as social media, websites, online forums, and virtual reality environments. The field studies how online and offline religious activities are interconnected and how digital technologies influence traditional religious practices (Campbell and Evolvi 2020). It also explores the emergence of new forms of spirituality and religious engagement supported by the digital world (Campbell & Evolvi, 2020). The study of digital religion also focuses on the impact of digital media and the Internet on how religious adherents practice their faith, interact with religious communities, and integrate their religion with digital culture, thereby changing the landscape of contemporary religiosity (Campbell, 2017).

The concept of "Cyber Ummah" or "Virtual Ummah" refers to the Islamic community in cyberspace that emerged with the advent of the Internet in the Muslim world (Khamis, 2018). Cyber Ummah represents an online community that transcends geographical, ethnic, and cultural boundaries (Khamis 2018). The Internet enables global communication among Muslims and interactions between different groups of Muslims and non-Muslims (Khamis 2018). It creates an egalitarian and interactive virtual community that allows for the formation of new identities and resistance in the online Islamic discourse. Cyber Ummah has implications for the creation of diverse identities and resistance, shaping various Islamic discourses and sites in cyberspace (Khamis 2018). Online sites and platforms function as virtual marketplaces in which ideas and concepts about Islam and Muslims are exchanged. Muslims use online resources to access mainstream and alternative interpretations of Islamic doctrines and scriptures. Overall, the Cyber Ummah is a phenomenon that reflects the changes in Muslim societies online and offline and plays an important role in shaping the religious, social, and cultural aspects of Muslim communities in the digital age.

First, let us look at one of the bibliometric findings: in 1983 and 1993, there were two papers with the highest citation value. The papers were by Rapoport (1983) and Robinson (1993), Rapoport's work, in this case, criticizes the definition of the concept of "modern terrorism" that is only associated with an increase in the number of incidents, the amount of damage, and the transnational nature of terrorist attacks today. He emphasized the importance of considering historical roots and early experiences in understanding terrorism (Rapoport, 1983). This research shows that the definition of modern terrorism is related not only to technological changes but also to significant political events that influence the motivations and actions of terrorist groups

(Rapoport, 1983). Furthermore, Robinson's work discusses how print technology affected religious change in Islam in his paper from 1993. He explains that Muslims' negative responses to printing are deeply rooted in the system of knowledge transmission in Islamic societies (Robinson, 1993). Printing challenged the traditional method of knowledge transmission from person to person, which is central to Islamic authority and belief in knowledge (Robinson, 1993). Muslims hesitated to adopt the printing press until they perceived benefits that outweighed the potential harm they could cause (Robinson 1993). The adoption of printing in Muslim societies is often driven by the belief that it is a necessary tool for maintaining faith (Robinson, 1993).

These two works do not directly state an Islamic definition of digital Islam. However, as early works that discussed the relationship between technology and Islam, these works need to be considered. Digital Islam can be defined by several important indicators (Rapoport, 1983; Robinson, 1993). The first is the interaction between history and technology, where historical events and technological developments influence religious practices and understanding in Islam. Second, the transformation in knowledge transmission, where the way knowledge is delivered and received, changes from traditional face-to-face to print and digital media. Third, sociopolitical dynamics, in which political and social events shape responses to technology and definitions of religious practice. Finally, adaptation and resistance to innovation, in which Muslims respond to new technologies by weighing benefits and potential harm.

Through these indicators, Digital Islam has become a complex phenomenon involving interactions between tradition, technology, and socio-political factors. This phenomenon includes changes in knowledge transmission, adaptation to innovation, and dynamics of religious practice.

Through bibliometric analysis, I also found that several articles and authors have the most impact on the discussion of digital Islam. Norah Abokhodair, Francis Robinson, Sarah Vieweg, Eva F. Nisa, Bryan S. Turner, Anton Törnberg, Jamie Cleland, and Patrick Eisenlohr are the most influential authors based on bibliometric analysis. Furthermore, I conducted an in-depth review to identify key indicators in the articles of these researchers to identify some concepts related to digital Islam.

With respect to Digital Islam, an analysis of the research findings revealed several key aspects of digital Islam. First, the use of digital technology, especially social media, has changed the dissemination of religious information and formation of religious discourse among Muslim communities around the world. Individuals can now seek religious knowledge independently through the Internet, which challenges traditional religious authorities and digitally empowers them (Robinson 1993; Turner 2007).

In addition, the Internet has facilitated global connectivity and opened up spaces for international discussions and interpretations of Islam. This expansion challenges the authority of traditional Islamic scholars and allows for diverse interpretations and translations of Islam through digital platforms (Robinson, 1993).

Third, social media platforms can perpetuate negative stereotypes about Islam and Muslims, contributing to the (re)production of discursive power that influences the public's understanding of religion (Eickelman 2003).

Moreover, the use of sound reproduction technologies in religious practices and the sharing of religious content on digital platforms reflects contemporary adaptations in Islam, signaling the emergence of Digital Islam.

The use of technology in Muslim communities is influenced by traditional values and cultural expectations, particularly in terms of privacy and social media interactions. In addition, the role of Muslim women in digital spaces is significant. Women use and influence the digital space for religious, social, and political purposes, emphasizing the importance of gender in discussions on Digital Islam (Nisa, 2018b, 2018a, 2021).

In addition, the implementation and utilization of digital technologies in religious contexts, such as matchmaking technologies and sharing Quranic verses on Twitter, illustrate the potential of digital technologies to enhance religious communities and practices (Abokhodair et al., 2020).

To understand Digital Islam, it is necessary to consider the social, cultural, and political contexts in which Digital Islam exists. In the thematic analysis related to digital Islam, various themes have been identified, such as "terrorism," "Islamic state," and "jihad" being the main research focus, while underlying themes such as "Malaysia," "technology," and "culture" are recognized as important but less explored. The shift in topics from 2008 to 2021 reflects the use of technology in religious practices, theological debates, and exploration of religious identity. Social media, especially Instagram, has become a popular platform for sharing religious, political, and cultural perspectives and discussing issues such as Muslim identity and Islamophobia. There is also increasing emphasis on the intersection of Islam and technology, including gender issues and the representation of Muslim women. Traditional religious themes and new themes such as "bioethics" and "hajj" are also important. Sociopolitical issues such as "Islamophobia" and "nationalism" are also of concern.

Digital Islam can thus be defined as the integration of Islam with digital technology, which includes the use of digital platforms and social media to promote inclusivity, accessibility, and community building within the global Muslim community. This suggests a broadening of the scope of the discussion, in which Islamic studies are becoming more integrated with technology, adapting to contemporary debates, and engaging in various fields, thus expanding the scope of the discussion on Islam in the digital age.

# Digital Islam as a Specialization in Digital Religion Studies

Digital Islam is a specialized study of Islam's interactions with digital religion (Campbell, 2012; Campbell & Evolvi, 2020). It involves research on how Islamic practices and communities adapt in a digital context. This transformation has been influenced by the history and technological developments that have affected Islam. This study involves an in-depth exploration of the ways in which Islamic practices, beliefs, and communities are adapted and reconstructed in digital contexts. This phenomenon is reflected in various aspects ranging from the transformation of religious practices and the dissemination of information to the formation of communities that undergo significant changes due to adaptation and the dynamic interaction between tradition and technological innovation. This transformation is inseparable from the historical context and the evolution of technology that has influenced Islam, as emphasized by Rapoport and Robinson, who show how print technology was initially received with hesitation by Muslims but was eventually adopted because of its great benefits in maintaining faith.

# Digital Muslim and Digital Ummah

To further analyze digital Islam, it is important to acknowledge the contributions of various researchers who have deepened our understanding of the subject. Norah Abokhodair, Eva F. Nisa, Bryan S. Turner, and Anton Törnberg, for example, have explored aspects such as the representation of Islam on social media, the use of digital technologies in religious practices, and the social dynamics that arise from online interactions in Islamic contexts. These works help us understand

how digital technologies not only change religious practices but also shape discourse and identity within Muslim communities.

The term "digital Muslim" or "digital Ummah" refers to the online Muslim community, which is a manifestation of cyber Ummah (Khamis 2018). This concept highlights how Muslims, transcending geographical and cultural boundaries, use digital technologies to communicate, interact, and build communities. Digital Muslims are individuals whose religious practices are integrated into a digital context, while digital Ummah is the global community formed through these interactions. Important factors driving this concept include the use of social media for the dissemination of religious information, challenges to traditional religious authority through wider access to information, and formation of new identities and resistance in the digital space.

These studies highlight the impact of digital technologies on Islam and Muslims, focusing on four main areas: dissemination of religious information, community and identity building, adaptation and resistance to innovation, and gender roles. Digital technologies have revolutionized the dissemination of religious information, allowing Muslims to access a plethora of sources without relying on traditional intermediaries. This democratization of information challenges existing religious authority and fosters a broader space for interpretation and discussion. Furthermore, social media and online platforms facilitate the formation of global Muslim communities, enhancing the concept of a digital ummah that promotes solidarity and a shared identity across geographic boundaries. This paper also examines the varied responses of Muslims to technological innovations, highlighting the balance between preserving tradition and embracing modernity. Additionally, it underscores the significance of gender, particularly the role of women in using digital platforms for education, social engagement, and political activism, which challenge traditional narratives and enable self-representation. By integrating these aspects, this study provides a comprehensive understanding of the complex dynamics between Islam, its followers, and digital technology, illustrating how these interactions shape and sustain global Muslim communities in the digital age.

# Theoretical Frameworks in Digital Islam

This study aimed to understand the key theories and concepts that have shaped the field by identifying and analyzing the most cited documents and references in the literature. It also evaluates these theoretical frameworks to gain insights into how they explain the relationships between Islamic religious practices and the use and impact of digital technology. This study critically assesses the effectiveness and relevance of these theoretical approaches and suggests new directions for future research in this area.

As previously found, this study identified each of the 15 most-cited references, their sources, and authors. Some of the key concepts from these 15 references are as follows:

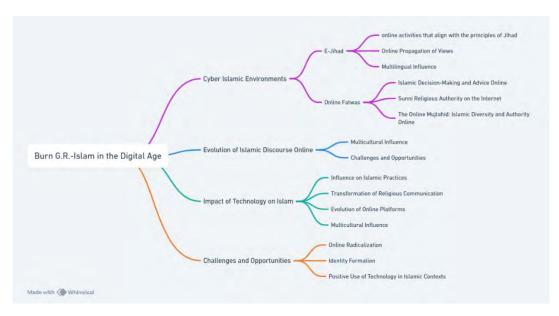


Figure 16. "Islam in the Digital Age" by Gary R. Bunt

As shown in Figure 16, Bunt (2003) examines the transformative role of technology, especially the Internet, in Muslim religious practices. This work introduces the concept of the Cyber Islamic Environment, which has facilitated new forms of religious expression, such as E-jihad and online fatwas. These developments allow for the wider dissemination of Islamic views and decision-making processes. The book also addresses the complexities of cultural mixing within online discourse, which presents opportunities for broadening the reach of traditional teachings and challenges to preserving religious authenticity. Furthermore, Bunt discussed the impact of technology on the expansion of Arabic culture and language, alongside concerns about online radicalization and identity formation. The author advocates constructive engagement with technology, emphasizing that innovation and adaptation are crucial for maintaining the essence of religious practices in the digital era.

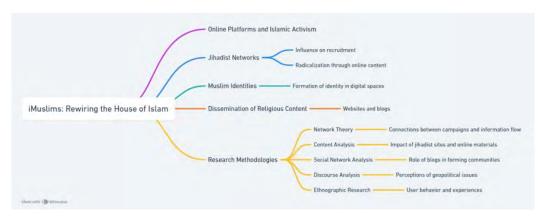


Figure 17. iMuslims: Rewiring the House of Islam by Gary R. Bunt

As shown In Figure 17, Bunt (2009) provides a comprehensive examination of the impact of online platforms on Islamic activism, jihadi networks, Muslim identity, and the spread of religious teaching. Using a multidisciplinary approach, Bunt explored the intricate dynamics of online Muslim communities. The book employs network theory to analyze the connections within Islamic campaigns and the distribution of information online; content analysis to assess the role of jihadi websites and materials in recruitment and radicalization; and social network analysis to explore the formation of Muslim networks and communities via blogs. Additionally, discourse analysis was

applied to understand how online narratives influence community perceptions of global events, while ethnographic research offers deep insights into the digital experiences, motivations, and behaviors of users. Through these methodologies, Bunt's work illuminates the complex interplay between Islam and technology, thus enhancing our understanding of the digital dimensions of religious life and identity in the contemporary world.

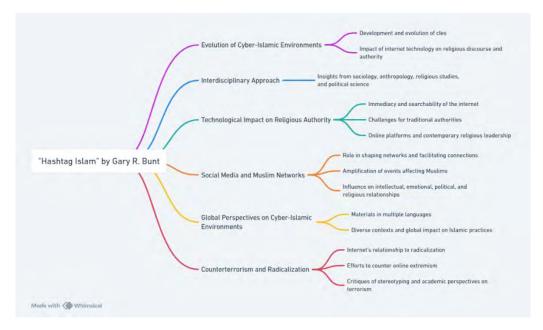


Figure 18. Hashtag Islam

Furthermore, as shown in Figure 18, Bunt (2018) discusses the development of cyber-Islamic environments (CIES) and the relationship between technology and Islamic practices. The book reviews several key themes and perspectives, including the evolution of CIES as influenced by developments in Internet technology and how it is changing religious discourse and authority in Islam. The author uses an interdisciplinary approach by drawing on insights from fields such as sociology, anthropology, religious studies, and political science, to understand the complex interactions between technology and Islam. One important theme addressed in this book is the impact of technology on Islamic religious authority online, including the challenges faced by traditional authorities in the digital age, and the role of online platforms in shaping contemporary understandings of religious leadership. The book also explores the role of social media in shaping Muslim networks and influencing relationships between Muslim individuals and communities in various contexts.



Figure 19. Campbell Theori of Digital Religion

The next expert who was also frequently cited by the authors in the analyzed articles was Heidi Campbell (2016). As Figure 19 shows, the concept often taken from Campbell is a digital religion. Exploration of the phenomenon of "Digital Religion" includes the study of how religion and new information communication technologies, especially the Internet, interact with each other. It examines how religious beliefs, practices, and communities manifest and transform in digital spaces, including online religious communities, virtual worship spaces, and religious rituals performed online (Campbell & Vitullo, 2016). Digital Religion encompasses various terms such as "cyber religion," "virtual religion," "network religion," and "internet religion," marking the field as an interdisciplinary one involving Religious Studies, Communication and Media Studies, Information Studies, and Sociology.

Researchers have explored the interconnections between online and offline religious realms, highlighting how traditional religious contexts blend with new digital contexts (Campbell 2012). In the Western context, "Digital Religion" has emerged as a way to discuss and study online religious practices that influence offline religious communities and institutions. The concept recognizes the unique influence of the Internet and digital technologies in shaping religious practices and beliefs as well as changing perceptions of religiosity in society. Digital Religious Studies is considered a subfield of broader disciplines, such as Internet Studies and Media, Culture and Religion Studies.

Research in this field was rooted in the mid-1990s, focusing on the use of the Internet by religious groups and its potential implications for religious beliefs and practices (Rapoport, 1983; Robinson, 1993). It also examines how religious groups move religious practices to the Internet, creating online communities and houses of worship, and conducting rituals online (Tsuria et al., 2017). Helland (2005; 2005) distinguishes between "religion online" versus "online religion," with "religion online" referring to information presented and controlled by traditionasl religious organizations or leaders, while "online religion" relates to religious innovation and collaboration that creates new understandings of religion through online environments.

Subsequent studies frequently cited in 1060 were spread across multiple authors. In contrast, the authors cited the work of Bunt and Campbell. Therefore, in this case, a focused summary of the most cited studies is presented in <u>Table 10</u>.

Table 10. Insight from other most cited references in Digital Islam

No.	Paper Title	Insight
1	The Ethical Soundscape: Cassette Sermons and Islamic Counterpublics	This book examines how cassette sermons became a powerful medium in Egypt for shaping public discussions on morality, demonstrating the role of new media in forming Islamic counterpublics.
2	Politics of Piety: The Islamic Revival and the Feminist Subject	Mahmood's work is a critical analysis of the Islamic revival movement in Egypt, focusing on women's participation. It challenges Western perceptions of agency and subjectivity, providing insights into the complex interplay between religion and gender.
3	Formations of the Secular: Christianity, Islam, Modernity	Asad explores the concept of secularism as it has evolved in Christian and Islamic contexts, questioning the assumptions of modernity and its impact on religious practices.
4	New Media in the Muslim World: The Emerging Public Sphere	This book discusses the transformative role of new media technologies in Islamic societies, highlighting how they have contributed to the emergence of a public sphere where traditional and modern values intersect.
5	Transnational Muslim Politics: Reimagining the Umma	Mandaville examines how Muslim politics transcends national boundaries, exploring the concept of the Umma (the global Muslim community) in the context of globalization and technological advances.
6	Do Muslim Women Need Saving?	Abu-Lughod critiques the Western narrative of rescuing Muslim women, arguing for a deeper understanding of cultural practices and the diverse experiences of women within Islamic societies.
7	Imagined Communities: Reflections on the Origin and Spread of Nationalism	Though not exclusively about the Islamic world, Anderson's seminal work on nationalism offers critical insights into how national identities are constructed, which is relevant to understanding Muslim identity and solidarity.
8	Globalized Islam: The Search for a New Ummah	Roy discusses the challenges and transformations within Islam in the context of globalization, focusing on the search for a new form of Muslim community that transcends traditional geographic and cultural boundaries.

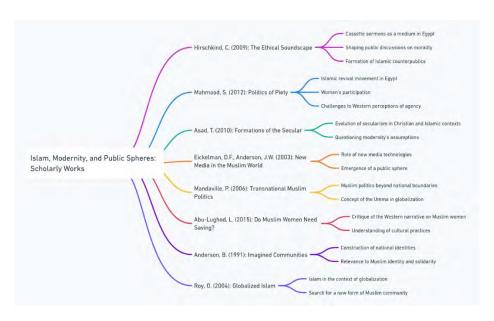


Figure 20. Mapping insight from other most cited references in Digital Islam

Figure 20 explores the dynamic role of digital platforms in shaping contemporary Islamic identities, practices, and communities, emphasizing their function as transformative public spaces. It highlights how digital spaces facilitate discussions of morality and ethics, challenge traditional boundaries, and enable the formation of new counterpublics within Islamic communities. Notably, this study addresses the impact of digital engagement on gender dynamics, offering perspectives on the resistance and reaffirmation of societal norms. It also delves into the intersection of secularism, modernity, and religion in digital contexts, enriching the discourse on Muslim societies' navigation of traditions and modernity. Furthermore, this study examines the concept of the Ummah in the digital age, focusing on how digital platforms redefine community boundaries and facilitate transnational connections. This collection of scholarly works provides a comprehensive overview of digital Islam, presenting it as a field in which traditional and modern elements intersect, highlighting the active role of digital spaces in reshaping Islamic identity, authority, and community in the 21st century.

Furthermore, based on the analysis of the study and the main insights from most references, including the theories used and taken in digital Islam references, the following theoretical framework is formulated in this research:

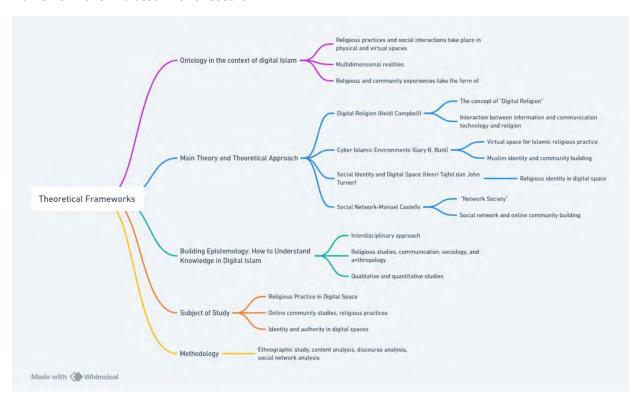


Figure 21. Theoretical Frameworks in Digital Islam

Figure 21 outlines the structure of thought in the realm of Digital Islam, delineating it into four principal branches and their respective subcategories. The first branch, Ontology in the Context of Digital Islam, examines the complex reality of religious practices within both tangible and virtual realms by focusing on community and religious experiences. The second branch discusses Major Theories and Theoretical Approaches, introducing concepts such as Heidi Campbell's digital religion and the Gary R. Bunt's Cyber Islamic Environments, alongside theories on social and digital identity and network societies, emphasize Muslim identity and community formation in digital spaces. Building Epistemology, the third branch adopts an interdisciplinary methodology incorporating religious studies, communication, sociology, and anthropology, utilizing both quantitative and qualitative research to delve into religious practices in digital settings. The final branch, Subjects of

Study, centers on methodological areas, including religious practices, online communities, and the concepts of identity and authority within digital environments, employing ethnographic studies, content analysis, discourse analysis, and social network analysis. This study serves as a comprehensive guide for researchers interested in understanding how Islam is practiced and manifested in digital contexts, highlighting the multidisciplinary nature of this research and the variety of methods required for a thorough investigation.

# Conclussion

This study presents three foundational insights into digital Islamic studies, addressing key questions regarding the nature of digital Islam, its theoretical framework, and the significant role of women. First, it positions digital Islam as a critical subfield of digital religion, highlighting the intersection of Islamic traditions and digital technologies. This intersection catalyzes transformative shifts in religious practices, community formations, and identity reconstructions in the digital sphere, challenging conventional paradigms and forging a new understanding of Islam in the digital age.

Moreover, the research articulates the concepts of 'digital Muslim' and 'digital ummah' as central to this field. The 'digital Muslim' refers to individuals whose Islamic practice and community engagement take place in digital environments, and embodies the broader concept of the 'digital Ummah' - a global online Muslim community that transcends traditional geographic and cultural boundaries. This global community exemplifies significant changes in how religious information is disseminated and how Muslims worldwide connect, share, and interact in the digital age. The synonymous use of digital Muslims and ummah in this study underscores the seamless integration of individual and collective Islamic identities in digital spaces, demonstrating the expansive reach and communal solidarity of Islam across the digital landscape.

This study delves into the theoretical frameworks that frame digital Islam, drawing on disciplines such as digital religious studies, sociology, and anthropology to construct a comprehensive analytical lens. By engaging with theories such as Heidi Campbell's "digital religion," Gary R. Bunt's "cyber-Islamic environments," and discussions of digital and social identity by Henri Tajfel, John Turner, and Manuel Castells' concept of "network societies," the research enriches our understanding of the socio-cultural and technological forces that shape the digital Muslim experience.

Significantly, women's empowerment and active participation in digital Islamic spaces have emerged as key findings that challenge traditional gender narratives. Women writers and scholars enrich the discourse, navigate, and influence the digital religious landscape through their contributions. The strategic use of digital platforms for education, socialization, and activism not only challenges established gender roles but also underscores women's empowerment and self-representation in the context of digital Islam.

In sum, the findings of this study highlight the transformative impact of digital Islam, characterized by the integration of tradition and digital innovation, the elucidation of multidisciplinary theoretical frameworks, and the dynamic engagement of women. By exploring the nature of digital Islam, the synonymous relationship between digital Muslims and Ummah, and the empowering role of women, this research significantly advances the field of action studies.

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# Penulis Mengirimkan Revisi

# **View Letter**

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# Social Sciences & Humanities Open

# Exploring the Intersection of Islam and Digital Technology: A Bibliometric Analysis --Manuscript Draft--

Manuscript Number:	SSHO-D-24-00472R1
Full Title:	Exploring the Intersection of Islam and Digital Technology: A Bibliometric Analysis
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Keywords:	Islam, digital religion, digital Islam, bibliometric analysis, women in digital Islam
Manuscript Region of Origin:	INDONESIA
Abstract:	This study aims to identify key developments and trends in digital Islamic studies, including influential authors and their contributions, patterns of collaboration, and the evolution of themes in the literature of the 1060 Scopus database from to 1969-2024. This study also examines the representation of women and the main theoretical frameworks in the field. Biblioshiny, R-Studio, VOSViewer, and N-Vivo were used for bibliometric and sentiment analyses. This study found that academic attention to Islam and digital technologies has increased since the early 2000s with a shift towards online platforms for religious expression and community building. The study also examines the role of key authors, such as Norah Abokhodair, Sarah Vieweg, Marcia C. Inhorn, Eva F. Nisa, Giulia Evolvi, Morgan Clarke, Patrick Eisenlohr and Emma Baulch. The analysis of trends in the digital Islamic literature shows an increasing integration of digital technologies in Islamic practice from 2008 to 2021, with a focus on social media and mobile applications for religious education and engagement. Since 2021, Instagram has become an important space for the expression and discussion of Islamic identity. The research examines digital Islam as a major area of digital religion, exploring the role of the 'digital Muslim' in the 'digital Ummah.' This study reveals how digital Islam blends conventional and modern techniques, employs a cross-disciplinary theoretical approach, and significantly includes women. These findings demonstrate that women are more visible in highly cited studies.
Response to Reviewers:	

#### Reviewer #1:

This abstract provides a fairly comprehensive overview of the content and objectives of the research carried out. However, there are several areas where this abstract could be improved or clarified:

- Does this research aim to identify specific trends, analyze the impact of digital technology on Islamic religious practices, or measure the adoption of digital technology by Muslim communities?
  - AGREE: The abstract has been revised to first present the objective of "identifying key developments and trends in digital Islamic studies, including influential authors and their contributions, patterns of collaboration, and the evolution of themes in the literature from 1060 Scopus databases from 1969-2024." But as an additional insight and according to the study's important authors, "The study also examines the representation of women and the main theoretical frameworks in the field."
- 2. It is not stated in detail how the bibliometric data was collected, including the search and analysis criteria used. In fact, I saw a lot of research results using the VOSviwer tool, while there were fewer results from biblioshiny.
  - In the abstract I have added a description that this research used two tools, namely Biblioshiny and VOSViewer for bibliometric analysis as follows "Biblioshiny, R-Studio, VOSViewer, and N-Vivo were used for bibliometric and sentiment analyses."
- 3. Does this research present new findings or identify gaps in existing research? Highlighting the contributions of this research will help clarify its importance and relevance.
  - This study adds the new finding that "This study finds that academic attention to Islam and digital technologies has increased since the early 2000s, with a shift towards online platforms for religious expression and community building. The study also examines the role of key authors, such as Norah Abokhodair, Sarah Vieweg, Marcia C. Inhorn, Eva F. Nisa, Giulia Evolvi, Morgan Clarke, Patrick Eisenlohr, and Emma Baulch. An analysis of trends in digital Islam literature shows an increasing integration of digital technologies in Islamic practice from 2008 to 2021, with a focus on social media and mobile applications for religious education and engagement. Since 2021, Instagram has become an important platform for the expression and discussion of Islamic identity. This research examines digital Islam as a key area of digital religion, exploring the role of 'digital Muslims' in the 'digital ummah'. This research reveals how digital Islam blends conventional and modern techniques, uses cross-disciplinary theoretical approaches, and significantly involves women. The findings show that women are more prevalent in widely cited studies."

This introduction provides a broad and detailed overview of the importance of digital Islam in Muslim societies and an understanding of the theoretical framework underlying research in this field. However, there are several areas where this introduction could be improved:

- 1. Although the introduction mentions a variety of approaches to defining "digital Islam," it would be better to provide a clearer definition. A clear definition will help readers better understand the scope of the research.
  - I have tried to define digital Islam, but there is no single definition of this concept. In this regard, I quote Garry Bunt's opinion in detail as follows: You can see this in the introduction section of line numbers 31-56 in the WORD file.

According to Gary R. Bunt (2009), the term "digital Islam," lacks a single clear definition and admits that it is unable to provide a precise explanation. Bunt acknowledges that the term can have varied interpretations, depending on an individual's perspective. He noted that there is no universally accepted definition of the term.

"It depends in part on one defines Islam, and whether elements within that definitionhave a digital edge. Digital Islam may be explicitly online, on a website, blog, YouTube Video, or, more recently, an entry on Twitter. It may be explicitly 'religious' in orientation, relating to specific practices and concepts associated with core Islamic values and precepts. However, the articulation of digital Islam may also relate to specific cultural and political causes, which may be implicitly 'Islamic' in orientation".

Gary Bunt's (2009) approach categorizes digital Islam into different aspects based on how it integrates with Islamic practices. These aspects include using digital platforms to disseminate religious teachings and information, utilizing social media and online forums for discussions related to Islam, and employing mobile applications for religious activities, such as prayer times and Quran recitation. Additionally, digital Islam is seen as a means of activism, in which digital platforms are utilized for political or social issues from an Islamic perspective. Finally, digital Islam in culture is classified as the integration of Islamic elements into the digital media. Bunt's approach demonstrates the adaptability of digital Islam to technology and its impact on the daily lives of Muslims worldwide, presenting opportunities for further investigation into the intersection of religion and technology (Bunt, 2009). Therefore, a strong theoretical foundation in digital Islamic studies is crucial for a deeper understanding of the implications of digital tools and platforms on Islamic practices and beliefs. Campbell (2017) and Chaudhary (2020) have addressed this issue by highlighting the importance of a theoretical approach to studying digital Islam and the significance of digital ethics in Islam. Both contributions emphasize the need for a blend of theoretical rigor and practical flexibility in the study of digital Islam, and the importance of ongoing research and dialogue in understanding digital transformation in Islam.

 While it is important to understand the significance of digital Islam, the introduction could be strengthened by explaining why this research is important or relevant in the current context.
 Mentioning the challenges or gaps in existing research that the study aims to fill will provide a stronger context.

I have added the reasons why this research is important in line number words 90-98 and 114-124 as follows:

When discussing digital Islam, several key aspects have yet to be fully explored. One of these is the lack of a single agreed-upon definition of digital Islam, which has led to a range of methodologies, approaches, and theories being employed to study this phenomenon. This diversity can be difficult for those unfamiliar with the issue to comprehend, particularly the Muslim community itself, which is the focus of the discussion. Another important factor to consider is the relationship between Islam and digital platforms, which can shed light on the cultural shifts that occur in society. It is worth noting that the impact of digital technology on religious behavior may be more pronounced in conservative and traditional environments than in more inclusive and open environments (Ibahrine, 2020).

As research in this field continues to advance, bibliometric analysis is a useful method for studying the discourse of adaptation and representation of Islam in the digital realm. This method helps to identify research gaps, trends, and the state of the art, which can be valuable

for developing scholarly projects (José De Oliveira et al., 2019). By analyzing the most influential authors, literature, and publishers, as well as the thematic evolution in the field of Digital Islam, this method enables a comprehensive assessment of research related to digital Islam. Additionally, it provides a theoretical framework for future research. This study is important for understanding the complex relationship between digital technology, Islam, and religious identity, and can inform the development of inclusive policies and practices for the global Muslim community by incorporating research questions about the representation of women in digital Islamic works.

Studies using bibliometric methods and systematic literature reviews have made significant contributions to our understanding of how Islam is interpreted, practiced, and discussed in the digital realm. Research on social media has revealed negative narratives and public perceptions of Islam, while research on new media has traced the evolution of the relationship between Islam and technology. Additionally, research on digitalization in Islamic learning has shown that technology can enhance religious education. However, despite these contributions, there is still no research that addresses the need for a comprehensive definition or theoretical framework for "Digital Islam." Existing research tends to focus on practical applications and specific cases, rather than developing a broader framework. Therefore, further research is needed to provide a more comprehensive understanding and theoretical foundation that can inform future research, policies, and practices in digital Islamic space.

3. The introduction provides an overview of the bibliometric methods used in the research. However, it would be better to provide a more detailed explanation of how these methods are implemented, including the search and analysis criteria used. A detailed description of the search and criteria analysis has been added to the research design section. As follows:

To examine the relationship between Islamic and Muslim societies and the digital realm, a comprehensive search strategy was implemented using the Scopus database (Donthu et al. 2021). The use of Scopus was justified by its extensive collection of over 90 million documents that represent Islamic perspectives in the literature (Elsevier Scopus blog, 2023). Additionally, its user-friendly search interface and offline analysis capabilities using CSV files enable in-depth searches and analyses (Baas et al., 2020; Zainuddin, 2015). Scopus is a multidisciplinary database suitable for searching scholarly articles on a range of topics including Islam and digital media (AlRyalat et al., 2019) (AlRyalat et al., 2019). Therefore, Scopus' extensive database coverage, analysis features, and global reach make it an ideal choice for searching literature related to Islam and digital media. A search string was then used TITLE-ABS-KEY (islam OR "Muslim societies" AND "digital world" OR "digital age" OR technology OR "social media" OR internet OR "online community" OR "cyber space" OR "digital culture" OR "virtual community" OR "online engagement" OR "digital engagement" OR "social networking" OR "online education" OR "e-learning" OR "virtual learning" OR "digital platforms" OR "online platforms"). In this study, the initial step involved identifying pertinent records from the Scopus database, resulting in the successful identification of 2026 documents based on the STRING Criteria. Following identification, the next step entailed the removal of records prior to screening. This process led to the removal of 13 documents due to duplicates, 2 documents due to incomplete content, and 3 documents due to incomplete author information, resulting in a total of 2008 documents remaining for the subsequent screening process.

The subsequent screening process involved evaluating the remaining documents to determine their suitability based on specific inclusion and exclusion criteria. A total of 569 documents were excluded by restricting the subject areas to the social sciences, arts, humanities, psychology, and multidisciplinary studies. Additionally, 239 documents were excluded by restricting the document type to articles, book chapters, or conference papers, and 11 documents were excluded by selecting only the finalized publications. Furthermore, 40 documents were excluded based on specific keyword criteria such as Christianity, Judaism, Hinduism, Buddhism, and Catholicism. In contrast, 89 English-only articles were included. After a rigorous screening process, 1060 studies were deemed eligible and included in the subsequent bibliometric analysis, as depicted in Figure 1.

4. Although the introduction mentions some of the contributions of previous research, it would be better to provide a brief analysis of how this research broadens or deepens the understanding of this topic compared to previous research.

Comparisons with previous research have been added as follows:

Studies using bibliometric methods and systematic literature reviews have made significant contributions to our understanding of how Islam is interpreted, practiced, and discussed in the digital realm. Research on social media has revealed negative narratives and public perceptions of Islam, while research on new media has traced the evolution of the relationship between Islam and technology. Additionally, research on digitalization in Islamic learning has shown that technology can enhance religious education. However, despite these contributions, there is still no research that addresses the need for a comprehensive definition or theoretical framework for "Digital Islam." Existing research tends to focus on practical applications and specific cases, rather than developing a broader framework. Therefore, further research is needed to provide a more comprehensive understanding and theoretical foundation that can inform future research, policies, and practices in digital Islamic space.

#### Reviewer #2:

1. Ensure that all key terms, especially "digital Islam" and "digital ummah", are clearly defined early in the paper to establish a solid theoretical foundation. Given the complexity and novelty of the concepts, defining these terms will help in aligning the readers' understanding with the authors' perspectives.

I have tried to define digital Islam, but there is no single definition of this concept. In this regard, I quote Garry Bunt's opinion, detailed as follows:

According to Gary R. Bunt (2009), the term "digital Islam," lacks a single clear definition and admits that it is unable to provide a precise explanation. Bunt acknowledges that the term can have varied interpretations, depending on an individual's perspective. He noted that there is no universally accepted definition of the term.

"It depends in part on one defines Islam, and whether elements within that definitionhave a digital edge. Digital Islam may be explicitly online, on a website, blog, YouTube Video, or, more recently, an entry on Twitter. It may be explicitly 'religious' in orientation, relating to specific practices and concepts associated with core Islamic

values and precepts. However, the articulation of digital Islam may also relate to specific cultural and political causes, which may be implicitly 'Islamic' in orientation". Gary Bunt's (2009) approach categorizes digital Islam into different aspects based on how it integrates with Islamic practices. These aspects include using digital platforms to disseminate religious teachings and information, utilizing social media and online forums for discussions related to Islam, and employing mobile applications for religious activities, such as prayer times and Quran recitation. Additionally, digital Islam is seen as a means of activism, in which digital platforms are utilized for political or social issues from an Islamic perspective. Finally, digital Islam in culture is classified as the integration of Islamic elements into the digital media. Bunt's approach demonstrates the adaptability of digital Islam to technology and its impact on the daily lives of Muslims worldwide, presenting opportunities for further investigation into the intersection of religion and technology (Bunt, 2009). Therefore, a strong theoretical foundation in digital Islamic studies is crucial for a deeper understanding of the implications of digital tools and platforms on Islamic practices and beliefs. Campbell (2017) and Chaudhary (2020) have addressed this issue by highlighting the importance of a theoretical approach to studying digital Islam and the significance of digital ethics in Islam. Both contributions emphasize the need for a blend of theoretical rigor and practical flexibility in the study of digital Islam, and the importance of ongoing research and dialogue in understanding digital transformation in Islam.

2. The introduction could be more focused on outlining the specific objectives of the bibliometric analysis. Clarifying how this analysis contributes uniquely to the field will help in setting the stage for the research questions and the overall study.

I have added the reasons why this research is important in line number words 90-98 and 114-124 as follows:

When discussing digital Islam, several key aspects have yet to be fully explored. One of these is the lack of a single agreed-upon definition of digital Islam, which has led to a range of methodologies, approaches, and theories being employed to study this phenomenon. This diversity can be difficult for those unfamiliar with the issue to comprehend, particularly the Muslim community itself, which is the focus of the discussion. Another important factor to consider is the relationship between Islam and digital platforms, which can shed light on the cultural shifts that occur in society. It is worth noting that the impact of digital technology on religious behavior may be more pronounced in conservative and traditional environments than in more inclusive and open environments (Ibahrine, 2020).

As research in this field continues to advance, bibliometric analysis is a useful method for studying the discourse of adaptation and representation of Islam in the digital realm. This method helps to identify research gaps, trends, and the state of the art, which can be valuable for developing scholarly projects (José De Oliveira et al., 2019). By analyzing the most influential authors, literature, and publishers, as well as the thematic evolution in the field of Digital Islam, this method enables a comprehensive assessment of research related to digital Islam. Additionally, it provides a theoretical framework for future research. This study is important for understanding the complex relationship between digital technology, Islam, and religious identity, and can inform the development of inclusive policies and practices for the global Muslim community by incorporating research questions about the representation of women in digital Islamic works.

Studies using bibliometric methods and systematic literature reviews have made significant contributions to our understanding of how Islam is interpreted, practiced, and discussed in

the digital realm. Research on social media has revealed negative narratives and public perceptions of Islam, while research on new media has traced the evolution of the relationship between Islam and technology. Additionally, research on digitalization in Islamic learning has shown that technology can enhance religious education. However, despite these contributions, there is still no research that addresses the need for a comprehensive definition or theoretical framework for "Digital Islam." Existing research tends to focus on practical applications and specific cases, rather than developing a broader framework. Therefore, further research is needed to provide a more comprehensive understanding and theoretical foundation that can inform future research, policies, and practices in digital Islamic space.

- 3. Check for consistency in the formatting of references, figures, and tables. Ensuring uniformity in presentation will improve the manuscript's professional appearance and readability. We have improved the images and tables as much as possible. In addition, we attempted to double-check these references. For reference, I used Zotero, where the majority of articles were automatically entered into this software through their DOI. The formatting of references was automated using this application.
- 4. Provide more detailed explanations of the bibliometric methods used, such as the criteria for selecting databases, the specific search strings employed, and the rationale behind choosing Biblioshiny software. This detail will enhance the reproducibility of the research and strengthen the methodological rigor.

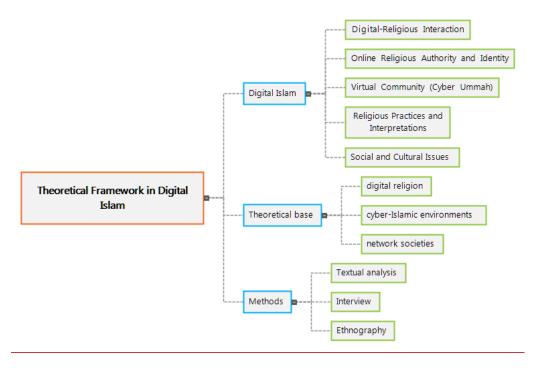
A detailed description of the search and criteria analysis has been added to the research design section. As follows:

To examine the relationship between Islamic and Muslim societies and the digital realm, a comprehensive search strategy was implemented using the Scopus database (Donthu et al. 2021). The use of Scopus was justified by its extensive collection of over 90 million documents that represent Islamic perspectives in the literature (Elsevier Scopus blog, 2023). Additionally, its user-friendly search interface and offline analysis capabilities using CSV files enable in-depth searches and analyses (Baas et al., 2020; Zainuddin, 2015). Scopus is a multidisciplinary database suitable for searching scholarly articles on a range of topics including Islam and digital media (AlRyalat et al., 2019) (AlRyalat et al., 2019). Therefore, Scopus' extensive database coverage, analysis features, and global reach make it an ideal choice for searching literature related to Islam and digital media. A search string was then used TITLE-ABS-KEY (islam OR "Muslim societies" AND "digital world" OR "digital age" OR technology OR "social media" OR internet OR "online community" OR "cyber space" OR "digital culture" OR "virtual community" OR "online engagement" OR "digital engagement" OR "social networking" OR "online education" OR "e-learning" OR "virtual learning" OR "digital platforms" OR "online platforms"). In this study, the initial step involved identifying pertinent records from the Scopus database, resulting in the successful identification of 2026 documents based on the STRING Criteria. Following identification, the next step entailed the removal of records prior to screening. This process led to the removal of 13 documents due to duplicates, 2 documents due to incomplete content, and 3 documents due to incomplete author information, resulting in a total of 2008 documents remaining for the subsequent screening process.

The subsequent screening process involved evaluating the remaining documents to determine their suitability based on specific inclusion and exclusion criteria. A total of 569 documents were excluded by restricting the subject areas to the social sciences, arts, humanities,

psychology, and multidisciplinary studies. Additionally, 239 documents were excluded by restricting the document type to articles, book chapters, or conference papers, and 11 documents were excluded by selecting only the finalized publications. Furthermore, 40 documents were excluded based on specific keyword criteria such as Christianity, Judaism, Hinduism, Buddhism, and Catholicism. In contrast, 89 English-only articles were included. After a rigorous screening process, 1060 studies were deemed eligible and included in the subsequent bibliometric analysis, as depicted in Figure 1.

- 5. The discussion section could benefit from a deeper exploration of the theoretical implications of the findings. Discuss how these insights contribute to existing theories of digital religion and propose new theoretical frameworks that could be derived from your findings.
  I have done a lot of restructuring in the discussion section. I have now divided the Discussion section into several subheadings to make it easier to read:
  - When did the discourse on Islam and digital technology begin?
  - How has digital technology and social media evolved and affected the Muslim communities?
  - Discussion to find a single definition of Digital Islam
  - Discussion to find and develop a theoretical framework related to digital Islam. In this case, I propose a theoretical framework.
- 6. Clearly articulate the limitations of the current study. This honesty will aid readers in understanding the scope of the conclusions. Additionally, we suggest directions for future research to further explore the unanswered questions or new inquiries that arose from this study.



7. Throughout the document, consider revising sentences that may be overly complex or contain grammatical errors. Simplifying the language where possible will make the paper more

accessible to a broader audience, including those for whom English might not be a first language.

In connection with this, in several sections, namely the discussion section, the research design section, and the Discussion section, I have used TRIM to condense the words. It will be seen in the track change where I tried to revise several times to make the content of this article more compact.

- 8. Enhance the impact of your findings with clear, well-designed visual representations. Graphs, charts, and thematic maps that are easy to understand can greatly enhance the presentation of your bibliometric analysis.
  - All images, tables, thematic evolution, etc., were taken from the Biblioshiny Software and VOSViewer by default, especially thematic maps. where the best format was used.
- 9. Strengthen the analysis section by critically engaging with the findings. Discuss the broader implications of digital Islam's trends, and compare these trends with those observed in other religions or digital cultural studies.

I have done a lot of restructuring in the discussion section. I have now divided the Discussion section into several subheadings to make it easier to read:

- When did the discourse on Islam and digital technology begin?
- How has digital technology and social media evolved and affected the Muslim communities?
- Discussion to find a single definition of Digital Islam

As evidence that I have compared with some other research, here is the discussion section that answers when did the discourse on Islam and digital technology begin?

Based on bibliometric analysis, digital Islam has gained increasing academic interest since 1969, with a notable surge beginning in the early 2000s. This surge can be attributed to two main factors: global repercussions of the post-9/11 world and the rapid advancement of information and communication technologies. The 9/11 terrorist attacks significantly altered global perceptions of Islam, intensifying the need to understand its digital representations as internet usage expanded. Concurrently, the proliferation of Internet and mobile technologies reshaped how Muslim communities engaged in religious, social, and cultural practices, leading scholars to investigate these dynamics through digital lenses, resulting in rich academic discourse featured in journals and conferences such as 'Religions,' 'Indonesian Journal of Islam and Muslim Societies,' 'Contemporary Islam,' and the 'International Conference on Information and Communication Technology for the Muslim World.

Studies have identified several stages of technological adoption in religious practice. Evolvi (2021) identified four phases of digital-religious evolution from the mid-1990s to the late 2010s: the use of religious websites, apps, and social media for religious purposes. Bunt (2000) emphasized the integration of the Internet into religious practices, which allows remote access to sermons and participation in religious experiences. These changes are also reflected in the field's publication and citation trends, with significant spikes in 2003, 2004, and 2016 and a decline from 2019 to 2024, highlighting the ongoing development and understanding of how digital technologies shape Islamic practices and identity.

Historical, technological, and sociopolitical factors have influenced the adoption of technology in Islamic contexts, as seen in Rapoport (1983) and Robinson (1993). These studies, while not directly addressing Digital Islam, provide foundational insights into the intersection between technology and Islam. Rapoport critiqued the contemporary definition of 'modern terrorism'

and emphasized the importance of considering historical contexts, while Robinson discussed the impact of print technology on Islamic knowledge transmission, noting initial resistance within Muslim societies. As a result, the adoption of technology in Islamic contexts is influenced by a complex interplay of these factors, which helps elucidate the ways in which traditional Islamic practices and communities adapt to and are transformed by digital innovations. This finding is consistent with various studies that suggest that discourse on Islam and digital technology has a long history dating back to the 1970s (Halevi, 2021, pp. 1975–2010). This discourse focused on religio-technological innovations and the development of devices to meet the needs of Muslims. Over three decades, as Halevi (2021) noted, there was an exponential growth in inventions aimed at the Islamic market, such as the first Islamic electronic watch and "The Muslim Xbox." Moreover, the integration of Islamic knowledge into Muslim society was made possible by the introduction of printing, which greatly influenced the emergence of the concepts of "tradition" and "modernity" (Roper, 2017). Furthermore, the development of digital progress has influenced the expansion of terrorist attitudes and rapid development of

10. Clearly articulate the limitations of the current study. This honesty will aid readers in understanding the scope of the conclusions. Additionally, we suggest directions for future research to further explore the unanswered questions or new inquiries that arose from this study.

I have added the following limitations to this study.

cyber jihad among cyber ummah (Czornik, 2024).

The research on digital Islamic studies found some limitations that should be considered in future research. The use of the Scopus database may lead to missing important publications that are not indexed on this platform, such as in Google Scholar, WoS and other databases so that important data or developing trends may be missed. This study also had limitations in the timeframe of the study, as some studies were still in the process of being published or had not been published at the time of the analysis. Nonetheless, the study managed to achieve significant findings, including mapping key developments and trends in the incorporation of digital technologies in Islamic practices. The findings also emphasize the important role of digital platforms in education and religious engagement. This research provides a rich understanding of digital Islamic studies and demonstrates the evolving relationship between technology and religious practice, which can serve as a basis for further research.

11. Augment the literature review by discussing and contrasting your findings with previous studies more thoroughly. This will situate your paper within the existing academic discourse and highlight its contribution to the field.

We have added the following to the Introduction:

A variety of research on digital Islam has arisen from the lack of a single definition of this concept. The investigation of Islam and the Internet commenced in the late 1990s as academics-initiated research on how religious individuals and organizations employed the Internet to disseminate religious content and messages (Eickelman, 2003; Ibahrine, 2020). Scholars argue that the advent of digital media in the Arab and Islamic realms could facilitate

religious authorities to propagate their standardized and unaltered perspectives (Sisler, 2011). On the other hand, others contend that these ideas appear ineffective and oversimplified because of digital media's minimal influence on the culture of Arab and Islamic realms (el-Nawawy & Khamis, 2010). Additionally, the digitalization of Islam is viewed as a test of the conventional understanding of Muslim identity (Ibahrine, 2014; Martin, 2004).

Research indicates that new media and digital technology impact religious hierarchies, challenge established societal structures, and offer a platform for religious groups that were previously underrepresented (Bunt, 2018; Ibahrine, 2020). The construction of Islam as a social and cultural entity continues to evolve in response to societal advancements and technological innovations (Sorgenfrei, 2021).

Studies in Muslim societies have investigated the relationship between Islam and digital technology, focusing on topics such as religiosity and consumer attitudes (Souiden & Rani, 2015), Islamic education among youth (Alkouatli et al., 2023), media representation and Islamophobia (Saeed, 2007), the impact of Muslim communities on Islamophobia (Bowe & Makki, 2016), the emergence of hybrid Muslim identities in the digital realm (Evolvi, 2017), and women's empowerment in the Islamic context (Gökhan, 2019; Nisa, 2021). These findings demonstrate the intricate interplay among technology, culture, digital Islam, and societal norms.

When discussing digital Islam, several key aspects have yet to be fully explored. One of these is the lack of a single agreed-upon definition of digital Islam, which has led to a range of methodologies, approaches, and theories being employed to study this phenomenon. This diversity can be difficult for those unfamiliar with the issue to comprehend, particularly the Muslim community itself, which is the focus of the discussion. Another important factor to consider is the relationship between Islam and digital platforms, which can shed light on the cultural shifts that occur in society. It is worth noting that the impact of digital technology on religious behavior may be more pronounced in conservative and traditional environments than in more inclusive and open environments (Ibahrine, 2020).

As research in this field continues to advance, bibliometric analysis is a useful method for studying the discourse of adaptation and representation of Islam in the digital realm. This method helps to identify research gaps, trends, and the state of the art, which can be valuable for developing scholarly projects (José De Oliveira et al., 2019). By analyzing the most influential authors, literature, and publishers, as well as the thematic evolution in the field of Digital Islam, this method enables a comprehensive assessment of research related to digital Islam. Additionally, it provides a theoretical framework for future research. This study is important for understanding the complex relationship between digital technology, Islam, and religious identity, and can inform the development of inclusive policies and practices for the global Muslim community by incorporating research questions about the representation of women in digital Islamic works.

Regarding the bibliometric analysis method in research on the theme of 'digital Islam,' previous studies have not specifically used this term in their discussion. Instead, they focused on themes such as religious moderation, Islamic studies and new media, terrorism issues, Islamic communication, and Da'wah, as shown in <u>Table 1</u>.

#### Reviewer #3:

1. You should explain what database was used in this abstract and what year the search results are from. Have added in the research design as follows:

To examine the relationship between Islamic and Muslim societies and the digital realm, a comprehensive search strategy was implemented using the Scopus database (Donthu et al. 2021). The use of Scopus was justified by its extensive collection of over 90 million documents that represent Islamic perspectives in the literature (Elsevier Scopus blog, 2023). Additionally, its user-friendly search interface and offline analysis capabilities using CSV files enable in-depth searches and analyses (Baas et al., 2020; Zainuddin, 2015). Scopus is a multidisciplinary database suitable for searching scholarly articles on a range of topics including Islam and digital media (AlRyalat et al., 2019) (AlRyalat et al., 2019). Therefore, Scopus' extensive database coverage, analysis features, and global reach make it an ideal choice for searching literature related to Islam and digital media. A search string was then used TITLE-ABS-KEY (islam OR "Muslim societies" AND "digital world" OR "digital age" OR technology OR "social media" OR internet OR "online community" OR "cyber space" OR "digital culture" OR "virtual community" OR "online engagement" OR "digital engagement" OR "social networking" OR "online education" OR "e-learning" OR "virtual learning" OR "digital platforms" OR "online platforms"). In this study, the initial step involved identifying pertinent records from the Scopus database, resulting in the successful identification of 2026 documents based on the STRING Criteria. Following identification, the next step entailed the removal of records prior to screening. This process led to the removal of 13 documents due to duplicates, 2 documents due to incomplete content, and 3 documents due to incomplete author information, resulting in a total of 2008 documents remaining for the subsequent screening process.

The subsequent screening process involved evaluating the remaining documents to determine their suitability based on specific inclusion and exclusion criteria. A total of 569 documents were excluded by restricting the subject areas to the social sciences, arts, humanities, psychology, and multidisciplinary studies. Additionally, 239 documents were excluded by restricting the document type to articles, book chapters, or conference papers, and 11 documents were excluded by selecting only the finalized publications. Furthermore, 40 documents were excluded based on specific keyword criteria such as Christianity, Judaism, Hinduism, Buddhism, and Catholicism. In contrast, 89 English-only articles were included. After a rigorous screening process, 1060 studies were deemed eligible and included in the subsequent bibliometric analysis, as depicted in Figure 1.

2. Despite having written about bibliometrix software, the methods section does not describe biblioshiny software.

Have added in the research design as follows:

In this study, I used the Biblioshiny software in R-Studio to conduct a bibliometric analysis and map key developments, trends, and dynamics in the field of Digital Islam literature (Aria & Cuccurullo, 2017). Bibliometrix is a open-source tool that enables comprehensive science mapping analysis and supports a recommended workflow. In addition, the VOSViewer was used in this study. This software emphasizes the visual representation of bibliometric maps (Van Eck and Waltman, 2010). Furthermore, N-Vivo was employed for sentiment analysis of digital Islamic literature. N-Vivo's sentiment analysis tool is suitable for this task because it can autocode unlabeled and unstructured text corpora against a built-in sentiment dictionary, as shown in an experiment on the IMDB dataset, where it achieved an accuracy of 87.63% (Dewi

et al., 2023). Therefore, using N-Vivo for sentiment analysis in this study was the most appropriate choice.

To examine the relationship between Islamic and Muslim societies and the digital realm, a comprehensive search strategy was implemented using the Scopus database (Donthu et al. 2021). The use of Scopus was justified by its extensive collection of over 90 million documents that represent Islamic perspectives in the literature (Elsevier Scopus blog, 2023). Additionally, its user-friendly search interface and offline analysis capabilities using CSV files enable in-depth searches and analyses (Baas et al., 2020; Zainuddin, 2015). Scopus is a multidisciplinary database suitable for searching scholarly articles on a range of topics including Islam and digital media (AlRyalat et al., 2019). Therefore, Scopus' extensive database coverage, analysis features, and global reach make it an ideal choice for searching literature related to Islam and digital media. A search string was then used TITLE-ABS-KEY (islam OR "Muslim societies" AND "digital world" OR "digital age" OR technology OR "social media" OR internet OR "online community" OR "cyber space" OR "digital culture" OR "virtual community" OR "online engagement" OR "digital engagement" OR "social networking" OR "online education" OR "elearning" OR "virtual learning" OR "digital platforms").

### 3. Maybe you can reference some of these studies on this topic!

- https://ejournal.bumipublikasinusantara.id/index.php/ajores/article/view/185
- <a href="https://api.taylorfrancis.com/content/chapters/edit/download?identifierName=doi&identifierValue=10.4324/9781003171638-10&type=chapterpdf">https://api.taylorfrancis.com/content/chapters/edit/download?identifierName=doi&identifierValue=10.4324/9781003171638-10&type=chapterpdf</a>
- https://www.mdpi.com/2227-7072/11/2/76
- https://link.springer.com/chapter/10.1007/978-3-031-14941-2
- http://ejournal.bumipublikasinusantara.id/index.php/ajores/article/view/449
- https://www.jurnal.staialhidayahbogor.ac.id/index.php/ei/article/view/4339
   Some studies have added the following tables.

Focus	Title	Methods	Result
Representation of Islam in social media	The representation of Islam within social media: a systematic review (Hashmi et al., 2021)	Systematic review and thematic analysis from Scopus and Web of Science databases.	Found varying depictions of Islam ranging from liberal to extremist views. The majority of empirical studies suggested a negative portrayal of Islam in social media.
Religious moderation	Bibliometric Analysis: Religious Moderation (Prahesti, 2022)	Bibliometric analysis using Google Scholar with Publish and Perish and VOSviewer for data analysis.	Identified significant growth in articles on religious moderation, with a surge in 2020-2022, providing a foundation for further exploration in this field.
Islamic studies and new media	The Bibliometric Analysis of Islamic Studies Research and New Media Based on Biblioshiny (Yunus Mustofa & Rizal Mustofa, 2023)	Bibliometric analysis using Scopus data and Biblioshiny for statistical and visual analysis.	exploration in this field.  Detected keyword trends and author/journal prominence, highlighting shifts in research focus with an increased emphasis on gender and authority within the context of Islam and new media.

Terrorism in Indonesia	Bibliometric analysis of publications trends on the terrorism issues in Indonesia (Yumitro et al., 2023)	Bibliometric analysis with data from Scopus and visualization using VOSviewer.	Observed an upward trend in terrorism-related research, with Indonesia being prominently featured due to its unique demographic and geopolitical context.
Islamic studies	Systematic Review Studi Islam: A Bibliometrics Analysis (1941-2022) (Latuconsina, 2023)	Bibliometric analysis using the R package "Bibliometrics" for data analysis and thematic analysis.	Mapped the evolution of Islamic studies through bibliometric data, showing key topics, author contributions, and the most cited works over the decades.
Islamic communication and da'wah	Analisis Scientometrik Tentang Komunikasi dan Dakwah Islam dalam Literatur Ilmiah (Izza, 2023)	Scientometric analysis with VOSviewer and NVivo 12 Plus for bibliometric mapping and frequency analysis.	Provided insights into publication patterns and thematic clusters in Islamic communication and da'wah, highlighting media and communication methods in da'wah activities.
Science and Islam	Computational Bibliometric Analysis of Research on Science and Islam with VOSviewer: Scopus Database in 2012 to 2022 (D. F. Al Husaeni & Al Husaeni, 2022)	Bibliometric analysis using VOSviewer for data mapping.	Showed a general decline in publication volume over the years with a peak in 2012, identifying key research areas such as Islamic perspectives on education and science.
Digital transformation in Islamic learning	Computational Bibliometric Analysis: Can Digital Transformation Improve the Quality of Islamic Learning? (D. N. Al Husaeni & Rahmat, 2023)	Bibliometric analysis to identify trends and main topics in the field of digital transformation in religious education.	Concluded that digital transformation has positively influenced the quality of religious education, making learning more interactive and varied.  Documented an emerging focus
Digital entrepreneurship with Islamic values	Research Trends on Digital Entrepreneurship with Islamic Values: Bibliometric Analysis (2012-2022) (Supriadi & Nur, 2023)	Bibliometric analysis using Scopus and VOSviewer for data visualization.	on digital entrepreneurship within Islamic contexts, noting an increase in research interest and potential areas for development in social entrepreneurship and sustainability.

- 4. We recommend that you incorporate these seven research questions into the results section.
  7 RQ has actually been included in RESULT but in a non-question sentence format. You can see this in detail in the revision that I have done, and I have added the code to the RQ.
- Justify why you are using this database; why not other databases such as Web of Science and others? Should be supported with references to journal articles.
   To examine the relationship between Islamic and Muslim societies and the digital realm, a comprehensive search strategy was implemented using the Scopus database (Donthu et al. 2021).

The use of Scopus was justified by its extensive collection of over 90 million documents that represent Islamic perspectives in the literature (Elsevier Scopus blog, 2023). Additionally, its user-friendly search interface and offline analysis capabilities using CSV files enable in-depth searches and analyses (Baas et al., 2020; Zainuddin, 2015). Scopus is a multidisciplinary database suitable for searching scholarly articles on a range of topics including Islam and digital media (AlRyalat et al., 2019). Therefore, Scopus' extensive database coverage, analysis features, and global reach make it an ideal choice for searching literature related to Islam and digital media. A search string was then used TITLE-ABS-KEY (islam OR "Muslim societies" AND "digital world" OR "digital age" OR technology OR "social media" OR internet OR "online community" OR "cyber space" OR "digital culture" OR "virtual community" OR "online engagement" OR "digital engagement" OR "social networking" OR "online education" OR "e-learning" OR "virtual learning" OR "digital platforms" OR "online platforms").

6. The filter applied to the table lacks clarity regarding its inclusivity. Employing a prism-like flow would improve transparency, providing a detailed account of the number of documents initially identified, those included and excluded, and ultimately the quantity of documents subjected to analysis.

To examine the relationship between Islamic and Muslim societies and the digital realm, a comprehensive search strategy was implemented using the Scopus database (Donthu et al. 2021). The use of Scopus was justified by its extensive collection of over 90 million documents that represent Islamic perspectives in the literature (Elsevier Scopus blog, 2023). Additionally, its user-friendly search interface and offline analysis capabilities using CSV files enable indepth searches and analyses (Baas et al., 2020; Zainuddin, 2015). Scopus is a multidisciplinary database suitable for searching scholarly articles on a range of topics including Islam and digital media (AlRyalat et al., 2019) (AlRyalat et al., 2019). Therefore, Scopus' extensive database coverage, analysis features, and global reach make it an ideal choice for searching literature related to Islam and digital media. A search string was then used TITLE-ABS-KEY (islam OR "Muslim societies" AND "digital world" OR "digital age" OR technology OR "social media" OR internet OR "online community" OR "cyber space" OR "digital culture" OR "virtual community" OR "online engagement" OR "digital engagement" OR "social networking" OR "online education" OR "e-learning" OR "virtual learning" OR "digital platforms" OR "online platforms").

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The subsequent screening process involved evaluating the remaining documents to determine their suitability based on specific inclusion and exclusion criteria. A total of 569 documents were excluded by restricting the subject areas to the social sciences, arts, humanities, psychology, and multidisciplinary studies. Additionally, 239 documents were excluded by restricting the document type to articles, book chapters, or conference papers, and 11 documents were excluded by selecting only the finalized publications. Furthermore, 40 documents were excluded based on specific keyword criteria such as Christianity, Judaism, Hinduism, Buddhism, and Catholicism. In contrast, 89 English-only articles were included.

After a rigorous screening process, 1060 studies were deemed eligible and included in the subsequent bibliometric analysis, as depicted in Figure 1.

7. In the methods section, I didn't see you include VosViewer as a tool you used in your analysis. You should add it to the tool's methods section.

In this study, I used the Biblioshiny software in R-Studio to conduct a bibliometric analysis and map key developments, trends, and dynamics in the field of Digital Islam literature (Aria & Cuccurullo, 2017). Bibliometrix is a open-source tool that enables comprehensive science mapping analysis and supports a recommended workflow. In addition, the VOSViewer was used in this study. This software emphasizes the visual representation of bibliometric maps (Van Eck and Waltman, 2010). Furthermore, N-Vivo was employed for sentiment analysis of digital Islamic literature. N-Vivo's sentiment analysis tool is suitable for this task because it can autocode unlabeled and unstructured text corpora against a built-in sentiment dictionary, as shown in an experiment on the IMDB dataset, where it achieved an accuracy of 87.63% (Dewi et al., 2023). Therefore, using N-Vivo for sentiment analysis in this study was the most appropriate choice.

8. To see the author's influence (the number of document citations), it is better to use a table to make it clearer how many citations the top ten authors have.

I have added the following in Table 3:

Table 1. Top Authors and Sources in Digital Islam literature by Biblioshiny

Author	TI	TC	ТСрҮ
ABOKHODAIR N	6	233	27.24722
INHORN MC	6	496	26.24528
NISA EF	5	148	19.88095
EVOLVI G	6	86	12.91667
CLARKE M	5	153	9.271335
EISENLOHR P	5	137	9.023647
BAULCH E	3	60	8.571429
AL-RAWI A	4	54	5.790909
LARSSON G	5	60	4.944444
ECHCHAIBI N	3	70	4.845238
AL-ZAMAN MS	3	11	3.666667
HASHMI UM	4	13	3.333333
SHABANA A	5	33	3.3
EDIS T	4	37	2.871591
ABDEL-FADIL M	3	12	2.309524
MAHMUD M	5	23	1.924242
HASHIM R	4	13	1.287879
BUNT GR	3	7	0.564103
HANEEF SSS	3	1	0.090909

# Exploring the Intersection of Islam and Digital Technology: A Bibliometric Analysis

This study aims to identify key developments and trends in digital Islamic studies, including influential authors and their contributions, patterns of collaboration, and the evolution of themes in the literature of the 1060 Scopus database from to 1969-2024. This study also examines the representation of women and the main theoretical frameworks in the field. Biblioshiny, R-Studio, VOSViewer, and N-Vivo were used for bibliometric and sentiment analyses. This study found that academic attention to Islam and digital technologies has increased since the early 2000s with a shift towards online platforms for religious expression and community building. The study also examines the role of key authors, such as Norah Abokhodair, Sarah Vieweg, Marcia C. Inhorn, Eva F. Nisa, Giulia Evolvi, Morgan Clarke, Patrick Eisenlohr and Emma Baulch. The analysis of trends in the digital Islamic literature shows an increasing integration of digital technologies in Islamic practice from 2008 to 2021, with a focus on social media and mobile applications for religious education and engagement. Since 2021, Instagram has become an important space for the expression and discussion of Islamic identity. The research examines digital Islam as a major area of digital religion, exploring the role of the 'digital Muslim' in the 'digital Ummah.' This study reveals how digital Islam blends conventional and modern techniques, employs a cross-disciplinary theoretical approach, and significantly includes women. These findings demonstrate that women are more visible in highly cited studies.

Keywowds: Islam, digital religion, digital Islam, bibliometric analysis, women in digital Islam

#### Introduction

The significance of digital Islam in Muslim societies is rapidly growing as digital technologies become more prevalent. It is imperative to understand how Islam adapts and is represented in this new medium. Fortunately, despite a lack of consensus on the definition of "digital Islam," it is clear that it represents a unique manifestation of Islam in the digital context, with new identities, practices, and emerging communities (Campbell, 2012; el-Nawawy & Khamis, 2010; Zaid et al., 2022). Some view it as the use of digital tools to practice Islam (Al-Farizi et al., 2022; Arifin et al., 2022; Mustafa et al., 2020), whereas others argue that it extends it (al-Mutairi, 2022; el-Nawawy & Khamis, 2010; Lengauer, 2018; Olson, 2017).

According to Gary R. Bunt (2009), the term "digital Islam," lacks a single clear definition and admits that it is unable to provide a precise explanation. Bunt acknowledges that the term can have varied interpretations, depending on an individual's perspective. He noted that there is no universally accepted definition of the term.

"It depends in part on one defines Islam, and whether elements within that definitionhave a digital edge. Digital Islam may be explicitly online, on a website, blog, YouTube Video, or, more recently, an entry on Twitter. It may be explicitly 'religious' in orientation, relating to specific practices and concepts associated with core Islamic values and precepts. However, the articulation of digital Islam may also relate to specific cultural and political causes, which may be implicitly 'Islamic' in orientation".

Gary Bunt's (2009) approach categorizes digital Islam into different aspects based on how it integrates with Islamic practices. These aspects include using digital platforms to disseminate religious teachings and information, utilizing social media and online forums for discussions related

to Islam, and employing mobile applications for religious activities, such as prayer times and Quran recitation. Additionally, digital Islam is seen as a means of activism, in which digital platforms are utilized for political or social issues from an Islamic perspective. Finally, digital Islam in culture is classified as the integration of Islamic elements into the digital media. Bunt's approach demonstrates the adaptability of digital Islam to technology and its impact on the daily lives of Muslims worldwide, presenting opportunities for further investigation into the intersection of religion and technology (Bunt, 2009). Therefore, a strong theoretical foundation in digital Islamic studies is crucial for a deeper understanding of the implications of digital tools and platforms on Islamic practices and beliefs. Campbell (2017) and Chaudhary (2020) have addressed this issue by highlighting the importance of a theoretical approach to studying digital Islam and the significance of digital ethics in Islam. Both contributions emphasize the need for a blend of theoretical rigor and practical flexibility in the study of digital Islam, and the importance of ongoing research and dialogue in understanding digital transformation in Islam.

Another term related to the concept of digital Islam, also known as digital Muslims or digital Ummah, refers to individuals who actively use digital platforms and technology to express and practice their faith, connect with other Muslims globally, and engage in religious activities (Spalek & Imtoual, 2007). It is becoming increasingly common because of increasing digital literacy among Muslims, especially the younger generation, who use digital devices to strengthen their Islamic identity, access religious content, and participate in online religious discussions (Akmaliah & Burhani, 2021). The concept of e-Ummah, or virtual Ummah, has also emerged, where Muslims gather online to build a sense of brotherhood and unity (Jamil et al., 2020). The Internet also gives young Muslims the option to join digital communities, where they can interact through thoughts, attitudes, and discussions, rather than limited by geographical location or social and family ties (Kirmayer et al. 2013).

A variety of research on digital Islam has arisen from the lack of a single definition of this concept. The investigation of Islam and the Internet commenced in the late 1990s as academics-initiated research on how religious individuals and organizations employed the Internet to disseminate religious content and messages (Eickelman, 2003; Ibahrine, 2020). Scholars argue that the advent of digital media in the Arab and Islamic realms could facilitate religious authorities to propagate their standardized and unaltered perspectives (Sisler, 2011). On the other hand, others contend that these ideas appear ineffective and oversimplified because of digital media's minimal influence on the culture of Arab and Islamic realms (el-Nawawy & Khamis, 2010). Additionally, the digitalization of Islam is viewed as a test of the conventional understanding of Muslim identity (Ibahrine, 2014; Martin, 2004).

Research indicates that new media and digital technology impact religious hierarchies, challenge established societal structures, and offer a platform for religious groups that were previously underrepresented (Bunt, 2018; Ibahrine, 2020). The construction of Islam as a social and cultural entity continues to evolve in response to societal advancements and technological innovations (Sorgenfrei, 2021).

Studies in Muslim societies have investigated the relationship between Islam and digital technology, focusing on topics such as religiosity and consumer attitudes (Souiden & Rani, 2015), Islamic education among youth (Alkouatli et al., 2023), media representation and Islamophobia (Saeed, 2007), the impact of Muslim communities on Islamophobia (Bowe & Makki, 2016), the emergence of hybrid Muslim identities in the digital realm (Evolvi, 2017), and women's empowerment in the Islamic context (Gökhan, 2019; Nisa, 2021). These findings demonstrate the intricate interplay among technology, culture, digital Islam, and societal norms.

When discussing digital Islam, several key aspects have yet to be fully explored. One of these is the lack of a single agreed-upon definition of digital Islam, which has led to a range of methodologies, approaches, and theories being employed to study this phenomenon. This diversity can be difficult for those unfamiliar with the issue to comprehend, particularly the Muslim community itself, which is the focus of the discussion. Another important factor to consider is the relationship between Islam and digital platforms, which can shed light on the cultural shifts that occur in society. It is worth noting that the impact of digital technology on religious behavior may be more pronounced in conservative and traditional environments than in more inclusive and open environments (Ibahrine, 2020).

As research in this field continues to advance, bibliometric analysis is a useful method for studying the discourse of adaptation and representation of Islam in the digital realm. This method helps to identify research gaps, trends, and the state of the art, which can be valuable for developing scholarly projects (José De Oliveira et al., 2019). By analyzing the most influential authors, literature, and publishers, as well as the thematic evolution in the field of Digital Islam, this method enables a comprehensive assessment of research related to digital Islam. Additionally, it provides a theoretical framework for future research. This study is important for understanding the complex relationship between digital technology, Islam, and religious identity, and can inform the development of inclusive policies and practices for the global Muslim community by incorporating research questions about the representation of women in digital Islamic works.

Regarding the bibliometric analysis method in research on the theme of 'digital Islam,' previous studies have not specifically used this term in their discussion. Instead, they focused on themes such as religious moderation, Islamic studies and new media, terrorism issues, Islamic communication, and Da'wah, as shown in Table 1.

Table 1. Bibliometric analysis research with themes similar to 'digital Islam'

Focus	Title	Methods	Result
Representation of Islam in social media	The representation of Islam within social media: a systematic review (Hashmi et al., 2021)	Systematic review and thematic analysis from Scopus and Web of Science databases.	Found varying depictions of Islam ranging from liberal to extremist views. The majority of empirical studies suggested a negative portrayal of Islam in social media.
Religious moderation	Bibliometric Analysis: Religious Moderation (Prahesti, 2022)	Bibliometric analysis using Google Scholar with Publish and Perish and VOSviewer for data analysis.	Identified significant growth in articles on religious moderation, with a surge in 2020-2022, providing a foundation for further exploration in this field.
Islamic studies and new media	The Bibliometric Analysis of Islamic Studies Research and New Media Based on Biblioshiny (Yunus Mustofa & Rizal Mustofa, 2023)	Bibliometric analysis using Scopus data and Biblioshiny for statistical and visual analysis.	Detected keyword trends and author/journal prominence, highlighting shifts in research focus with an increased emphasis on gender and authority within the context of Islam and new media.
Terrorism in Indonesia	Bibliometric analysis of publications trends on the terrorism issues in Indonesia (Yumitro et al., 2023)	Bibliometric analysis with data from Scopus and visualization using VOSviewer.	Observed an upward trend in terrorism-related research, with Indonesia being prominently featured due to its unique demographic and

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Islamic studies	Systematic Review Studi Islam: A Bibliometrics Analysis (1941-2022) (Latuconsina, 2023)	Bibliometric analysis using the R package "Bibliometrics" for data analysis and thematic analysis.	Mapped the evolution of Islamic studies through bibliometric data, showing key topics, author contributions, and the most cited works over the decades.  Provided insights into
Islamic communication and da'wah	Analisis Scientometrik Tentang Komunikasi dan Dakwah Islam dalam Literatur Ilmiah (Izza, 2023)	Scientometric analysis with VOSviewer and NVivo 12 Plus for bibliometric mapping and frequency analysis.	publication patterns and thematic clusters in Islamic communication and da'wah, highlighting media and communication methods in da'wah activities.
Science and Islam	Computational Bibliometric Analysis of Research on Science and Islam with VOSviewer: Scopus Database in 2012 to 2022 (D. F. Al Husaeni & Al Husaeni, 2022)	Bibliometric analysis using VOSviewer for data mapping.	Showed a general decline in publication volume over the years with a peak in 2012, identifying key research areas such as Islamic perspectives on education and science.
Digital transformation in Islamic learning	Computational Bibliometric Analysis: Can Digital Transformation Improve the Quality of Islamic Learning? (D. N. Al Husaeni & Rahmat, 2023)	Bibliometric analysis to identify trends and main topics in the field of digital transformation in religious education.	Concluded that digital transformation has positively influenced the quality of religious education, making learning more interactive and varied.  Documented an emerging
Digital entrepreneurship with Islamic values	Research Trends on Digital Entrepreneurship with Islamic Values: Bibliometric Analysis (2012-2022) (Supriadi & Nur, 2023)	Bibliometric analysis using Scopus and VOSviewer for data visualization.	focus on digital entrepreneurship within Islamic contexts, noting an increase in research interest and potential areas for development in social entrepreneurship and sustainability.

Studies using bibliometric methods and systematic literature reviews have made significant contributions to our understanding of how Islam is interpreted, practiced, and discussed in the digital realm. Research on social media has revealed negative narratives and public perceptions of Islam, while research on new media has traced the evolution of the relationship between Islam and technology. Additionally, research on digitalization in Islamic learning has shown that technology can enhance religious education. However, despite these contributions, there is still no research that addresses the need for a comprehensive definition or theoretical framework for "Digital Islam." Existing research tends to focus on practical applications and specific cases, rather than developing a broader framework. Therefore, further research is needed to provide a more comprehensive understanding and theoretical foundation that can inform future research, policies, and practices in digital Islamic space. Based on these objectives, the research questions of this study were as follows:

RQ1: How does a performance analysis of the 'digital Islamic literature reveal key developments and trends in this field?

RQ2: Who are the influential authors in the 'digital Islam' literature and what are their main contributions? Why have they become influential?

RQ3: How do patterns of collaboration between Islamic-majority countries affect the output and impact of 'digital Islamic research?

RQ4: How does bibliometric analysis reveal the thematic evolution of the 'digital Islam' literature and what are the major themes that have evolved over time?

RQ5: How does sentiment anysis in ' the literature reveal perceptions and attitudes towards digital technology in an Islamic context?

RQ6: What is the involvement and representation of women as the main authors in the 'digital Islam' literature, and what are the main articles that address gender issues?

RQ7: What are the main theoretical frameworks used in the study of digital Islam, and how do they help understand the interaction between Islam and digital technology?

In this study, I conducted a comprehensive analysis of the digital Islamic literature using bibliometric techniques. I began by analyzing publication rates, citations, and influential journals using Biblioshiny software in R-Studio and VOSViewer, which helped me identify key trends and developments in the field. I also used co-citation analysis and author collaboration networks to determine the impact of influential authors in the field and evaluate their h-index and total number of citations. Additionally, I used keyword co-occurrence analysis and thematic evolution maps to examine the thematic evolution of digital Islamic literature, providing a comprehensive understanding of the research focus and evolving interests in specific topics. Sentiment analysis using N-Vivo allowed us to assess the perceptions and attitudes of communities towards the integration of technology in religious practices. I also analyzed the representation and participation of women as lead authors in the literature on digital Islam and in the literature addressing gender issues. I used author gender and network analyses to explore the collaboration and influence of female authors, providing insights into the role of women in the field. This study delves into digital Islam's main theoretical framework by examining the most-cited documents and references globally. Identifying the most influential frameworks offers insights into how they shape our understanding of Islam and digital technology. My research combines theoretical rigor and empirical analysis to enhance the literature on Digital Islam, offering a comprehensive perspective of technology, religion, and society.

This study introduces two unique aspects of bibliometric analyses: sentiment analysis of 'digital Islam''s literature, and women's participation and representation in this field. By conducting sentiment analysis, this study uncovers the diverse perceptions and attitudes of Muslims towards digital technologies, providing significant insights into the integration of these technologies into religious practices and daily life. Understanding the interplay between digital Islam and technology is therefore crucial. Moreover, the research on women's participation and representation sheds light on the prominent role women play as primary authors and research subjects in 'digital Islam' literature. This challenges existing assumptions and underscores the importance of gender in this area of research. By emphasizing these aspects, this study contributes to the academic discourse on 'digital Islam' and promotes inclusivity and gender awareness. It also establishes a foundation for future research investigating the relationship between technology, digital Islam, and gender.

#### Research Design

In this study, I used the Biblioshiny software in R-Studio to conduct a bibliometric analysis and map key developments, trends, and dynamics in the field of Digital Islam literature (Aria & Cuccurullo,

2017). Bibliometrix is a open-source tool that enables comprehensive science mapping analysis and supports a recommended workflow. In addition, the VOSViewer was used in this study. This software emphasizes the visual representation of bibliometric maps (Van Eck and Waltman, 2010). Furthermore, N-Vivo was employed for sentiment analysis of digital Islamic literature. N-Vivo's sentiment analysis tool is suitable for this task because it can autocode unlabeled and unstructured text corpora against a built-in sentiment dictionary, as shown in an experiment on the IMDB dataset, where it achieved an accuracy of 87.63% (Dewi et al., 2023). Therefore, using N-Vivo for sentiment analysis in this study was the most appropriate choice.

To examine the relationship between Islamic and Muslim societies and the digital realm, a comprehensive search strategy was executed using the Scopus database (Donthu et al., 2021). The use of Scopus was justified by its extensive collection of over 90 million documents, which represent Islamic perspectives in the literature (Elsevier Scopus blog, 2023). In addition, its user-friendly search interface and offline analysis capabilities using CSV files enable in-depth searches and analyses (Baas et al., 2020; Zainuddin, 2015). Scopus is a multidisciplinary database suitable for searching scholarly articles on a range of topics including Islam and digital media (AlRyalat et al., 2019). Therefore, Scopus' extensive database coverage, analysis features, and global reach make it an ideal choice for searching the literature related to Islam and digital media. A search string was then used TITLE-ABS-KEY (islam OR "Muslim societies" AND "digital world" OR "digital age" OR technology OR "social media" OR internet OR "online community" OR "cyber space" OR "digital culture" OR "virtual community" OR "online engagement" OR "digital engagement" OR "social networking" OR "online education" OR "e-learning" OR "virtual learning" OR "digital platforms" OR "online platforms").

In this study, the initial step involved identifying pertinent records from the Scopus database, resulting in the successful identification of 2026 documents based on the STRING Criteria. Following identification, the next step entailed the removal of records prior to screening. This process led to the removal of 13 documents due to duplicates, 2 documents due to incomplete content, and 3 documents due to incomplete author information, resulting in a total of 2008 documents remaining for the subsequent screening process.

The subsequent screening process involved evaluating the remaining documents to determine their suitability based on specific inclusion and exclusion criteria. A total of 569 documents were excluded by restricting the subject areas to the social sciences, arts, humanities, psychology, and multidisciplinary studies. Additionally, 239 documents were excluded by restricting the document type to articles, book chapters, or conference papers, and 11 documents were excluded by selecting only the finalized publications. Furthermore, 40 documents were excluded based on specific keyword criteria such as Christianity, Judaism, Hinduism, Buddhism, and Catholicism. In contrast, 89 English-only articles were included. After a rigorous screening process, 1060 studies were deemed eligible and included in the subsequent bibliometric analysis, as depicted in Figure 1.

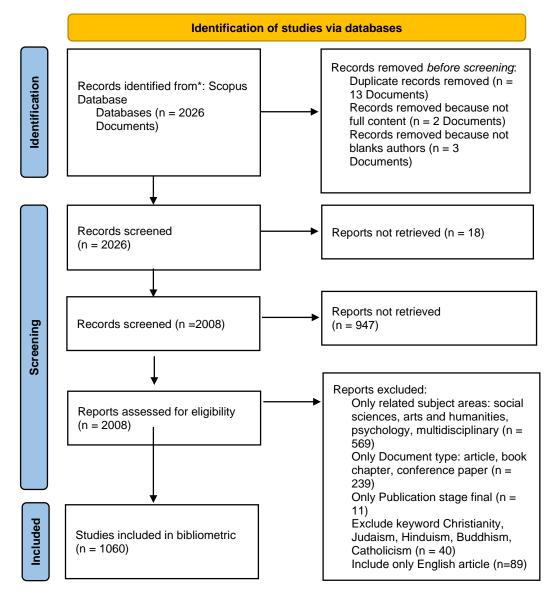


Figure 1. PRISMA Flow Diagram

The retained dataset of 1,060 documents forms the basis for bibliometric analysis, allowing for a detailed examination of publication trends, authorship patterns, thematic concentrations, and citation networks within the literature on Islam and digital engagement. This methodological approach not only highlights the breadth and depth of research in this emerging field but also provides a foundation for identifying gaps in the literature, understanding the evolution of key themes over time, and suggesting avenues for future research. Through this bibliometric analysis, this study provides a structured overview of how digital technologies intersect with Islamic practices and their broader implications for Muslim societies globally, as shown in Table 2.

Table 2. Digital Islamic Literature From Scopus (1969-2024)

Description	Results
Timespan	1969:2024
Sources (Journals, Books, etc)	656
Documents	1060

Annual Growth Rate %	4.77
Document Average Age	7.68
Average citations per doc	8.541
References	42523
DOCUMENT CONTENTS	
Keywords Plus (ID)	1442
Author's Keywords (DE)	2941
AUTHORS	
Authors	1790
Authors of single-authored docs	546
AUTHORS COLLABORATION	
Single-authored docs	622
Co-Authors per Doc	1.86
International co-authorships %	10
DOCUMENT TYPES	
article	731
book chapter	173
conference paper	89
review	67

Following the completion of the bibliometric analysis, the research design incorporated the use of N-Vivo, a qualitative data analysis software, to conduct a sentiment analysis on the same set of 1,060 documents. This phase specifically aims to understand the intricacies of the discourse in the literature. By utilizing sentiment analysis, this study seeks to uncover prevailing attitudes and perceptions regarding the integration of digital technologies in Islamic practices and Muslim societies. The sentiment analysis conducted in N-Vivo involves coding textual data from documents, identifying positive, negative, and neutral sentiments, and analyzing the context in which digital Islam is discussed. Following the bibliometric analysis, the research design incorporated the use of N-Vivo, a qualitative data analysis software, to conduct sentiment analysis on the same set of 1,060 documents. This phase particularly focuses on understanding the nuances of discourse in the literature. By applying sentiment analysis, this study aims to uncover the prevailing attitudes and perceptions regarding the integration of digital technologies in Islamic practices and Muslim societies. Sentiment analysis in N-Vivo involves coding textual data from documents, identifying positive, negative, and neutral sentiments, and analyzing the context in which digital Islam is discussed.

#### **Result and Discussion**

This study presents a comprehensive bibliometric framework for analyzing Digital Islam literature. Using Biblioshiny in R-Studio (Moral-Muñoz et al., 2020), we mapped growth dynamics, identified influential authors, analyzed international collaborations, outlined thematic evolution, explored sentiments towards digital technologies in the Islamic context, assessed the role of women, and identified theoretical frameworks for digital Islamic studies.

#### RQ1: Growth and trends in digital islam literature

The analysis starts by presenting the growth trend of Digital Islam literature since its inception. Based on publication and citation data, we identified time periods with significant surges in research, highlighting the topics and issues that dominate academic discourse. A performance analysis of the 'Digital Islam' literature was conducted to identify key developments and trends in the field. This

included analyzing publications per year, citations, and the most prolific journals. The analysis highlighted how this literature is evolving and which areas are receiving the most attention.

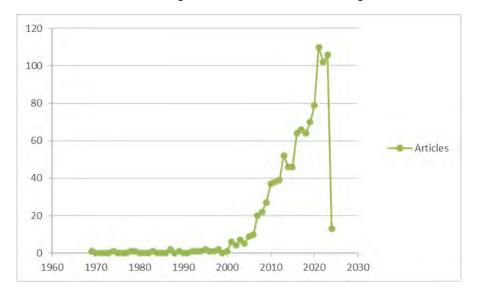


Figure 2. Annual Scientific Production for Digital Islamic Literature

<u>Figure 2</u> shows a significant and consistent increase in the number of publications on Islamic digital literature from 1969 to 2024. The number of publications per year grew slowly at first but then increased rapidly and significantly in the early 2000s. This surge in publications can be attributed to the growing interest in and recognition of the significance of research in digital Islam, particularly in the past two decades. The period between 2007 and 2024 is marked by significant annual growth in research activity. This era is considered pivotal in the development of Islamic digital literature, signifying a heightened focus on exploring and advancing this field. The data reveal the increasing importance placed on digital Islam and progress made in this area.

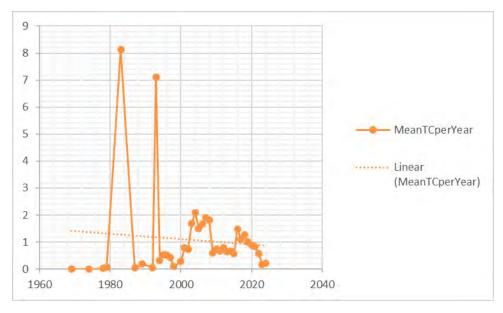


Figure 3. Average citations per year for digital Islam literature

<u>Figure 3</u> shows an analysis of the average citations per year for digital Islamic literature, revealing fluctuations in research recognition and impact over time. Initially, there was a lack of impact from the late 1960s to the early 1980s, with almost no citations per year. However, in 1983, there was a significant increase in the average citations, indicating the importance of research in the field. Since

the 2000s, there has been a consistent upward trend in the average citations, albeit with some fluctuations. The years 2003 and 2004 were notable for having a higher average number of citations, indicating increased recognition of research in Islamic digital literature. The average number of citations stabilized at a lower but still significant level, with another peak in 2016. However, from 2019 to 2024, there was a decline in the average number of citations per year, which may be due to a time lag in citation collection or an increase in less-cited publications. This analysis offers insights into the evolving dynamics of citations over time and academic recognition of Islamic digital research on a global scale.



Figure 4. Most productive journals in Digital Islam literature

Figure 4 highlights that the journal 'Religions' is the most prolific, with 30 articles, followed by the 'Indonesian Journal of Islam and Muslim Societies' and 'Contemporary Islam.' The 'Journal of Arab and Muslim Media Research' and the 'Journal of Religion, Media, and Digital Culture' were also significant contributors. Furthermore, the '2013 5th International Conference on Information and Communication Technology for the Muslim World (ICT4M 2013)' and its 2014 edition contributed to the field. The analysis of publication trends from 1969 to 2024 reveals exponential growth in research output, particularly between 2007 and 2024, marking a new era of increased academic interest in digital Islamic studies. This growth was accompanied by fluctuations in citation recognition, with a noticeable increase since the early 2000s. This paper underscores the diverse platforms supporting digital Islamic research and advocates for enhanced strategies to boost the visibility and impact of these studies.

# RQ2: Influential sources and authors in digital islam literature

This includes an evaluation of their h-index and total number of citations to demonstrate their influence and contribution to the field. This study aimed to understand the basis of their influence, including the quality and impact of their research.

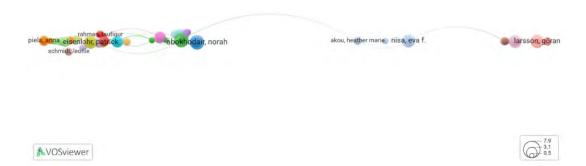


Figure 5. Top Authors and Sources in Digital Islam literature by VOSViewer

Table 3. Top Authors and Sources in Digital Islam literature by Biblioshiny

Author	TI	TC	ТСрҮ
ABOKHODAIR N	6	233	27.24722
INHORN MC	6	496	26.24528
NISA EF	5	148	19.88095
EVOLVI G	6	86	12.91667
CLARKE M	5	153	9.271335
EISENLOHR P	5	137	9.023647
BAULCH E	3	60	8.571429
AL-RAWI A	4	54	5.790909
LARSSON G	5	60	4.94444
ECHCHAIBI N	3	70	4.845238
AL-ZAMAN MS	3	11	3.666667
HASHMI UM	4	13	3.33333
SHABANA A	5	33	3.3
EDIS T	4	37	2.871591
ABDEL-FADIL M	3	12	2.309524
MAHMUD M	5	23	1.924242
HASHIM R	4	13	1.287879
BUNT GR	3	7	0.564103
HANEEF SSS	3	1	0.090909

<u>Figure 5</u> and <u>Table 3</u> provide an analysis of influential authors in the field of Islamic digital literature and their contributions, based on citation metrics derived from VOSviewer and Biblioshiny. This study identified seven authors. Norah Abokhodair emerges as a leading figure with 233 citations across six documents and 27 citations per year, whereas Inhorn MC, with six documents, amasses 496 citations and 26 citations per year, highlighting its significant impact. Eva F. Nisa and Evolvi G, Clarke M, Eisenlohr P, and Baulch E are also noted for their substantial citation counts, indicating their important contributions to the field.

# RQ3: Collaboration patterns in islamic-majority countries

A network analysis of collaborations between countries demonstrates the global reach of digital Islamic research. This study evaluates the intensity and characteristics of collaborations, and identifies patterns that indicate scholarly exchange and joint contributions to global knowledge.

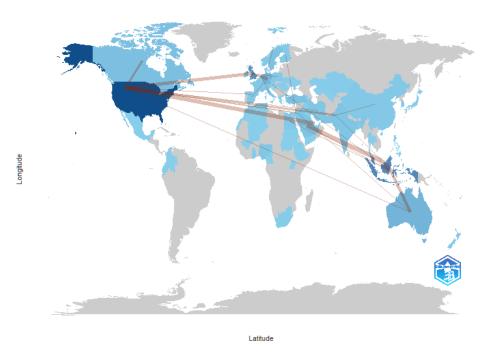


Figure 6. Digital Islam literature collaboration world map

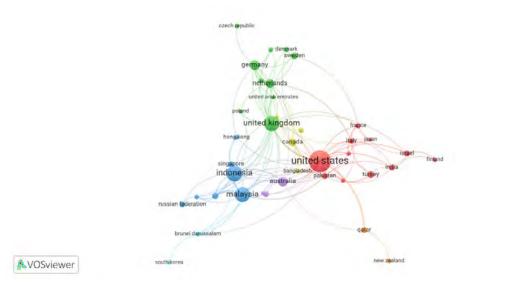


Figure 7. Digital Islam literature co-authorship by Country

In this analysis, I also present the ten countries with the highest number of collaborations in digital Islamic literature research, as well as the ten pairs of countries with the most frequent collaborations.

Table 4. 10 Most Collaborated Countries

Country	Total Collaborations
United States	44

United Kingdom	35	
Malaysia	28	
Indonesia	26	
Australia	18	
Netherlands	18	
Saudi Arabia	17	
Germany	16	
Pakistan	14	
Italy	12	

Table 5. 10 Countries' Most Collaborated Couples

Country 1	Country 2	Collaborations	
Indonesia	Malaysia	7	
Malaysia	Saudi Arabia	7	
United Kingdom	United States	7	
Germany	Netherlands	6	
Qatar	United States	5	
Australia	Indonesia	4	
Netherlands	United Kingdom	4	
Australia	Malaysia	3	
Australia	United States	3	
Canada	United States	3	

The analysis of international collaboration networks in the field of digital Islamic literature, as depicted in Figure 6 and 7 and Tables 4 and 5, reveals significant patterns and relationships among the countries. The analysis of international collaboration in the digital Islamic literature identifies key patterns and relationships among countries, highlighting the central roles of the United States and the United Kingdom as academic hubs. Malaysia and Indonesia also emerged as significant contributors, with these countries demonstrating a high level of participation and strong bilateral collaboration, especially between Indonesia and Malaysia. The study showcases the global nature of research collaboration, with notable connections such as Malaysia-Saudi Arabia and UK-US each recording seven collaborations, and a notable trans-European link between Germany and the Netherlands. This underscores the importance of international cooperation to enhance the understanding of Islam in the digital era, reflecting a complex, interconnected global network of knowledge exchange.

Table 5 shows the analyses of intercountry collaborations in Digital Islam research, focusing on how countries with varied interests and capacities collaborate to understand and apply digital technologies in Islamic contexts. It highlights significant partnerships, such as between Indonesia and Malaysia and Malaysia and Saudi Arabia, which reflect shared cultural and religious backgrounds and the integration of technology with Islamic values. Additionally, collaborations between Western and Muslim-majority countries, such as the US, UK, Qatar, and Germany, underscore the importance of cross-cultural research in this field. The findings emphasize that international cooperation is crucial for a comprehensive understanding of Digital Islam, covering the technological, social, and religious dimensions. Such collaborations facilitate enriched dialogue and innovation within Muslim communities globally, showcasing the global relevance and interdisciplinary nature of digital Islamic research.

### RQ4: Thematic evolution in digital islam literature

Using keyword co-occurrence and thematic evolution mapping techniques, we explored how the research focus has shifted and evolved. These findings offer insights into research dynamics, highlighting new areas and emerging topics in academic dialogue.

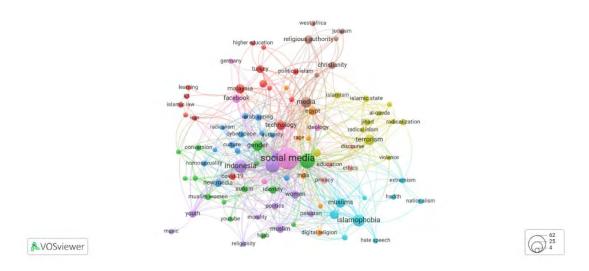


Figure 8. Digital Islam Vos Viewer Co-Occurence Analysis

<u>Figure 8</u> presents a comprehensive analysis of ten thematic clusters identified through specific keywords, each exploring various facets of contemporary societal issues through the lens of digital media, religious identity, and socio-political dynamics.

The first cluster delves into the role of digital platforms, such as Facebook and YouTube, in shaping cultural and religious identities, emphasizing the negotiation of gender politics and social activism within diverse cultural landscapes. This finding highlights the impact of digital media on contemporary discourse and identity formation.

The second cluster examines the interaction between Islamic traditions and modern challenges, such as globalization and the COVID-19 pandemic, focusing on the implications for education, technology, and societal change. This underscores Islamic societies' adaptation to technological advancements and global dynamics.

In the third cluster, the focus shifted to the Middle East, exploring sociopolitical and cultural transformations after the Arab Spring. The role of new media in influencing political activism, religious identity, and cultural values is analyzed, offering insights into the complexities of governance and freedom of expression in the region.

The fourth cluster addresses terrorism, radicalization, and extremism within the context of Islamism, highlighting the influence of jihadist movements and propaganda on global security. It provides a critical view of the sociopolitical challenges posed by radical ideologies.

The fifth cluster explores the intersections of digital culture, activism, and identity politics, particularly the role of social media in advocating for social justice issues, such as Islamophobia and racism. This illustrates how digital platforms facilitate activism and discussions of discrimination.

The sixth cluster looks at Pakistan, focusing on the interplay between digital media, education, ethics, and sociopolitical dynamics concerning Islam, nationalism, and gender. The significance of religious discourse and educational initiatives in shaping societal norms has been emphasized.

The seventh cluster analyzes the religious and cultural dynamics of Christianity, Hinduism, and Judaism in West Africa, exploring the impact of the diaspora, media, and religious authority on community identities and practices.

The eighth cluster investigated the influence of religion, social media, and youth culture in Indonesia, highlighting the role of Instagram and music in shaping moral values and religious expressions among youth.

The ninth cluster considers geopolitical, cultural, and social dynamics in regions such as Egypt, India, and Nigeria, addressing broader themes such as orientalism, race, and secularism. It offers a critical examination of cultural representation and power dynamics.

Finally, the tenth cluster focuses on the intersection of bioethics and Islamic science, examining ethical considerations in scientific advancements guided by Islamic principles. This reflects an interdisciplinary field that merges scientific inquiry with ethical and religious reflections.

Overall, this study elucidates the intricate relationships between digital media, religious identity, and socio-political issues across different cultural and geographical contexts, providing a nuanced understanding of contemporary societal challenges and transformations.

Having identified the various themes in the ten clusters of Vos-Viewer. I then identified how these clusters were thematically interconnected.

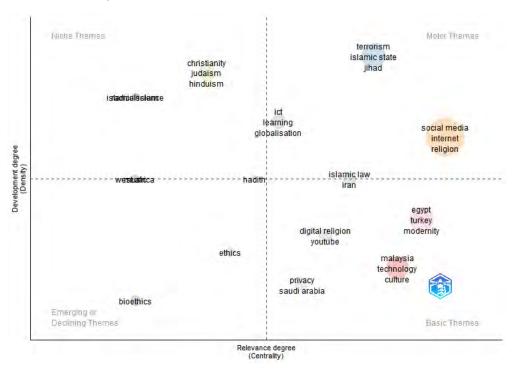


Figure 9. Digital Islam thematic Map analysis Biblioshiny

<u>Figure 9</u> presents a thematic analysis focused on "Digital Islam," which encompasses the practice, interpretation, and communication of Islam within digital environments. The analysis utilized a thematic map to categorize research themes based on their relevance and level of development, employing axes to represent theme importance and density. Key themes were organized into quadrants, illustrating their relationships and significance. Central themes, identified as Motor Themes, include 'terrorism,' 'Islamic state,' and 'jihad,' highlighting their prominence in discussions about the digital impact on these subjects. Basic Themes, such as 'malaysia,' 'technology,' and

'culture,' though fundamental, are recognized as less explored areas. Emerging or Declining Themes like 'bioethics' and 'ethics' suggest new or waning interests, while Niche Themes mention religions like Christianity, Judaism, and Hinduism, indicating specialized but less connected topics. This analysis helps pinpoint research priorities and potential gaps within the field of digital Islamic studies, suggesting areas for further investigation.

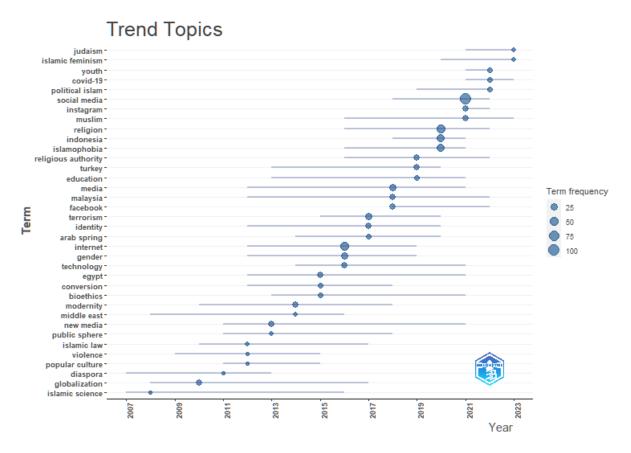


Figure 10. Digital Islam Topic Trends

Figure 10 shows the evolution of topics related to Digital Islam from 2008 to 2021, illustrating a shift towards integrating digital technology within Islamic discourse and practices. Initially, discussions focused on Islamic science and explored the relationship between religion and technology. By 2013, the emphasis had shifted towards the use of new media and communication technologies, such as social media and mobile applications, for education and religious engagement. The year 2016 marked notable interest in the impact of technology on Islamic practices, including the use of digital applications for religious observance and virtual reality for immersive religious experiences. The study highlights a significant trend towards digital platforms that enhance religious practice, accessibility, and community engagement within the Muslim community. By 2021, social media, particularly Instagram, has emerged as a vital space for expressing and debating Islamic identity, showcasing the growing importance of digital spaces for religious dialogue and community development.

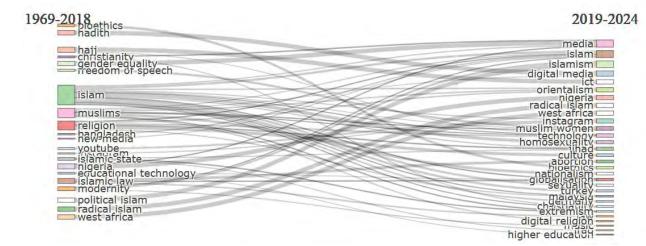


Figure 11. Thematic evolution in Digital Islam literature

Figure 11 illustrates the thematic evolution of Islamic studies from 1969 to 2024, highlighting the emergence of new themes such as digital media, ICT, Instagram, and technology. It notes an increased focus on gender and representation, particularly regarding Muslim women, alongside traditional themes such as hadith and Islamic law. The period also saw a rise in discussions on sociopolitical issues, such as Islamophobia, nationalism, and homosexuality, indicating a broader inclusion of social and political analysis within Islamic studies. The study underscores a shift towards integrating Islam with technology and contemporary debates, expanding the scope of discussion to include global issues such as globalization and radical Islam. This reflects a dynamic and expanding field of study that adapts to contemporary societal changes and technological advancements.

# RQ5: Sentiments analysis towards digital islam

We analyzed the sentiments of the authors of the articles using N-Vivo for a sentiment analysis. The discussions revealed both positive and negative nuances,

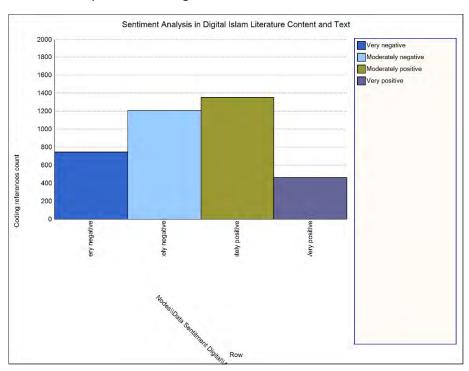


Figure 12. Sentiment Analysis in Digital Islam based on Text

When conducting sentiment analysis on articles using N-Vivo, it is important to note that the results obtained do not reflect the personal sentiments or viewpoints of the authors. The analysis focuses on extracting information and nuances regarding discussions on digital technology, regardless of whether they are positive or negative. The objective of this analysis is to identify themes, patterns, and nuances that emerge from the content, without making any assumptions about the author's attitude towards the subject. Therefore, when stating that 'the discussion reveals both positive and negative nuances, showing complex perceptions of digital technology,' it refers to the range of opinions and views presented in the articles rather than the authors' sentiments. This interpretation clarifies that sentiment analysis is a tool for extracting information and trends from text and that the results reflect the content being analyzed rather than the subjective perceptions of the authors.

Figure 12 presents a sentiment analysis focusing on the interaction between Islam and digital technology, analyzing 748 negative and 1359 positive sentiments from various entries. It reveals a complex and multifaceted discourse, with a dominant, moderately negative sentiment reflecting concerns and criticisms, alongside a significant presence of positive viewpoints that acknowledge the beneficial impact of digital technology on Islam. The analysis underscores the diverse perceptions within the discourse, highlighting both the challenges and opportunities of digital technologies present in contemporary Islamic practice and understanding. This suggests a nuanced landscape of views, balancing skepticism and optimism in the context of the role of digital technology in Islam.

# *RQ6: The role of women in digital islam literature*

This study investigates gender dynamics in the digital Islamic literature by focusing on the participation of female authors. It employs a two-stage methodology to analyze gender representation, beginning with the identification of 100 highly cited authors from a corpus of 1060 articles, leading to the recognition of 59 female authors based on citation frequency. The second stage zeroes in on the most prolific among these female authors, narrowing down to 18 individuals recognized for their significant contributions. This study meticulously examines the gender of authors and their distribution across publications, paying particular attention to the positions held by female authors in the authorship order, which serves as an indicator of their leadership and influence within the field. This approach sheds light on collaboration patterns and leadership roles, aiming to offer a comprehensive understanding of women's roles and contributions in the digital Islamic literature. Furthermore, it explores the broader discourse on gender issues within digital Islamic research, highlighting the acknowledgment and valuation of women's contributions in this scholarly domain.

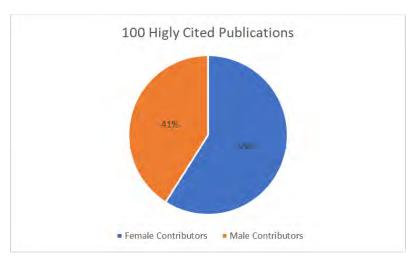


Figure 13. Women's representation in the top 100 most cited papers

Table 6. Top 59 Female Authors by Number of Citations

Authors	Female Authors		Year S	Source title	Cited by
Wersal L. (1995)	Wersal, Lisa	ISLAM AND ENVIRONMENTAL ETHICS: TRADITION RESPONDS TO CONTEMPORARY CHALLENGES	1995	5 Zygon®	31
Stowasser B. (2001)	Stowasser, Barbara	Old shaykhs, young women, and the internet: The rewriting of women's political rights in Islam Global infertility and the	2001	Muslim World	21
Inhorn M.C. (2003)	Inhorn, Marcia C.	globalization of new reproductive technologies: Illustrations from Egypt	2003	Social Science and Medicine	206
Mamadouh V. (2003)	Mamadouh, Virginie	11 September and popular geopolitics: A study of websites run for and by Dutch Morrocans Middle Eastern masculinities in	2003	B Geopolitics	27
Inhorn M.C. (2004)	Inhorn, Marcia C.	the age of new reproductive technologies: Male infertility and stigma in Egypt and Lebanon 'Speaking in one's own voice':	2004	Medical Anthropolog Quarterly	<sup>y</sup> 136
Kosnick K. (2004)	Kosnick, Kira	Representational strategies of Alevi Turkish migrants on open- access television in Berlin	2004	Journal of Ethnic and Migration Studies	37
Fullwiley D. (2004)	Fullwiley, Duana	Discriminate biopower and everyday biopolitics: Views on sickle cell testing in Dakar	2004	Medical Anthropolog Cross Cultural Studies Health and Illness	•
Cohrs J.C.; Moschner B.; Macs J.; Kielmann S. (Cohrs et al., 2005)	Moschner, Barbara	The motivational bases of right- wing authoritarianism and social dominance orientation: Relations to values and attitudes in the aftermath of September 11, 2001	2005	Personality and Socia Psychology Bulletin	l 187
Abdul Karim N.S.; Hazmi N.R. (2005)	Abdul Karim, Nor Shahriza; Hazmi, Norzelatun Rodhiah	Assessing Islamic information quality on the internet: A case of information about Hadith	2005	Malaysian Journal of Library and Information Science	on 27
Inhorn M.C. (2006)	Inhorn, Marcia C.	"He won't be my son": Middle Eastern Muslim men's discourses of adoption and gamete donation Promises of (im)mediate	2006	Medical Anthropolog Quarterly	<sup>y</sup> 112
Schulz D.E. (2006)	Schulz, Dorothea E.	salvation: Islam, broadcast media, and the remaking of religious experience in Mali	2006	6 American Ethnologist	109
Newcomb R. (2006)	Newcomb, Rachel	Gendering the city, gendering the nation: Contesting urban space in Fes, Morocco	2006	6 City and Society	27
Toft M.D. (2007)	Toft, Monica Duffy	Getting religion? The puzzling case of Islam and civil war	2007	<sup>7</sup> International Security	259
Hashim N.H.; Murphy J.; Hashim N.M. (Hashim et al., 2007)	Hashim, Noor Hazarina; Hashim, Nazlida Muhamad	Islam and online imagery on malaysian tourist destination websites	2007	Journal of Computer- Mediated Communication	73
Akou H.M. (2007)	Akou, Heather Marie	Building a new "world fashion": Islamic dress in the twenty-first century	2007	Fashion Theory - Jour of Dress Body and Culture	nal 38
Raiya H.A.; Pargament K.; Mahoney A.; Stein C. (Abu Raiya et al., 2008)	Mahoney, Annette; Stein, Catherine	A psychological measure of islamic religiousness: Development and evidence for reliability and validity	2008	International Journal the Psychology of Religion	for 212

Ho S.S.; Lee W.; Hameed S.S. (Ho et al., 2008)	Ho, Shirley S.; Lee, Waipeng; Hameed, Shahiraa Sahul	Muslim surfers on the internet: Using the theory of planned behaviour to examine the factors influencing engagement in online religious activities	2008	New Media and Society	51
Wyche S.P.; Caine K.E.; Davison B.; Arteaga M.; Grinter R.E. (Wyche et al., 2008)	Wyche, Susan P.; Caine, Kelly E.; Grinter, Rebecca E.	Sun dial: Exploring technospiritual design through a mobile islamic call to prayer application	2008	Conference on Human Factors in Computing Systems - Proceedings	34
van Zoonen L.; Vis F.; Mihelj S.(Van Zoonen et al., 2010)	van Zoonen, Liesbet; Vis, Farida; Mihelj, Sabina	Performing citizenship on YouTube: Activism, satire and online debate around the anti-Islam video Fitna	2010	Critical Discourse Studies	104
Akou H.M. (Akou, 2010)	Akou, Heather Marie	Interpreting Islam through the Internet: Making sense of hijab Muslim women's online	2010	Contemporary Islam	28
Piela A. (Piela, 2010)	Piela, Anna	discussions of gender relations in Islam	2010	Journal of Muslim Minority Affairs	25
Bryant L.D.; Ahmed S.; Ahmed M.; Jafri H.; Raashid Y. (Bryant et al., 2011)	Ahmed, Shenaz	'All is done by Allah'. Understandings of Down syndrome and prenatal testing in Pakistan Mutuality and immediacy	2011	Social Science and Medicine	36
Clarke M.; Inhorn M.C. (Clarke & Inhorn, 2011)	Inhorn, Marcia C.	between marja and muqallid: Evidence from male in vitro fertilization patients in shii lebanon	2011	International Journal of Middle East Studies	25
Akhter W.; Abassi A.S.; Umar S. (Akhter et al., 2011)	Umar, Sadia	Ethical issues in advertising in pakistan: An islamic perspective	2011	World Applied Sciences Journal	23
Mihelj S.; van Zoonen L.; Vis F. (Mihelj et al., 2011)	Mihelj, Sabina; van Zoonen, Liesbet; Vis, Farida	Cosmopolitan communication online: YouTube responses to the anti-Islam film Fitna	2011	British Journal of Sociology	21
Fekete L. (Fekete, 2012)	Fekete, Liz	The muslim conspiracy theory and the oslo massacre	2012	Race and Class	62
Salamandra C. (Salamandra, 2012)	Salamandra, Christa	The Muhannad effect: Media panic, melodrama, and the Arab female gaze	2012	Anthropological Quarterly	32
Afrianty D. (Afrianty, 2012)	Afrianty, Dina	Islamic education and youth extremism in Indonesia	2012	Journal of Policing, Intelligence and Counter Terrorism	29
Halverson J.R.; Way A.K. (Halverson & Way, 2012)	Way, Amy K.	The curious case of Colleen LaRose: Social margins, new media, and online radicalization	2012	Media, War and Conflict	23
Hamayotsu K. (Hamayotsu, 2013)	Hamayotsu, Kikue	The Limits of Civil Society in Democratic Indonesia: Media Freedom and Religious Intolerance	2013	Journal of Contemporary Asia	31
Nisa E.F. (Nisa, 2013)	Nisa, Eva F.	The internet subculture of Indonesian face-veiled women	2013	International Journal of Cultural Studies 2013 5th International	30
Lubis M.; Kartiwi M. (Lubis & Kartiwi, 2013)	Kartiwi, Mira	Privacy and trust in the Islamic perspective: Implication of the digital age	2013	Conference on Information and Communication Technology for the Muslim World, ICT4M 2013	23
Sreberny A. (Sreberny, 2015)	Sreberny, Annabelle	Women's Digital Activism in a Changing Middle East	2015	International Journal of Middle East Studies	24
Lewis R. (Lewis, 2015)	Lewis, Reina	Uncovering modesty: Dejabis and dewigies expanding the	2015	Fashion Theory - Journal of Dress Body and	24

		parameters of the modest fashion blogosphere		Culture	
Abokhodair N.; Vieweg S. (Abokhodair & Vieweg, 2016)	Abokhodair, Norah; Vieweg, Sarah	Privacy & social media in the context of the Arab Gulf	2016	DIS 2016 - Proceedings of the 2016 ACM Conference on Designing Interactive Systems: Fuse	98
Johnson N.F.; Zheng M.; Vorobyeva Y.; Gabriel A.; Qi H.; Velasquez N.; Manrique P.; Johnson D.; Restrepo E.; Song C.; Wuchty S. (Johnson et al., 2016)	Vorobyeva, Y.	New online ecology of adversarial aggregates: ISIS and beyond	2016	Science	84
Afriana J.; Permanasari A.; Fitriani A. (Afriana et al., 2016)	Afriana, J.; Permanasari, A.; Fitriani, A.	Project based learning integrated to stem to enhance elementary school's students' scientific literacy	2016	Jurnal Pendidikan IPA Indonesia	70
Magdy W.; Darwish K.; Abokhodair N.; Rahimi A.; Baldwin T. (Magdy et al., 2016)	Abokhodair, Norah	#ISISisNotIslam or #DeportAllMuslims? Predicting unspoken views	2016	WebSci 2016 - Proceedings of the 2016 ACM Web Science Conference	49
Aguilera-Carnerero C.; Azeez A.H. (Aguilera-Carnerero & Azeez, 2016)	Aguilera- Carnerero, Carmen	Islamonausea, not islamophobia: The many faces of cyber hate speech	2016	Journal of Arab and Muslim Media Research	34
Abokhodair N.; Abbar S.; Vieweg S.; Mejova Y. (Abokhodair et al., 2016)	Abokhodair, Norah; Abbar, Sofiane; Vieweg, Sarah; Mejova, Yelena	Privacy and twitter in Qatar: Traditional values in the digital world	2016	WebSci 2016 - Proceedings of the 2016 ACM Web Science Conference	26
Benigni M.C.; Joseph K.; Carley K.M. (Benigni et al., 2017)	Carley, Kathleen M.	Online extremism and the communities that sustain it: Detecting the ISIS supporting community on Twitter Digital Islamophobia: The Swedish	2017	PLoS ONE	82
Horsti K. (Horsti, 2017)	Horsti, Karina	woman as a figure of pure and dangerous whiteness	2017	New Media and Society	51
Walter B.F. (Walter, 2017)	Walter, Barbara F.	The New New Civil Wars	2017	Annual Review of Political Science Proceedings of the ACM	50
Abokhodair N.; Hodges A.; Vieweg S. (Abokhodair et al., 2017)	Abokhodair, Norah; Vieweg, Sarah	Photo sharing in the Arab gulf: Expressing the collective and autonomous selves	2017	Conference on Computer Supported Cooperative Work, CSCW	33
da Silva R.; Crilley R. (Da Silva & Crilley, 2017)	da Silva, Raquel	"Talk about terror in our back gardens": an analysis of online comments about British foreign fighters in Syria	2017	Critical Studies on Terrorism	25
Evolvi G. (Evolvi, 2017)	Evolvi, Giulia	Hybrid Muslim identities in digital space: The Italian blog Yalla	2017	Social Compass	22
Nisa E.F. (Nisa, 2018a)	Nisa, Eva F.	Creative and Lucrative Dawa: The Visual Culture of Instagram amongst Female Muslim Youth in Indonesia	2018	Asiascape: Digital Asia	61
Evolvi G. (Nisa, 2018a)	Evolvi, Giulia	Hate in a tweet: Exploring internet-based islamophobic discourses	2018	Religions	42
Nisa E.F. (Nisa, 2018c)	Nisa, Eva F.	Social media and the birth of an Islamic social movement: ODOJ	2018	Indonesia and the Malay World	35

(One Day One Juz) in contemporary Indonesia

		, ,			
Baulch E.; Pramiyanti A. (Pramiyanti & Baulch, 2018)	Baulch, Emma; Pramiyanti, Alila	Hijabers on instagram: Using visual social media to construct the ideal muslim woman	2018	Social Media and Society	33
Husein F.; Slama M. (Husein & Slama, 2018)	Husein, Fatimah; Slama, Martin	Online piety and its discontent: revisiting Islamic anxieties on Indonesian social media	2018	Indonesia and the Malay World	27
Dynel M.; Poppi F.I.M. (Dynel & Poppi, 2018)	Dynel, Marta	In tragoedia risus: Analysis of dark humour in post-terrorist attack discourse	2018	Discourse and Communication	25
Klein O.; Muis J. (Klein & Muis, 2019)	Klein, Ofra	Online discontent: comparing Western European far-right groups on Facebook	2019	European Societies	56
Asongu S.A.; Nwachukwu J.C.; Pyke C. (Asongu et al., 2019)	Nwachukwu, Jacinta C.	The Comparative Economics of ICT, Environmental Degradation and Inclusive Human Development in Sub-Saharan Africa	2019	Social Indicators Research	46
Ibtasam S.; Razaq L.; Ayub M.; Webster J.R.; Ahmed S.I.; Anderson R. (Ibtasam et al., 2019)	Ibtasam, Samia; Razaq, Lubna; Ayub, Maryam; Webster, Jennifer R.	"My cousin bought the phone for me. I never go to mobile shops.": The role of family in women's technological inclusion in Islamic culture	2019	Proceedings of the ACM on Human-Computer Interaction	35
Nisa E.F. (Nisa, 2019)	Nisa, Eva F.	Muslim Women in Contemporary Indonesia: Online Conflicting Narratives behind the Women Ulama Congress	2019	Asian Studies Review	22
Salinas E.; Pradell T.; Molera J. (Salinas et al., 2019)	Salinas, Elena; Pradell, Trinitat ; Molera, Judit	Glaze production at an early Islamic workshop in al-Andalus	2019	Archaeological and Anthropological Sciences	21
Aljarah I.; Habib M.; Hijazi N.; Faris H.; Qaddoura R.; Hammo B.; Abushariah M.; Alfawareh M. (Aljarah et al., 2021)	Habib, Maria; Qaddoura, Raneem	Intelligent detection of hate speech in Arabic social network: A machine learning approach	2021	Journal of Information Science	51

Table 7. 18 Top Female Authors by Productivity and Citation

Female Author	Title	Year	Source title	Cited	T. Article
	Global infertility and the globalization of new reproductive technologies: Illustrations from Egypt	2003	Social Science and Medicine	206	
	Middle Eastern masculinities in the age of new reproductive technologies: Male infertility and stigma in Egypt and Lebanon	2004	Medical Anthropology Quarterly	136	
Inhorn, Marcia C.	"He won't be my son": Middle Eastern Muslim men's discourses of adoption and gamete donation	2006	Medical Anthropology Quarterly	112	6
	Mutuality and immediacy between marja and muqallid: Evidence from male in vitro fertilization patients in shii lebanon	2011	International Journal of Middle East Studies	25	
	Medical Cosmopolitanism in Global Dubai: A Twenty-first-century Transnational Intracytoplasmic Sperm Injection (ICSI) Depot	2017	Medical Anthropology Quarterly	9	

		Abrahamic traditions and egg freezing: Religious Women's experiences in local moral worlds	2020	Social Science and Medicine	8	
		Performing citizenship on YouTube: Activism, satire and online debate around the anti-Islam video Fitna	2010	Critical Discourse Studies	104	
van Zoonen, Liesbet		Cosmopolitan communication online: YouTube responses to the anti-Islam film Fitna	2011	British Journal of Sociology	21	3
	How funny can Islam controversies be? Comedians defending their faiths on YouTube	2013	Television and New Media	7		
	Ma Fadda	Performing citizenship on YouTube: Activism, satire and online debate around the anti-Islam video Fitna	2010	Critical Discourse Studies	104	2
	Vis, Farida	Cosmopolitan communication online: YouTube responses to the anti-Islam film Fitna	2011	British Journal of Sociology	21	2
	Mihali Cahina	Performing citizenship on YouTube: Activism, satire and online debate around the anti-Islam video Fitna	2010	Critical Discourse Studies	104	2
	Mihelj, Sabina	Cosmopolitan communication online: YouTube responses to the anti-Islam film Fitna	2011	British Journal of Sociology	21	2
Abokhodair,		Privacy & social media in the context of the Arab Gulf	2016	DIS 2016 - Proceedings of the 2016 ACM Conference on Designing Interactive Systems: Fuse	98	
	#ISISisNotIslam or #DeportAllMuslims? Predicting unspoken views	2016	WebSci 2016 - Proceedings of the 2016 ACM Web Science Conference	49		
	Abokhodair, Norah	Photo sharing in the Arab gulf: Expressing the collective and autonomous selves	2017	Proceedings of the ACM Conference on Computer Supported Cooperative Work, CSCW	33	6
		Privacy and twitter in Qatar: Traditional values in the digital world	2016	WebSci 2016 - Proceedings of the 2016 ACM Web Science Conference	26	
		"Against marrying a stranger:" Marital matchmaking technologies in Saudi Arabia	2017	DIS 2017 - Proceedings of the 2017 ACM Conference on Designing Interactive Systems	20	
		Holy Tweets: Exploring the Sharing of Quran on Twitter	2020	Proceedings of the ACM on Human-Computer Interaction	7	
		Privacy & social media in the context of the Arab Gulf	2016	DIS 2016 - Proceedings of the 2016 ACM Conference on Designing Interactive Systems: Fuse	98	
	Vieweg, Sarah	Photo sharing in the Arab gulf: Expressing the collective and autonomous selves	2017	Proceedings of the ACM Conference on Computer Supported Cooperative Work, CSCW	33	3
		Privacy and twitter in Qatar: Traditional values in the digital world	2016	WebSci 2016 - Proceedings of the 2016 ACM Web Science Conference	26	
	Nisa, Eva F.	Creative and Lucrative Dawa: The Visual Culture of Instagram amongst Female Muslim Youth in Indonesia	2018	Asiascape: Digital Asia	61	5

	Social media and the birth of an Islamic social movement: ODOJ (One Day One Juz) in contemporary Indonesia	2018	Indonesia and the Malay World	35	
	The internet subculture of Indonesian face- veiled women	2013	International Journal of Cultural Studies	30	
	Muslim Women in Contemporary Indonesia: Online Conflicting Narratives behind the Women Ulama Congress	2019	Asian Studies Review	22	
	Internet and Muslim Women	2021	Handbook of Contemporary Islam and Muslim Lives	0	
	Hate in a tweet: Exploring internet-based islamophobic discourses	2018	Religions	42	
	Hybrid Muslim identities in digital space: The Italian blog Yalla	2017	Social Compass	22	
	Emotional politics, islamophobic tweets: The hashtags #Brexit and #chiudiamoiporti	2019	Partecipazione e Conflitto	8	
Evolvi, Giulia	The veil and its materiality: Muslim women's digital narratives about the burkini ban	2019	Journal of Contemporary Religion	8	6
	Introduction: Islam, space, and the internet	2021	Journal of Religion, Media and Digital Culture	4	
	Likes, comments, and follow requests: The instagram user experiences of young Muslim women in the Netherlands	2021	Journal of Religion, Media and Digital Culture	2	
Akou, Heather	Building a new "world fashion": Islamic dress in the twenty-first century	2007	Fashion Theory - Journal of Dress Body and Culture	38	2
Marie	Interpreting Islam through the Internet: Making sense of hijab	2010	Contemporary Islam	28	2
Ibtasam, Samia	"My cousin bought the phone for me. I never go to mobile shops.": The role of family in women's technological inclusion in Islamic culture	2019	Proceedings of the ACM on Human-Computer Interaction	35	2
	For God's sake! Considering Religious Beliefs in HCI Research: A Case of Islamic HCI	2021	Conference on Human Factors in Computing Systems - Proceedings	9	
	Hijabers on instagram: Using visual social media to construct the ideal muslim woman	2018	Social Media and Society	33	
Baulch, Emma	Beyond the Middle Classes, Beyond New Media: The Politics of Islamic Consumerism in Indonesia	2024	Asian Studies Review	0	2
	Hijabers on instagram: Using visual social media to construct the ideal muslim woman	2018	Social Media and Society	33	
Pramiyanti, Alila	Hijabers on Instagram: Using Visual Social Media to Construct the Ideal Muslim Woman	2018	Social Media and Society	27	2
	Accelerating Islamic charities in Indonesia: zakat, sedekah and the immediacy of social media	2020	South East Asia Research	28	
Slama, Martin	Online piety and its discontent: revisiting Islamic anxieties on Indonesian social media	2018	Indonesia and the Malay World	27	3
	Imagining indonesian islam as a center: New mediations and old concepts of power	2020	Archiv Orientalni	4	
	Muslim women's online discussions of gender relations in Islam	2010	Journal of Muslim Minority Affairs	25	
Piela, Anna	How do Muslim women who wear the niqab interact with others online? A case study of a profile on a photo-sharing website	2017	New Media and Society	7	3
	Online Islamic Spaces as Communities of Practice for Female Muslim Converts Who	2015	Hawwa	4	

Wear the Nigab

Sreberny,	Women's Digital Activism in a Changing Middle East	2015	International Journal of Middle East Studies	24	
Annabelle	The internet in Iran: The battle over an emerging virtual public sphere	2010	Internationalizing Internet Studies: Beyond Anglophone Paradigms	3	2
	Glaze production at an early Islamic workshop in al-Andalus	2019	Archaeological and Anthropological Sciences	21	
Salinas, Elena	An early example of glaze technology diffusion in North Africa: The Islamic workshop of Tahert (central Maghreb, Algeria)	2023	Journal of Archaeological Science: Reports	0	2
	Glaze production at an early Islamic workshop in al-Andalus	2019	Archaeological and Anthropological Sciences	21	
Pradell, Trinitat	An early example of glaze technology diffusion in North Africa: The Islamic workshop of Tahert (central Maghreb, Algeria)	2023	Journal of Archaeological Science: Reports	0	2
Address Calaba	Performing citizenship on YouTube: Activism, satire and online debate around the anti-Islam video Fitna	2010	Critical Discourse Studies	104	2
Mihelj, Sabina	Cosmopolitan communication online: YouTube responses to the anti-Islam film Fitna	2011	British Journal of Sociology	21	2

Figure 13, Table 6, and Table 7 present a comprehensive analysis of the role and contributions of female authors in digital Islamic literature, highlighting their significant impact across various disciplines, such as social sciences, medical anthropology, and geopolitics. It shows the diversity of topics covered by these authors, including environmental ethics, women's political rights, and the implications of new reproductive technologies in Middle Eastern societies. This research emphasizes the importance of collaboration among female scholars and the high level of recognition they receive, as evidenced by citations. Notably, Marcia C. Inhorn stands out for her contribution to medical anthropology and reproductive technology. This paper also identifies emerging themes in digital Islamic literature, such as the expression of Islamic identity through social media (Abokhodair & Vieweg, 2016), the intersection of technology with religious practice, and evolving gender dynamics in Muslim societies (Clarke & Inhorn, 2011; Inhorn, 2003, 2004, 2006; Stowasser, 2001). This analysis challenges existing perceptions of gender bias in Islamic studies and the digital humanities, underscoring the vital role female authors play in advancing the discourse on Islam and digital culture (Clarke & Inhorn, 2011; Inhorn, 2003, 2004, 2006).

An analysis of the most prolific female writers in the digital Islamic literature reveals a dynamic and diverse field. Their contributions not only enrich the academic world but also provide deep insights into the complexities of digital Islam and gender dynamics.

#### *RQ7:* Most cited references in digital islam literature

This study uses bibliometric indicators, such as the most cited references by the author and the most cited sources and references, to analyze the theoretical framework that dominates studies on the interaction between Islam and digital technology.

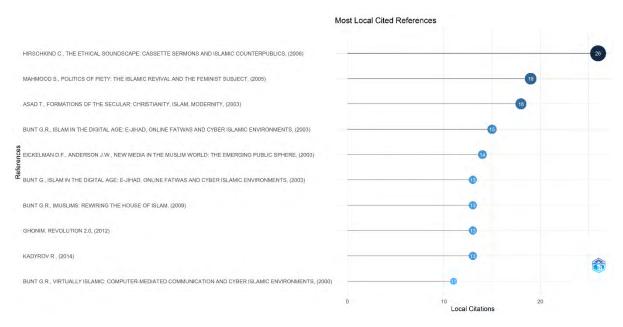


Figure 14. Most cited Reference by Author in Digital Islam

<u>Figure 14</u> shows the names of the authors of the documents referenced in the 1060 articles analyzed in this study. The table below provides a detailed summary of the 15 most influential authors.

Table 8. 15 Most Influental References Authors

Authors	Citation	
Bunt G.R.	91	
Foucault M.	71	
Roy O.	71	
Campbell H.	66	
Mandaville P.	66	
Eickelman D.F.	64	
Anderson J.W.	63	
Hirschkind C.	60	
Asad T.	55	
Inhorn M.C.	55	
Bunt G.	53	
Campbell H.A.	53	
Slama M.	50	
Mahmood S.	48	
Ahmed S.	42	

<u>Table 8</u> shows the authors who made the most significant contributions to the 1060 pieces of literature examining the relationship between Islam and digital technology, based on the number of citations to their work in the documents analyzed.

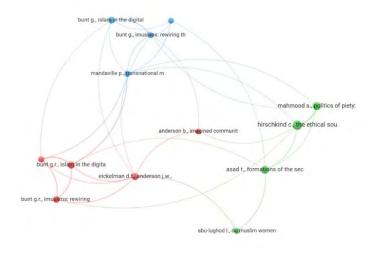


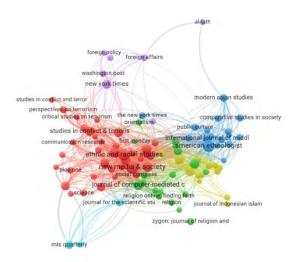
Figure 15. Most Cited References in Digital Islam

**♣**VOSviewer

Table 9. 15 Most Cited References in Digital Islam

Authors	Article	Citations
	The Ethical Soundscape: Cassette Sermons and Islamic	
Hirschkind C. (2009)	Counterpublics	26
Mahmood S. (2012)	Politics of Piety: The Islamic Revival and the Feminist Subject	19
Asad T. (2010)	Formations of the Secular: Christianity, Islam, Modernity Islam in the Digital Age: E-Jihad, Online Fatwas and Cyber Islamic	18
Bunt G.R. (2003) Eickelman D.F.,	Environments	28
Anderson J.W. (2003)	New Media in the Muslim World: The Emerging Public Sphere	14
Bunt G.R. (2009)	iMuslims: Rewiring the House of Islam	23
Bunt G.R. (2000)	Virtually Islamic: Computer-Mediated Communication and Cyber Islamic Environments	11
Mandaville P. (2006)	Transnational Muslim Politics: Reimagining the Umma	11
Abu-Lughod L. (2015)	Do Muslim Women Need Saving?	10
	Imagined Communities: Reflections on the Origin and Spread of	
Anderson B. (1991)	Nationalism	10
Roy O. (2004)	Globalized Islam: The Search for a New Ummah	10

<u>Figure 15</u> and <u>Table 9</u> show the significant works frequently cited in the literature on the correlation between Islam and technology, emphasizing their impact on shaping academic comprehension of the topic.



**♣**VOSviewer



Figure 16. Most Cited Sources

Table 10. 15 most cited sources

Sources	Citation
American Ethnologist	94
Ethnic and Racial Studies	93
New Media & Society	103
Contemporary Islam	62
Journal of Communication	73
Journal of Computer-Mediated Communication	64
Journal of Ethnic and Migration Studies	63
New Media in the Muslim World: The Emerging Public Sphere	63
The New York Times	56
Information, Communication & Society	56
Social media + Society	46
International Journal of Communication	46
Computers in Human Behavior	47
The Muslim World	49
Indonesia and the Malay World	49

The interaction between Islam and digital technology is a dynamic and interdisciplinary field of study, as observed from the analysis of various data sources in Figure 16 and Table 10. Multiple disciplines such as anthropology, sociology, and media studies contribute to this research by offering diverse perspectives on the topic. The most-cited references indicate a significant focus on the influence of new media and communication technologies on Muslim life. Scholars such as Bunt and Hirschkind are recognized for their influential contributions to the field. Several journals, including "American Ethnologist," "New Media & Society," and "Contemporary Islam," Contemporary Islam, are important sources for publishing current and influential studies on this subject. Research in this area considers both global and local contexts, recognizing the unique social, cultural, and political dynamics at play. Critical topics that are frequently explored include identity, online Muslim communities, religious practices in the digital age, and debates on religious authority in digital spaces. Overall, this study combines theoretical analysis with empirical case studies to understand the impact of technology on the social and spiritual dimensions of Muslims' lives.

#### **Discussion**

When did the discourse on Islam and digital technology begin?

Based on bibliometric analysis, digital Islam has gained increasing academic interest since 1969, with a notable surge beginning in the early 2000s. This surge can be attributed to two main factors: global repercussions of the post-9/11 world and the rapid advancement of information and communication technologies. The 9/11 terrorist attacks significantly altered global perceptions of Islam, intensifying the need to understand its digital representations as internet usage expanded. Concurrently, the proliferation of Internet and mobile technologies reshaped how Muslim communities engaged in religious, social, and cultural practices, leading scholars to investigate these dynamics through digital lenses, resulting in rich academic discourse featured in journals and conferences such as 'Religions,' Indonesian Journal of Islam and Muslim Societies,' 'Contemporary Islam,' and the 'International Conference on Information and Communication Technology for the Muslim World.

Studies have identified several stages of technological adoption in religious practice. Evolvi (2021) identified four phases of digital-religious evolution from the mid-1990s to the late 2010s: the use of religious websites, apps, and social media for religious purposes. Bunt (2000) emphasized the integration of the Internet into religious practices, which allows remote access to sermons and participation in religious experiences. These changes are also reflected in the field's publication and citation trends, with significant spikes in 2003, 2004, and 2016 and a decline from 2019 to 2024, highlighting the ongoing development and understanding of how digital technologies shape Islamic practices and identity.

Historical, technological, and sociopolitical factors have influenced the adoption of technology in Islamic contexts, as seen in Rapoport (1983) and Robinson (1993). These studies, while not directly addressing Digital Islam, provide foundational insights into the intersection between technology and Islam. Rapoport critiqued the contemporary definition of 'modern terrorism' and emphasized the importance of considering historical contexts, while Robinson discussed the impact of print technology on Islamic knowledge transmission, noting initial resistance within Muslim societies. As a result, the adoption of technology in Islamic contexts is influenced by a complex interplay of these factors, which helps elucidate the ways in which traditional Islamic practices and communities adapt to and are transformed by digital innovations.

This finding is consistent with various studies that suggest that discourse on Islam and digital technology has a long history dating back to the 1970s (Halevi, 2021, pp. 1975–2010). This discourse focused on religio-technological innovations and the development of devices to meet the needs of Muslims. Over three decades, as Halevi (2021) noted, there was an exponential growth in inventions aimed at the Islamic market, such as the first Islamic electronic watch and "The Muslim Xbox." Moreover, the integration of Islamic knowledge into Muslim society was made possible by the introduction of printing, which greatly influenced the emergence of the concepts of "tradition" and "modernity" (Roper, 2017). Furthermore, the development of digital progress has influenced the expansion of terrorist attitudes and rapid development of cyber jihad among cyber ummah (Czornik, 2024).

How has digital technology and social media evolved and affected Muslim communities?

The analysis on influential authors in digital Islam literature, as analyzed using VOS Viewer, identifies Norah Abokhodair, Sarah Vieweg, Marcia C. Inhorn, Eva F. Nisa, Giulia Evolvi, Morgan Clarke, Patrick Eisenlohr and Emma Baulch as key contributors with substantial citations highlighting their impact.

Abokhodair's research examined the intersection of technology, privacy, and cultural norms in the Arabian Gulf. In 2016, she conducted three studies. The first study, as a co-author, found that social media and digital platforms can predict one's attitude towards Muslims, even without directly mentioning Islam or related terms (Magdy et al., 2016). The second study explored how cultural traditions and religious values influence privacy perceptions among Arab Gulf citizens in terms of their technological age (Abokhodair & Vieweg, 2016). Abokhodair et al. (2016) also conducted research on Americans' attitudes towards Islam and Muslims on Twitter after the Paris attacks using predictive modelling. In 2017, Abokhodair et al. conducted two studies. The first study investigated photo-sharing practices among Arabian Gulf users and found that these practices are influenced by a collective self, which outweighs the individual self in shaping photo-sharing behaviors (Abokhodair et al., 2017). The second study analyzed the socio-technical and cultural factors influencing the perception and use of matchmaking technology in Saudi Arabia, providing insights into the design of marriage matchmaking technology (Al-Dawood et al., 2017). Finally, in 2020, Abokhodair examined how Quranic verses are shared on Twitter, revealing that online platforms not only extend religious life offline, but also facilitate new forms of religious expression and community solidarity (Abokhodair et al., 2020). This study deepens our understanding of the relationship between digital technology, culture, and religion in the Arabian Gulf.

Marcia C. Inhorn's research delves into the complexities of infertility and new reproductive technologies, particularly in the Middle Eastern context. Her work explores the globalization of in vitro fertilization (IVF) technologies, the stigma and secrecy surrounding male infertility in pronatalist societies, and religious and cultural resistance to options such as gamete donation and adoption among Muslim men (Inhorn, 2003, 2004, 2006). Inhorn also examined the influence of religious authority on reproductive technology in Shia Islam, portrayed Dubai as an emerging hub for medical tourism specializing in technologies such as intracytoplasmic sperm injection (ICSI), and discussed the reception of elective egg freezing among religiously observant women from Abrahamic faiths (Inhorn, 2011; Inhorn, 2017; Clarke & Inhorn, 2020). Her studies highlight the interplay between cultural norms, religious beliefs, and modern medical technologies in shaping infertility and family planning approaches.

Eva F. Nisa's research examines the ways in which Indonesian Muslim women interact with digital technology and Islamic culture, and how this shapes their religious and social identities. The 2013 study focused on an online subculture of veiled women in Indonesia who used the Internet to promote Islam and challenge perceptions of oppression. Digital platforms allow women to form subcultures and strengthen their religious communities (Nisa 2013). In 2018, Nisa conducted research on the use of Instagram by young Indonesian Muslims and demonstrated that social media can be utilized as a platform for religious education and identity expression through creative forms of da'wah (Nisa, 2018b). He also found that the One Day One Juz (ODOJ) movement, which employs WhatsApp to promote Quran recitation, exemplifies how digital tools can enhance religious mobilization (Nisa, 2018c). In 2019, Nisa conducted research on Indonesia's inaugural congress of female Muslim scholars, examining the impact of this event on women's visibility and influence on Islamic discourse (Nisa, 2019). Nisa's most recent research in 2021 examined the broad impact of the Internet on Muslim women globally, demonstrating that digital platforms empower them to challenge traditional religious authorities and to express diverse religious and gender identities (Nisa, 2021). Nisa's research demonstrated the significant impact of the Internet and social media on religious, cultural, and social dynamics among Muslims in Indonesia and globally.

Giulia Evolvi's research explores the intersection of Islam, identity, and digital spaces. She focuses on how digital platforms serve as arenas for expressing and negotiating Muslim identities, particularly

within European contexts, where Islam is often seen as conflicting with local values. In her work, Evolvi examined the narratives of young Italian Muslims on the blog "Yalla Italia," highlighting how they challenge mainstream media stereotypes and advocate social change, including quicker citizenship processes (Evolvi, 2017). She also analyzed online Islamophobia, detailing how Internet discourses enhance existing anti-Muslim sentiments by framing Muslims as incompatible with Western values (Evolvi 2018). Additionally, Evolvi discusses the materiality of Muslim women's dresses, such as the burkini, in digital narratives to counteract stereotypes and assert their rights within public spaces (Evolvi, 2019a, 2019b). Lale Mahmudova and Giulia Evolvi's (2021) study explores the impact of Instagram on young Dutch Muslim women, highlighting how the platform facilitates identity expression but also exposes users to privacy issues. Their work shows how these women navigate their religious and cultural identities in a Western context, using digital spaces. Additionally, a special issue edited by Evolvi and Maria Chiara Giorda (2021) discussed the redefinition of religious and spatial boundaries through digital platforms. This issue argues that digital spaces create "hybrid religious performances" that link local and global contexts, affecting how religious practices are performed and understood today. These studies provide insights into the complex interplay between digital environments, religious identity, and community belonging. Her studies collectively illustrate how digital environments act as "third spaces" for hybrid religious performances, challenging and reshaping traditional notions of religious identity in the contemporary digital era.

Morgan Clarke's research encompasses several key themes related to kinship, reproductive technologies, and Islamic law within the context of the Middle East, notably in Lebanon. Here, a concise paragraph summarizing his work along with the publication years is as follows: Morgan Clarke investigates the interplay between Islamic legal traditions and modern reproductive technologies, revealing how traditional concepts such as milk kinship (2007b) adapt to contemporary challenges such as donor eggs and surrogacy, thereby persisting rather than diminishing modernity. His work on kinship and biomedicine (2007a, 2007b) explores notions of 'closeness' in the context of new medical technologies and their implications for social and ethical norms in Lebanon. In another study, Clarke (2008) examined how kinship is shaped by new reproductive technologies, the overarching themes of sexual morality, and its political ramifications in the Middle East. Clarke, along with C. Marcia Inhorn examined the relationship between religious authority and assisted reproductive technologies in Shi'i Islam, focusing on the dynamics between senior clerics and their followers in the context of infertility treatments (Clarke & Inhorn, 2011). Through these studies, Clarke provides insightful analyses of how traditional practices and new technologies coalesce in the modern Islamic world.

Patrick Eisenlohr's scholarly work extensively explores the intricate relationships between religious practices, media technology, and notions of authenticity and authority within the context of Mauritian Islam. His studies detail how modern media technologies not only transform religious practices, but also challenge and redefine traditional notions of religious authority and the mediation of the sacreds. In 2009, Eisenlohr examined the dialectics of mediation and immediacy in religious settings, showing how theological assumptions about mediation shaped the use of media technology (Eisenlohr, 2009). By 2010, he had further delved into how sound reproduction technologies impacted the transnational circulation of devotional discourse (Eisenlohr, 2010). His research emphasizes the interaction between language as a medium and other media technologies in religious life (Eisenlohr, 2011). In 2013, Eisenlohr explored how religious performances in Mauritius act as diasporic heritage, legitimizing claims on citizenship through the materiality of religious practice (Eisenlohr, 2013). Finally, in 2014, he analyzed the public and mediated aspects of religion among Mauritian Muslims, highlighting the complex relationship between media practices

and religious experiences (Eisenlohr, 2014). Through these studies, Eisenlohr provides valuable insights into the dynamic interplay between religion, media, and cultural identity in a globalized world.

Emma Baulch, in collaboration with Alila Pramiyanti and Julian Millie, engages in research that combines themes of Islamic consumerism, social media, and identity within the Indonesian context. Pramiyanti and Baulch (2018) focused on how members of Indonesia's Hijabers' Community use Instagram to perform and negotiate aspects of their identity. This involves framing their presentation within the context of "dakwah" (Islamic preaching) and middle-class aesthetics, creating a unique intersection between religious duty and social media performance. This performance on Instagram is analyzed as both a variant of post-feminist empowerment and a form of electronically-mediated Muslim preaching, highlighting a complex "composite habitus" where global digital culture and Islamic communication intersect.

Millie and Baulch (2024) expand on these themes by exploring the broader implications of Islamic consumerism in Indonesia beyond the confines of the middle class. They discuss the increasing interplay between religion and consumerism facilitated by new technologies, the role of social media in shaping Islamic authority, and the need for a renewed focus on the materiality and social meaning of Islamic practices. This work suggests a dynamic and evolving landscape in which traditional boundaries within Islamic practice are reshaped by modern consumers and digital cultures.

Researchers such as Abokhodair Norah and C. Marcia Inhorn, Eva F. Nisa, Giulia Evolvi, Morgan Clarke, Patrick Eisenlohr, and Emma Baulch provide in-depth insights into the influence of digital technologies on Islamic practice and identity. Abokhodair's research focuses on the impact of digital technologies on privacy and social interaction, whereas Inhorn's work delves into the implications of reproductive technologies for social views. Nisa's research explored the digital expressions of religious and social identities. Evolvi examined representations of Muslim identity in the media, Clarke assessed the adaptation of Islamic law to biotechnology, Eisenlohr examined changes in religious authority brought about by media technology, and Baulch highlighted the impact of social media on consumerism and dawah. Collectively, these studies demonstrate how technology affects religious interpretations and practices in the modern era.

The bibliometric analysis of female authors in digital Islamic literature shows their significant impact across diverse fields, such as social sciences, medical anthropology, and geopolitics, covering topics such as environmental ethics, women's political rights, and reproductive technologies in the Middle East. This research highlights the importance of female collaboration and its high recognition in academia with Marcia C. Inhorn noted her contribution to the field of medical anthropology. The paper also explores emerging themes, such as the expression of Islamic identity through social media and the evolving gender dynamics in Muslim societies, challenging traditional perceptions of gender bias in Islamic studies and digital humanities. This highlights the crucial role female authors play in advancing discussions on Islam and digital culture.

This bibliometric analysis highlights the critical intersection between digital technologies and religious practices, particularly through the work of scholars, such as Abokhodair and Nisa. These authors document how digital platforms facilitate new forms of religious expression among Muslim women, offering them a space to negotiate and redefine their religious and social identities. This directly correlates with theoretical discussions on cultural empowerment and preservation, where digital media is seen as a catalyst for sociocultural change in Islamic societies (Buchanan & Husain, 2022). Abokhodair and Nisa's findings suggest that, while digital media enables broader expressions

of identity, it also complicates traditional religious practices by introducing new modes of engagement that can both support and challenge existing religious norms (Campbell, 2012).

In addition, keyword occurrence mapping and thematic evolution techniques identified ten thematic clusters covering a range of contemporary social issues, including the role of digital platforms in shaping cultural and religious identities, the interaction between Islamic traditions and modern challenges, and socio-political dynamics in the Middle East after the Arab Spring. In addition, the research also shows how digital media influence terrorism, activism, and identity politics in various regions, including West Africa and Indonesia. The thematic map analysis further categorizes these themes based on their relevance and stage of development, identifying key themes such as terrorism and the Islamic state as central to the discussion on the impact of digital technology on religious discourse. Over time, from 2008 to 2024, the study observed a prominent shift towards integrating digital technologies in Islamic practices and an expansion of discussions to include pressing global issues such as globalization, Islamophobia, and digital activism, indicating a dynamic evolution in the field of Islamic studies.

Thematic analysis identifying key clusters of digital activism, terrorism, and religious tolerance provides a deeper understanding of how digital media impacts religious tolerance and extremism (Arzroomchilar, 2022). For example, the correlation between the proliferation of digital platforms and the increase in extremist content and counter-discourses promoting tolerance underscores the dual effects of digital technologies (Arzroomchilar, 2022). This reflects theoretical assertions about the risks of digital transformation, such as cyber jihad and the spread of extremist ideologies, while highlighting the potential of digital media to foster a more inclusive understanding of religious diversity (Bunt, 2003; Czornik 2024).

Moreover, the emergence of themes related to the virtualization of traditional religious practices, such as pilgrimages, correlates with changes in religious education and practices (Khairudin and Mohammad 2021). The shift from in-person religious instruction to digital forums not only democratizes access to religious knowledge but also changes the underlying dynamics of religious authority and learning. This is in line with the theoretical impact noted in the transformation of religious education, where digital media reshapes the interaction between clerics and society, potentially weakening traditional authoritative structures while expanding access (Sheikh Khairudin & Mohammad, 2021).

Bibliometric findings also suggest a significant correlation between increasing digital literacy and the evolution of religious practices and identities. As digital literacy increases, so does the engagement and reinterpretation of Islamic content online, leading to positive outcomes such as increased educational opportunities, and negative outcomes such as the potential for misinterpretation and misuse of religious texts (Araniri et al., 2021).

#### What is digital islam?

This bibliometric analysis has revealed some important findings in the form of influential authors, the most impactful articles, topic trends, topic evolution, and the most cited references among authors who have written articles on digital Islam. The main findings described above can be the basis for formulating what and how this concept of digital Islam is actually. In this discussion, I present in more detail the question of what digital Islam is based on the results of bibliometric research.

Before discussing the topic of digital Islam, two important terms in the discourse of Islam in the digital age often appear as the basis of writers' thoughts: digital religion and the term digital ummah or cyber ummah. Therefore, it is important to first position our understanding of the two terms.

Digital religion encompasses the intersection, transformation, and coexistence of religious practices with digital technologies and cultures. It includes the expression, experience, and negotiation of religious beliefs, practices, communities, and identities in digital spaces, such as social media, websites, online forums, and virtual reality environments. The field studies how online and offline religious activities are interconnected and how digital technologies influence traditional religious practices (Campbell and Evolvi 2020). It also explores the emergence of new forms of spirituality and religious engagement supported by the digital world (Campbell & Evolvi, 2020). The study of digital religion also focuses on the impact of digital media and the Internet on how religious adherents practice their faith, interact with religious communities, and integrate their religion with digital culture, thereby changing the landscape of contemporary religiosity (Campbell, 2017).

The concept of "Cyber Ummah" or "Virtual Ummah" refers to the Islamic community in cyberspace that emerged with the advent of the Internet in the Muslim world (Khamis, 2018). Cyber Ummah represents an online community that transcends geographical, ethnic, and cultural boundaries (Khamis 2018). The Internet enables global communication among Muslims and interactions between different groups of Muslims and non-Muslims (Khamis 2018). It creates an egalitarian and interactive virtual community that allows for the formation of new identities and resistance in the online Islamic discourse. Cyber Ummah has implications for the creation of diverse identities and resistance, shaping various Islamic discourses and sites in cyberspace (Khamis 2018). Online sites and platforms function as virtual marketplaces in which ideas and concepts about Islam and Muslims are exchanged. Muslims use online resources to access mainstream and alternative interpretations of Islamic doctrines and scriptures. Overall, the Cyber Ummah is a phenomenon that reflects the changes in Muslim societies online and offline and plays an important role in shaping the religious, social, and cultural aspects of Muslim communities in the digital age.

The bibliometric analysis of digital Islamic literature reveals key contributors such as Norah Abokhodair, Sarah Vieweg, Marcia C. Inhorn, Eva F. Nisa, Giulia Evolvi, Morgan Clarke, Patrick Eisenlohr, and Emma Baulch. A substantial number of citations indicate a significant impact. These researchers have provided valuable insights into the impact of digital technologies on Islamic practices and identity. Abokhodair focuses on privacy and social interaction, Inhorn examines reproductive technologies, Nisa explores digital expressions of religious and social identity, Evolvi studies media representations of Muslim identity, Clarke assesses the adaptation of Islamic law to biotechnology, Eisenlohr investigates the impact of media technology on religious authority, and Baulch highlights social media's influence on consumerism and dawah. The collective findings of these studies showcase the impact of technology on contemporary religious interpretation and practice.

With respect to Digital Islam, an analysis of the research findings revealed several key aspects of digital Islam. First, the use of digital technology, especially social media, has changed the dissemination of religious information and formation of religious discourse among Muslim communities around the world. Individuals can now seek religious knowledge independently through the Internet, which challenges traditional religious authorities and digitally empowers them (Robinson 1993; Turner 2007). In addition, the Internet has facilitated global connectivity and opened up spaces for international discussions and interpretations of Islam. This expansion challenges the authority of traditional Islamic scholars and allows for diverse interpretations and translations of Islam through digital platforms (Robinson, 1993).

Third, social media platforms can perpetuate negative stereotypes about Islam and Muslims, contributing to the (re)production of discursive power that influences the public's understanding of religion (Eickelman 2003). Moreover, the use of sound reproduction technologies in religious practices and the sharing of religious content on digital platforms reflects contemporary adaptations in Islam, signaling the emergence of Digital Islam.

The use of technology in Muslim communities is influenced by traditional values and cultural expectations, particularly in terms of privacy and social media interactions. In addition, the role of Muslim women in digital spaces is significant. Women use and influence the digital space for religious, social, and political purposes, emphasizing the importance of gender in discussions on Digital Islam (Nisa, 2018c, 2018a, 2021). In addition, the implementation and utilization of digital technologies in religious contexts, such as matchmaking technologies and sharing Quranic verses on Twitter, illustrate the potential of digital technologies to enhance religious communities and practices (Abokhodair et al., 2020).

To understand Digital Islam, it is necessary to consider the social, cultural, and political contexts in which Digital Islam exists. In the thematic analysis related to digital Islam, various themes have been identified, such as "terrorism," "Islamic state," and "jihad" being the main research focus, while underlying themes such as "Malaysia," "technology," and "culture" are recognized as important but less explored. The shift in topics from 2008 to 2021 reflects the use of technology in religious practices, theological debates, and exploration of religious identity. Social media, especially Instagram, has become a popular platform for sharing religious, political, and cultural perspectives and discussing issues such as Muslim identity and Islamophobia. There is also increasing emphasis on the intersection of Islam and technology, including gender issues and the representation of Muslim women. Traditional religious themes and new themes such as "bioethics" and "hajj" are also important. Sociopolitical issues such as "Islamophobia" and "nationalism" are also of concern.

Based on the results of this analysis, digital Islam can be defined as the phenomenon of dynamic interactions between Islamic teachings, practices, and digital technology. This includes the utilization of information and communication technologies in religious contexts, which not only changes the way religious information is accessed and disseminated but also affects the social and cultural fabric of global Muslims.

The definition of Digital Islam includes the following aspects.

- Digital-Religious Interaction: Digital Islam refers to how Islamic religious practices such as study, worship, and preaching are integrated with digital tools. This includes the use of apps for reading the Quran, online forums for religious discussions, and social platforms for disseminating Islamic teachings.
- 2. Online Religious Authority and Identity: The rise of online scholars and preachers reflects the shift in religious authority from traditional to digital. Digital platforms allow these figures to widely influence religious thought without geographical boundaries, which significantly changes the power dynamics within the Islamic community.
- 3. Virtual Community (Cyber Ummah): The concept of Cyber Ummah or Virtual Ummah emphasizes the formation of Muslim identities and communities in cyberspace, which crosses national and cultural boundaries, creating new spaces for dialogue and interaction among Muslims from different backgrounds.
- 4. The Impact of Technology on Religious Practices and Interpretations: Technology not only facilitates religious practices but also challenges traditional interpretations and paves the

- way for new ones. This includes the use of social media to discuss religious issues that can influence traditional norms and views.
- 5. Responses to Social and Cultural Issues: Digital Islam also summarizes the Muslim community's response to social and cultural issues through digital media. These include online campaigns against Islamophobia, discussions on the integration of Muslims into non-Muslim societies, and the promotion of tolerance and understanding through online dialog.

Digital Islam is, thus, a multidisciplinary study involving theology, sociology, information technology, and cultural studies. It reflects how digital technologies have not only changed the ways of communication and interaction but also fundamentally affected the way Muslims understand, practice, and promote their religion in today's global and digital age.

#### Theoretical frameworks in digital islam

This study aimed to understand the key theories and concepts that have shaped the field by identifying and analyzing the most cited documents and references in the literature. It also evaluates these theoretical frameworks to gain insights into how they explain the relationships between Islamic religious practices and the use and impact of digital technology. This study critically assesses the effectiveness and relevance of these theoretical approaches and suggests new directions for future research in this area.

As previously found, this study identified each of the 15 most-cited references, their sources, and authors. Some of the key concepts from these 15 references are as follows:

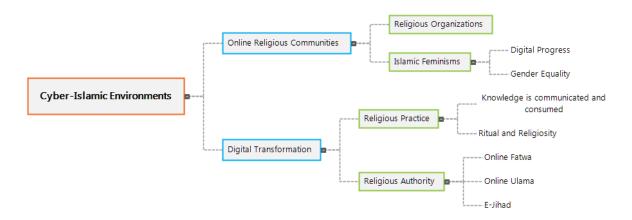


Figure 17. "Islam in the Digital Age" and "Hashtag Islam" by Gary R. Bunt

As shown in Figure 17, Bunt (2003, 2018) examined the transformative role of technology in Muslim religious practices, especially on the Internet. This work introduces the concept of the Cyber Islamic Environment, which has facilitated new forms of religious expression, such as E-jihad and online fatwas. These developments allow for the wider dissemination of Islamic views and decision-making processes. The book also addresses the complexities of cultural mixing within online discourse, which presents opportunities for broadening the reach of traditional teachings and challenges to preserving religious authenticity. Furthermore, Bunt discussed the impact of technology on the expansion of Arabic culture and language, alongside concerns about online radicalization and identity formation. The author advocates constructive engagement with technology, emphasizing that innovation and adaptation are crucial for maintaining the essence of religious practices in the digital era. Bunt (2018) discussed the development of cyber-Islamic environments (CIES) and the

relationship between technology and Islamic practices. The book reviews several key themes and perspectives, including the evolution of CIES as influenced by developments in Internet technology and how it is changing religious discourse and authority in Islam. The author uses an interdisciplinary approach by drawing on insights from fields such as sociology, anthropology, religious studies, and political science, to understand the complex interactions between technology and Islam. One important theme addressed in this book is the impact of technology on Islamic religious authority online, including the challenges faced by traditional authorities in the digital age, and the role of online platforms in shaping contemporary understandings of religious leadership. The book also explores the role of social media in shaping Muslim networks and influencing relationships between Muslim individuals and communities in various contexts.

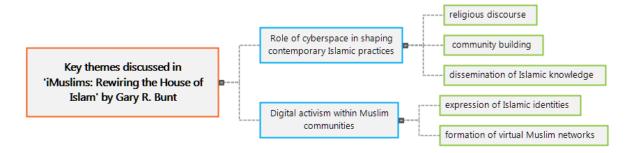


Figure 18. iMuslims: Rewiring the House of Islam by Gary R. Bunt

As shown In Figure 18, Bunt (2009) provides a comprehensive examination of the impact of online platforms on Islamic activism, jihadi networks, Muslim identity, and the spread of religious teaching. The book "iMuslims: Rewiring the House of Islam" by Gary R. Bunt explored the impact of digital technologies on Islamic practices and communities, discussing the intersection of technology, religion, and society. Bunt's work is informed by his previous research in books such as "Virtually Islamic" and "Islam in the Digital Age" (El-Nawawy, 2009). The book delves into themes such as the role of cyberspace in shaping contemporary Islamic practices, the emergence of digital activism within Muslim communities, and the reconfiguration of religious authority in online spaces (Weimann, 2010). Bunt's analysis highlights how the Internet serves as a platform for religious discourse, community building, and dissemination of Islamic knowledge. Additionally, the book examines how digital technologies influence the expression of Islamic identities and the formation of virtual Muslim networks (Weimann 2010).

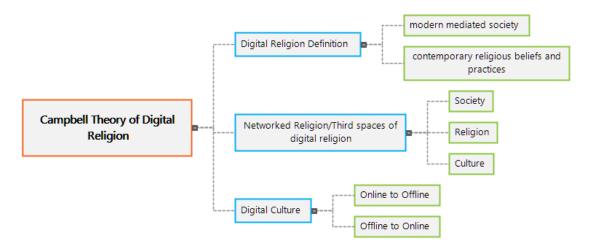


Figure 19. Campbell Theory of Digital Religion

The next expert who was also frequently cited by the authors in the analyzed articles was Heidi Campbell (2016). As Figure 19 shows, the concept often taken from Campbell is a digital religion. Exploration of the phenomenon of "Digital Religion" includes the study of how religion and new information communication technologies, especially the Internet, interact with each other. It examines how religious beliefs, practices, and communities manifest and transform in digital spaces, including online religious communities, virtual worship spaces, and religious rituals performed online (Campbell & Vitullo, 2016). Campbell's theory of Digital Religion studies the intersection of modern, highly digitized societies with contemporary religious beliefs and practices (Campbell & Vitullo, 2016; Helland, 2016). Digital religion is not only concerned with the existence of religion in digital media but also involves the interaction between social and cultural components and elements of digital society. Within this theory, there is the concept of "networked religion" which focuses on official religious activity in the digital world, as well as the "third space of digital religion," which addresses everyday or lived religion in a digital context (Campbell & Connelly, 2020). Campbell's theory also studies how divine revelation is presented and negotiated in digital culture, as well as how material religious practices and artifacts are packaged in online form (Sheldon & Campbell, 2021).

Researchers have explored the interconnections between online and offline religious realms, highlighting how traditional religious contexts blend with new digital contexts (Campbell 2012). In the Western context, "Digital Religion" has emerged as a way to discuss and study online religious practices that influence offline religious communities and institutions. The concept recognizes the unique influence of the Internet and digital technologies in shaping religious practices and beliefs as well as changing perceptions of religiosity in society. Digital Religious Studies is considered a subfield of broader disciplines, such as Internet Studies and Media, Culture and Religion Studies.

Research in this field was rooted in the mid-1990s, focusing on the use of the Internet by religious groups and its potential implications for religious beliefs and practices (Rapoport, 1983; Robinson, 1993). It also examines how religious groups move religious practices to the Internet, creating online communities and houses of worship, and conducting rituals online (Tsuria et al., 2017). Helland (2005; 2005) distinguishes between "religion online" versus "online religion," with "religion online" referring to information presented and controlled by traditionasl religious organizations or leaders, while "online religion" relates to religious innovation and collaboration that creates new understandings of religion through online environments.

Subsequent studies frequently cited in 1060 were spread across multiple authors. In contrast, the authors cited the work of Bunt and Campbell. Therefore, a focused summary of the most cited studies is presented in <u>Table 11</u>.

Table 11. Insight from other most cited references in Digital Islam

No.	Paper Title	Insight
1	The Ethical Soundscape: Cassette	This book examines how cassette sermons became a
	Sermons and Islamic Counterpublics	powerful medium in Egypt for shaping public discussions on morality, demonstrating the role of new media in forming Islamic counterpublics.
2	Politics of Piety: The Islamic Revival and the Feminist Subject	Mahmood's work is a critical analysis of the Islamic revival movement in Egypt, focusing on women's participation. It challenges Western perceptions of agency and subjectivity, providing insights into the complex interplay between religion and gender.
3	Formations of the Secular: Christianity, Islam, Modernity	Asad explores the concept of secularism as it has evolved in Christian and Islamic contexts, questioning the assumptions of modernity and its impact on religious practices.

4	New Media in the Muslim World:	This book discusses the transformative role of new media
	The Emerging Public Sphere	technologies in Islamic societies, highlighting how they have
		contributed to the emergence of a public sphere where
		traditional and modern values intersect.
5	Transnational Muslim Politics:	Mandaville examines how Muslim politics transcends
	Reimagining the Umma	national boundaries, exploring the concept of the Umma
		(the global Muslim community) in the context of
		globalization and technological advances.
6	Do Muslim Women Need Saving?	Abu-Lughod critiques the Western narrative of rescuing
		Muslim women, arguing for a deeper understanding of
		cultural practices and the diverse experiences of women
		within Islamic societies.
7	Imagined Communities: Reflections	Though not exclusively about the Islamic world, Anderson's
	on the Origin and Spread of	seminal work on nationalism offers critical insights into how
	Nationalism	national identities are constructed, which is relevant to
		understanding Muslim identity and solidarity.
8	Globalized Islam: The Search for a	Roy discusses the challenges and transformations within
	New Ummah	Islam in the context of globalization, focusing on the search
		for a new form of Muslim community that transcends
		traditional geographic and cultural boundaries.

Table 11 explores the dynamic role of digital platforms in shaping contemporary Islamic identities, practices, and communities, emphasizing their function as transformative public spaces. It highlights how digital spaces facilitate discussions of morality and ethics, challenge traditional boundaries, and enable the formation of new counterpublics within Islamic communities. Notably, this study addresses the impact of digital engagement on gender dynamics, offering perspectives on the resistance and reaffirmation of societal norms. It also delves into the intersection of secularism, modernity, and religion in digital contexts, enriching the discourse on Muslim societies' navigation of traditions and modernity. Furthermore, this study examines the concept of the Ummah in the digital age, focusing on how digital platforms redefine community boundaries and facilitate transnational connections. This collection of scholarly works provides a comprehensive overview of digital Islam, presenting it as a field in which traditional and modern elements intersect, highlighting the active role of digital spaces in reshaping Islamic identity, authority, and community in the 21st century.

Furthermore, with respect to the methods used in the study of digital Islam, It has been mentioned before that digital Islam is a sub-study of digital religion (Campbell, 2012, 2017; Campbell & Connelly, 2020; Helland, 2016; Sheldon & Campbell, 2021). Therefore, from the perspective of methods, the author agrees with what has been concluded by Tsuria et al. (2017) that textual analysis, interviews, and ethnography are the dominant research methods employed in the study of digital religion. The textual analysis method is divided into textual analysis in digital environments, textual analysis with digital tools, and textual analysis with a digital approach/frame. The interview method was divided into interviews in digital environments, interviews with digital tools, and interviews with digital approachs/frames. Ethnography is divided into digital, virtual, and online ethnography.

Furthermore, based on the analysis of the study and the main insights from most references, including the theories used and taken in digital Islam references, the following theoretical framework is formulated in this research:

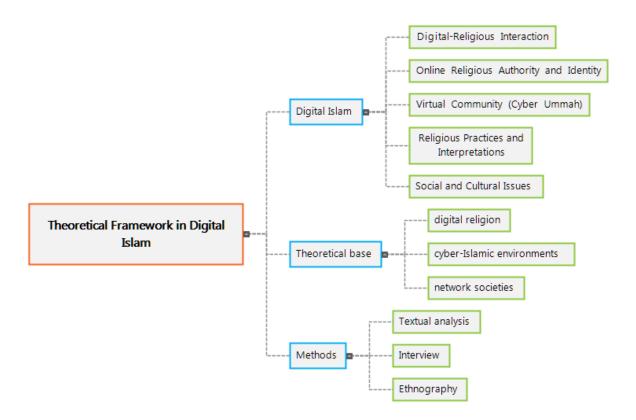


Figure 20. Theoretical Frameworks in Digital Islam

<u>Figure 20</u> presents a theoretical framework for the study of Digital Islam, in which the concept of interaction between religion and digital technology is the main focus. Within this framework, the study of digital Islam includes how religious authority and identity are explored and represented in online environments through practices such as the establishment of virtual communities or Cyber Ummahs that digitally connect global Muslims. Another important aspect is how religious practices and interpretations are adapted and interpreted in digital contexts, highlighting the social and cultural issues arising from these interactions.

Furthermore, a frequently used theoretical foundation is the concept of digital religion and the theory of the Cyber Islamic environment, which is an incarnation of the interaction between information technology and religion in a networked society. This approach opens a new perspective for understanding the dynamics of religious change in the context of modernity and globalization.

The most frequently used methods in this field include text analysis to understand narratives and discourses in digital content, interviews to gain an in-depth understanding of individuals engaged in these activities, and ethnography, which allows direct observation of religious practices in digital environments. Through this approach, this research aims to provide a comprehensive picture of how Islam is interpreted and practiced in the digital age.

#### Conclusion

The discourse on Islam and digital technology began to gain significant academic attention in the early 2000s, catalyzed by the global impact of the post-9/11 world and the swift advancements in digital communication technologies. This period marked a pivotal shift in how Islamic practices and communities engaged with the digital world, leading to an increase in scholarly interest, as demonstrated by academic publications and citations. Studies have explored the integration of

digital technologies into traditional Islamic practices and the emergence of online platforms as new venues for religious expression and community building.

A bibliometric analysis of digital Islamic literature identified several key contributors in the field. Norah Abokhodair, Sarah Vieweg, Marcia C. Inhorn, Eva F. Nisa, Giulia Evolvi, Morgan Clarke, Patrick Eisenlohr, and Emma Baulch are among the prominent researchers who have explored a wide range of topics related to digital Islamic literature. These themes encompass privacy and social interactions, reproductive technologies, digital expressions of religious and social identity, media representations of Muslim identity, adaptations of Islamic law to biotechnology, the impact of media technologies on religious authority, and the influence of social media on consumerism and da'wah (Islamic outreach). This analysis suggests that digital technologies have significantly shaped Islamic religious interpretations and practices in the modern era.

Research on digital Islam has progressively uncovered the complex layers of how technology influences religious practices, community dynamics, and identity within Muslim societies. The academic contributions from Authors such as Norah Abokhodair and Francis Robinson have highlighted the nuanced ways in which digital platforms facilitate both the continuity and transformation of Islamic practices. This evolution is evidenced in the growing body of literature examining digital religious practices, the shifting roles of religious authority, and the broader sociopolitical implications of technology on Islamic communities.

This study presents three foundational insights into digital Islamic studies, addressing key questions regarding the nature of digital Islam, its theoretical framework, and the significant role of women. First, it positions digital Islam as a critical subfield of digital religion, highlighting the intersection of Islamic traditions and digital technologies. This intersection catalyzes transformative shifts in religious practices, community formations, and identity reconstructions in the digital sphere, challenging conventional paradigms and forging a new understanding of Islam in the digital age.

Moreover, the research articulates the concepts of 'digital Muslim' and 'digital ummah' as central to this field. The 'digital Muslim' refers to individuals whose Islamic practice and community engagement take place in digital environments, and embodies the broader concept of the 'digital Ummah' - a global online Muslim community that transcends traditional geographic and cultural boundaries. This global community exemplifies significant changes in how religious information is disseminated and how Muslims worldwide connect, share, and interact in the digital age. The synonymous use of digital Muslims and ummah in this study underscores the seamless integration of individual and collective Islamic identities in digital spaces, demonstrating the expansive reach and communal solidarity of Islam across the digital landscape.

This study delves into the theoretical frameworks that frame digital Islam, drawing on disciplines such as digital religious studies, sociology, and anthropology to construct a comprehensive analytical lens. By engaging with theories such as Heidi Campbell's "digital religion," Gary R. Bunt's "cyber-Islamic environments," and discussions of digital and social identity by Henri Tajfel, John Turner, and Manuel Castells' concept of "network societies," the research enriches our understanding of the socio-cultural and technological forces that shape the digital Muslim experience.

Significantly, women's empowerment and active participation in digital Islamic spaces have emerged as key findings that challenge traditional gender narratives. Women writers and scholars enrich the discourse, navigate, and influence the digital religious landscape through their contributions. The strategic use of digital platforms for education, socialization, and activism not only challenges

established gender roles but also underscores women's empowerment and self-representation in the context of digital Islam.

In sum, the findings of this study highlight the transformative impact of digital Islam, characterized by the integration of tradition and digital innovation, the elucidation of multidisciplinary theoretical frameworks, and the dynamic engagement of women. By exploring the nature of digital Islam, the synonymous relationship between digital Muslims and Ummah, and the empowering role of women, this research significantly advances the field of action studies.

This study had some limitations that should be considered in future research. The use of the Scopus database may lead to missing important publications that are not indexed on this platform, such as Google Scholar, WoS, and other databases; thus, important data or developing trends may be missed. This study also had limitations in the timeframe of the study, as some studies were still in the process of being published or had not been published at the time of analysis. Nonetheless, the study achieved significant findings, including mapping key developments and trends in the incorporation of digital technologies in Islamic practices. These findings also emphasize the important role of digital platforms in education and religious engagement. This research provides a rich understanding of digital Islamic studies and demonstrates the evolving relationship between technology and religious practices, which can serve as a basis for further research.

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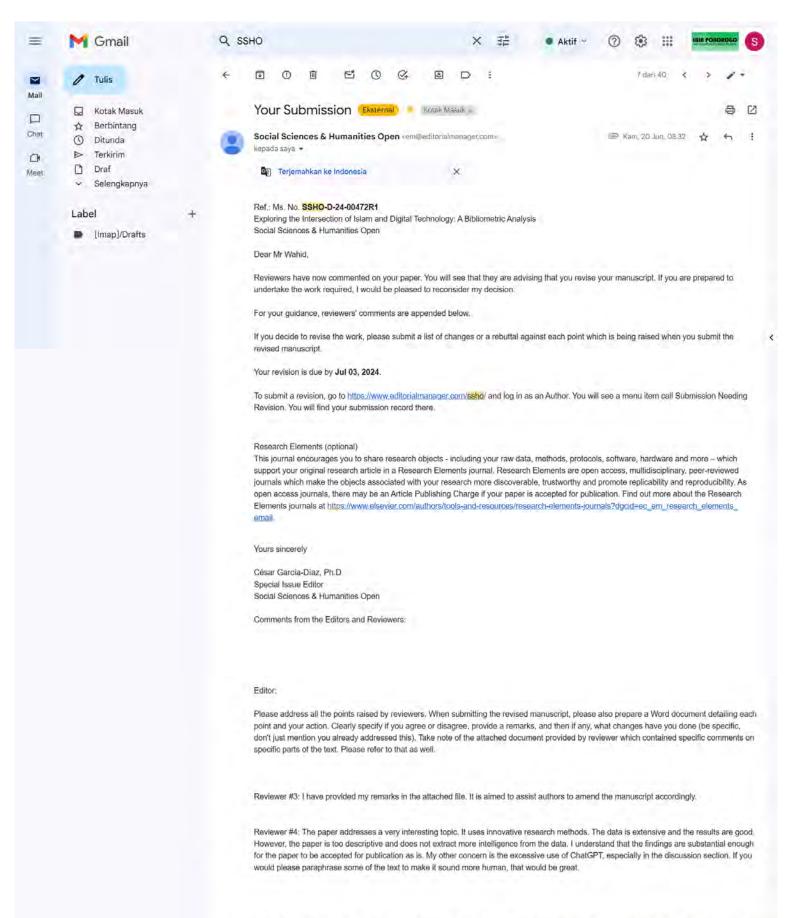
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## Exploring the Intersection of Islam and Digital Technology: A Bibliometric Analysis --Manuscript Draft--

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Abstract:	This study aims to identify key developments and trends in digital Islamic studies, including influential authors and their contributions, patterns of collaboration, and the evolution of themes in the literature of the 1060 Scopus database from to 1969-2024. This study also examines the representation of women and the main theoretical frameworks in the field. Biblioshiny, R-Studio, VOSViewer, and N-Vivo were used for bibliometric and sentiment analyses. This study found that academic attention to Islam and digital technologies has increased since the early 2000s with a shift towards online platforms for religious expression and community building. The study also examines the role of key authors, such as Norah Abokhodair, Sarah Vieweg, Marcia C. Inhorn, Eva F. Nisa, Giulia Evolvi, Morgan Clarke, Patrick Eisenlohr and Emma Baulch. The analysis of trends in the digital Islamic literature shows an increasing integration of digital technologies in Islamic practice from 2008 to 2021, with a focus on social media and mobile applications for religious education and engagement. Since 2021, Instagram has become an important space for the expression and discussion of Islamic identity. The research examines digital Islam as a major area of digital religion, exploring the role of the 'digital Muslim' in the 'digital Ummah.' This study reveals how digital Islam blends conventional and modern techniques, employs a cross-disciplinary theoretical approach, and significantly includes women. These findings demonstrate that women are more visible in highly cited studies.
Response to Reviewers:	

# Exploring the Intersection of Islam and Digital Technology: A Bibliometric Analysis

This study aims to identify key developments and trends in digital Islamic studies, including influential authors and their contributions, patterns of collaboration, and the evolution of themes in the literature of the 1060 Scopus database from to 1969-2024. This study also examines the representation of women and the main theoretical frameworks in the field. Biblioshiny, R-Studio, VOSViewer, and N-Vivo were used for bibliometric and sentiment analyses. This study found that academic attention to Islam and digital technologies has increased since the early 2000s with a shift towards online platforms for religious expression and community building. The study also examines the role of key authors, such as Norah Abokhodair, Sarah Vieweg, Marcia C. Inhorn, Eva F. Nisa, Giulia Evolvi, Morgan Clarke, Patrick Eisenlohr and Emma Baulch. The analysis of trends in the digital Islamic literature shows an increasing integration of digital technologies in Islamic practice from 2008 to 2021, with a focus on social media and mobile applications for religious education and engagement. Since 2021, Instagram has become an important space for the expression and discussion of Islamic identity. The research examines digital Islam as a major area of digital religion, exploring the role of the 'digital Muslim' in the 'digital Ummah.' This study reveals how digital Islam blends conventional and modern techniques, employs a cross-disciplinary theoretical approach, and significantly includes women. These findings demonstrate that women are more visible in highly cited studies.

Keywowds: Islam, digital religion, digital Islam, bibliometric analysis, women in digital Islam

#### Introduction

The significance of digital Islam in Muslim societies is rapidly growing as digital technologies become more prevalent. It is imperative to understand how Islam adapts and is represented in this new medium. Fortunately, despite a lack of consensus on the definition of "digital Islam," it is clear that it represents a unique manifestation of Islam in the digital context, with new identities, practices, and emerging communities (Campbell, 2012; el-Nawawy & Khamis, 2010; Zaid et al., 2022). Some view it as the use of digital tools to practice Islam (Al-Farizi et al., 2022; Arifin et al., 2022; Mustafa et al., 2020), whereas others argue that it extends it (al-Mutairi, 2022; el-Nawawy & Khamis, 2010; Lengauer, 2018; Olson, 2017).

According to Gary R. Bunt (2009), the term "digital Islam," lacks a single clear definition and admits that it is unable to provide a precise explanation. Bunt acknowledges that the term can have varied interpretations, depending on an individual's perspective. He noted that there is no universally accepted definition of the term.

"It depends in part on one defines Islam, and whether elements within that definitionhave a digital edge. Digital Islam may be explicitly online, on a website, blog, YouTube Video, or, more recently, an entry on Twitter. It may be explicitly 'religious' in orientation, relating to specific practices and concepts associated with core Islamic values and precepts. However, the articulation of digital Islam may also relate to specific cultural and political causes, which may be implicitly 'Islamic' in orientation".

Gary Bunt's (2009) approach categorizes digital Islam into different aspects based on how it integrates with Islamic practices. These aspects include using digital platforms to disseminate religious teachings and information, utilizing social media and online forums for discussions related

to Islam, and employing mobile applications for religious activities, such as prayer times and Quran recitation. Additionally, digital Islam is seen as a means of activism, in which digital platforms are utilized for political or social issues from an Islamic perspective. Finally, digital Islam in culture is classified as the integration of Islamic elements into the digital media. Bunt's approach demonstrates the adaptability of digital Islam to technology and its impact on the daily lives of Muslims worldwide, presenting opportunities for further investigation into the intersection of religion and technology (Bunt, 2009). Therefore, a strong theoretical foundation in digital Islamic studies is crucial for a deeper understanding of the implications of digital tools and platforms on Islamic practices and beliefs. Campbell (2017) and Chaudhary (2020) have addressed this issue by highlighting the importance of a theoretical approach to studying digital Islam and the significance of digital ethics in Islam. Both contributions emphasize the need for a blend of theoretical rigor and practical flexibility in the study of digital Islam, and the importance of ongoing research and dialogue in understanding digital transformation in Islam.

Another term related to the concept of digital Islam, also known as digital Muslims or digital Ummah, refers to individuals who actively use digital platforms and technology to express and practice their faith, connect with other Muslims globally, and engage in religious activities (Spalek & Imtoual, 2007). It is becoming increasingly common because of increasing digital literacy among Muslims, especially the younger generation, who use digital devices to strengthen their Islamic identity, access religious content, and participate in online religious discussions (Akmaliah & Burhani, 2021). The concept of e-Ummah, or virtual Ummah, has also emerged, where Muslims gather online to build a sense of brotherhood and unity (Jamil et al., 2020). The Internet also gives young Muslims the option to join digital communities, where they can interact through thoughts, attitudes, and discussions, rather than limited by geographical location or social and family ties (Kirmayer et al. 2013).

A variety of research on digital Islam has arisen from the lack of a single definition of this concept. The investigation of Islam and the Internet commenced in the late 1990s as academics-initiated research on how religious individuals and organizations employed the Internet to disseminate religious content and messages (Eickelman, 2003; Ibahrine, 2020). Scholars argue that the advent of digital media in the Arab and Islamic realms could facilitate religious authorities to propagate their standardized and unaltered perspectives (Sisler, 2011). On the other hand, others contend that these ideas appear ineffective and oversimplified because of digital media's minimal influence on the culture of Arab and Islamic realms (el-Nawawy & Khamis, 2010). Additionally, the digitalization of Islam is viewed as a test of the conventional understanding of Muslim identity (Ibahrine, 2014; Martin, 2004).

Research indicates that new media and digital technology impact religious hierarchies, challenge established societal structures, and offer a platform for religious groups that were previously underrepresented (Bunt, 2018; Ibahrine, 2020). The construction of Islam as a social and cultural entity continues to evolve in response to societal advancements and technological innovations (Sorgenfrei, 2021).

Studies in Muslim societies have investigated the relationship between Islam and digital technology, focusing on topics such as religiosity and consumer attitudes (Souiden & Rani, 2015), Islamic education among youth (Alkouatli et al., 2023), media representation and Islamophobia (Saeed, 2007), the impact of Muslim communities on Islamophobia (Bowe & Makki, 2016), the emergence of hybrid Muslim identities in the digital realm (Evolvi, 2017), and women's empowerment in the Islamic context (Gökhan, 2019; Nisa, 2021). These findings demonstrate the intricate interplay among technology, culture, digital Islam, and societal norms.

When discussing digital Islam, several key aspects have yet to be fully explored. One of these is the lack of a single agreed-upon definition of digital Islam, which has led to a range of methodologies, approaches, and theories being employed to study this phenomenon. This diversity can be difficult for those unfamiliar with the issue to comprehend, particularly the Muslim community itself, which is the focus of the discussion. Another important factor to consider is the relationship between Islam and digital platforms, which can shed light on the cultural shifts that occur in society. It is worth noting that the impact of digital technology on religious behavior may be more pronounced in conservative and traditional environments than in more inclusive and open environments (Ibahrine, 2020).

As research in this field continues to advance, bibliometric analysis is a useful method for studying the discourse of adaptation and representation of Islam in the digital realm. This method helps to identify research gaps, trends, and the state of the art, which can be valuable for developing scholarly projects (José De Oliveira et al., 2019). By analyzing the most influential authors, literature, and publishers, as well as the thematic evolution in the field of Digital Islam, this method enables a comprehensive assessment of research related to digital Islam. Additionally, it provides a theoretical framework for future research. This study is important for understanding the complex relationship between digital technology, Islam, and religious identity, and can inform the development of inclusive policies and practices for the global Muslim community by incorporating research questions about the representation of women in digital Islamic works.

Regarding the bibliometric analysis method in research on the theme of 'digital Islam,' previous studies have not specifically used this term in their discussion. Instead, they focused on themes such as religious moderation, Islamic studies and new media, terrorism issues, Islamic communication, and Da'wah, as shown in Table 1.

Table 1. Bibliometric analysis research with themes similar to 'digital Islan

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Focus	Title	Methods	Result
Representation of Islam in social media	The representation of Islam within social media: a systematic review (Hashmi et al., 2021)	Systematic review and thematic analysis from Scopus and Web of Science databases.	Found varying depictions of Islam ranging from liberal to extremist views. The majority of empirical studies suggested a negative portrayal of Islam in social media.
Religious moderation	Bibliometric Analysis: Religious Moderation (Prahesti, 2022)	Bibliometric analysis using Google Scholar with Publish and Perish and VOSviewer for data analysis.	Identified significant growth in articles on religious moderation, with a surge in 2020-2022, providing a foundation for further exploration in this field.
Islamic studies and new media	The Bibliometric Analysis of Islamic Studies Research and New Media Based on Biblioshiny (Yunus Mustofa & Rizal Mustofa, 2023)	Bibliometric analysis using Scopus data and Biblioshiny for statistical and visual analysis.	Detected keyword trends and author/journal prominence, highlighting shifts in research focus with an increased emphasis on gender and authority within the context of Islam and new media.
Terrorism in Indonesia	Bibliometric analysis of publications trends on the terrorism issues in Indonesia (Yumitro et al., 2023)	Bibliometric analysis with data from Scopus and visualization using VOSviewer.	Observed an upward trend in terrorism-related research, with Indonesia being prominently featured due to its unique demographic and

Islamic studies	Systematic Review Studi Islam: A Bibliometrics Analysis (1941-2022) (Latuconsina, 2023)	Bibliometric analysis using the R package "Bibliometrics" for data analysis and thematic analysis.	Mapped the evolution of Islamic studies through bibliometric data, showing key topics, author contributions, and the most cited works over the decades.  Provided insights into
Islamic communication and da'wah	Analisis Scientometrik Tentang Komunikasi dan Dakwah Islam dalam Literatur Ilmiah (Izza, 2023)	Scientometric analysis with VOSviewer and NVivo 12 Plus for bibliometric mapping and frequency analysis.	publication patterns and thematic clusters in Islamic communication and da'wah, highlighting media and communication methods in da'wah activities.
Science and Islam	Computational Bibliometric Analysis of Research on Science and Islam with VOSviewer: Scopus Database in 2012 to 2022 (D. F. Al Husaeni & Al Husaeni, 2022)	Bibliometric analysis using VOSviewer for data mapping.	Showed a general decline in publication volume over the years with a peak in 2012, identifying key research areas such as Islamic perspectives on education and science.
Digital transformation in Islamic learning	Computational Bibliometric Analysis: Can Digital Transformation Improve the Quality of Islamic Learning? (D. N. Al Husaeni & Rahmat, 2023)	Bibliometric analysis to identify trends and main topics in the field of digital transformation in religious education.	Concluded that digital transformation has positively influenced the quality of religious education, making learning more interactive and varied.
Digital entrepreneurship with Islamic values	Research Trends on Digital Entrepreneurship with Islamic Values: Bibliometric Analysis (2012-2022) (Supriadi & Nur, 2023)	Bibliometric analysis using Scopus and VOSviewer for data visualization.	Documented an emerging focus on digital entrepreneurship within Islamic contexts, noting an increase in research interest and potential areas for development in social entrepreneurship and sustainability.

Studies using bibliometric methods and systematic literature reviews have made significant contributions to our understanding of how Islam is interpreted, practiced, and discussed in the digital realm. Research on social media has revealed negative narratives and public perceptions of Islam, while research on new media has traced the evolution of the relationship between Islam and technology. Additionally, research on digitalization in Islamic learning has shown that technology can enhance religious education. However, despite these contributions, there is still no research that addresses the need for a comprehensive definition or theoretical framework for "Digital Islam." Existing research tends to focus on practical applications and specific cases, rather than developing a broader framework. Therefore, further research is needed to provide a more comprehensive understanding and theoretical foundation that can inform future research, policies, and practices in digital Islamic space. Based on these objectives, the research questions of this study were as follows:

RQ1: How does a performance analysis of the 'digital Islamic literature reveal key developments and trends in this field?

RQ2: Who are the influential authors in the 'digital Islam' literature and what are their main contributions? Why have they become influential?

RQ3: How do patterns of collaboration between Islamic-majority countries affect the output and impact of 'digital Islamic research?

RQ4: How does bibliometric analysis reveal the thematic evolution of the 'digital Islam' literature and what are the major themes that have evolved over time?

RQ5: How does sentiment anysis in ' the literature reveal perceptions and attitudes towards digital technology in an Islamic context?

RQ6: What is the involvement and representation of women as the main authors in the 'digital Islam' literature, and what are the main articles that address gender issues?

RQ7: What are the main theoretical frameworks used in the study of digital Islam, and how do they help understand the interaction between Islam and digital technology?

In this study, I conducted a comprehensive analysis of the digital Islamic literature using bibliometric techniques. I began by analyzing publication rates, citations, and influential journals using Biblioshiny software in R-Studio and VOSViewer, which helped me identify key trends and developments in the field. I also used co-citation analysis and author collaboration networks to determine the impact of influential authors in the field and evaluate their h-index and total number of citations. Additionally, I used keyword co-occurrence analysis and thematic evolution maps to examine the thematic evolution of digital Islamic literature, providing a comprehensive understanding of the research focus and evolving interests in specific topics. Sentiment analysis using N-Vivo allowed us to assess the perceptions and attitudes of communities towards the integration of technology in religious practices. I also analyzed the representation and participation of women as lead authors in the literature on digital Islam and in the literature addressing gender issues. I used author gender and network analyses to explore the collaboration and influence of female authors, providing insights into the role of women in the field. This study delves into digital Islam's main theoretical framework by examining the most-cited documents and references globally. Identifying the most influential frameworks offers insights into how they shape our understanding of Islam and digital technology. My research combines theoretical rigor and empirical analysis to enhance the literature on Digital Islam, offering a comprehensive perspective of technology, religion, and society.

This study introduces two unique aspects of bibliometric analyses: sentiment analysis of 'digital Islam''s literature, and women's participation and representation in this field. By conducting sentiment analysis, this study uncovers the diverse perceptions and attitudes of Muslims towards digital technologies, providing significant insights into the integration of these technologies into religious practices and daily life. Understanding the interplay between digital Islam and technology is therefore crucial. Moreover, the research on women's participation and representation sheds light on the prominent role women play as primary authors and research subjects in 'digital Islam' literature. This challenges existing assumptions and underscores the importance of gender in this area of research. By emphasizing these aspects, this study contributes to the academic discourse on 'digital Islam' and promotes inclusivity and gender awareness. It also establishes a foundation for future research investigating the relationship between technology, digital Islam, and gender.

#### Research Design

In this study, I used the Biblioshiny software in R-Studio to conduct a bibliometric analysis and map key developments, trends, and dynamics in the field of Digital Islam literature (Aria & Cuccurullo,

2017). Bibliometrix is a open-source tool that enables comprehensive science mapping analysis and supports a recommended workflow. In addition, the VOSViewer was used in this study. This software emphasizes the visual representation of bibliometric maps (Van Eck and Waltman, 2010). Furthermore, N-Vivo was employed for sentiment analysis of digital Islamic literature. N-Vivo's sentiment analysis tool is suitable for this task because it can autocode unlabeled and unstructured text corpora against a built-in sentiment dictionary, as shown in an experiment on the IMDB dataset, where it achieved an accuracy of 87.63% (Dewi et al., 2023). Therefore, using N-Vivo for sentiment analysis in this study was the most appropriate choice.

To examine the relationship between Islamic and Muslim societies and the digital realm, a comprehensive search strategy was executed using the Scopus database (Donthu et al., 2021). The use of Scopus was justified by its extensive collection of over 90 million documents, which represent Islamic perspectives in the literature (Elsevier Scopus blog, 2023). In addition, its user-friendly search interface and offline analysis capabilities using CSV files enable in-depth searches and analyses (Baas et al., 2020; Zainuddin, 2015). Scopus is a multidisciplinary database suitable for searching scholarly articles on a range of topics including Islam and digital media (AlRyalat et al., 2019). Therefore, Scopus' extensive database coverage, analysis features, and global reach make it an ideal choice for searching the literature related to Islam and digital media. A search string was then used TITLE-ABS-KEY (islam OR "Muslim societies" AND "digital world" OR "digital age" OR technology OR "social media" OR internet OR "online community" OR "cyber space" OR "digital culture" OR "virtual community" OR "online engagement" OR "digital engagement" OR "social networking" OR "online education" OR "e-learning" OR "virtual learning" OR "digital platforms" OR "online platforms").

In this study, the initial step involved identifying pertinent records from the Scopus database, resulting in the successful identification of 2026 documents based on the STRING Criteria. Following identification, the next step entailed the removal of records prior to screening. This process led to the removal of 13 documents due to duplicates, 2 documents due to incomplete content, and 3 documents due to incomplete author information, resulting in a total of 2008 documents remaining for the subsequent screening process.

The subsequent screening process involved evaluating the remaining documents to determine their suitability based on specific inclusion and exclusion criteria. A total of 569 documents were excluded by restricting the subject areas to the social sciences, arts, humanities, psychology, and multidisciplinary studies. Additionally, 239 documents were excluded by restricting the document type to articles, book chapters, or conference papers, and 11 documents were excluded by selecting only the finalized publications. Furthermore, 40 documents were excluded based on specific keyword criteria such as Christianity, Judaism, Hinduism, Buddhism, and Catholicism. In contrast, 89 English-only articles were included. After a rigorous screening process, 1060 ies were deemed eligible and included in the subsequent bibliometric analysis, as depicted in Figure 1.

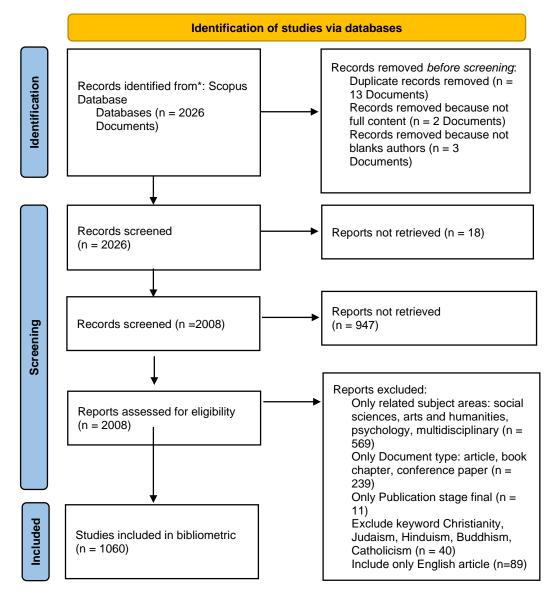


Figure 1. PRISMA Flow Diagram

The retained dataset of 1,060 documents forms the basis for bibliometric analysis, allowing for a detailed examination of publication trends, authorship patterns, thematic concentrations, and citation networks within the literature on Islam and digital engagement. This methodological approach not only highlights the breadth and depth of research in this emerging field but also provides a foundation for identifying gaps in the literature, understanding the evolution of key themes over time, and suggesting avenues for future research. Through this bibliometric analysis, this study provides a structured overview of how digital technologies intersect with Islamic practices and their broader implications for Muslim societies globally, as shown in Table 2.

Table 2. Digital Islamic Literature From Scopus (1969-2024)

Description	Results
Timespan	1969:2024
Sources (Journals, Books, etc)	656
Documents	1060

Annual Growth Rate %	4.77
Document Average Age	7.68
Average citations per doc	8.541
References	42523
DOCUMENT CONTENTS	
Keywords Plus (ID)	1442
Author's Keywords (DE)	2941
AUTHORS	
Authors	1790
Authors of single-authored docs	546
AUTHORS COLLABORATION	
Single-authored docs	622
Co-Authors per Doc	1.86
International co-authorships %	10
DOCUMENT TYPES	
article	731
book chapter	173
conference paper	89
review	67

Following the completion of the bibliometric analysis, the research design incorporated the use of N-Vivo, a qualitative data analysis software, to conduct a sentiment analysis on the same set of 1,060 documents. This phase specifically aims to understand the intricacies of the discourse in the literature. By utilizing sentiment analysis, this study seeks to uncover prevailing attitudes and perceptions regarding the integration of digital technologies in Islamic practices and Muslim societies. The sentiment analysis conducted in N-Vivo involves coding textual data from documents, identifying positive, negative, and neutral sentiments, and analyzing the context in which digital Islam is discussed. Following the bibliometric analysis, the research design incorporated the use of N-Vivo, a qualitative data analysis software, to conduct sentiment analysis on the same set of 1,060 documents. This phase particularly focuses on understanding the nuances of discourse in the literature. By applying sentiment analysis, this study aims to uncover the prevailing attitudes and perceptions regarding the integration of digital technologies in Islamic practices and Muslim societies. Sentiment analysis in N-Vivo involves coding textual data from documents, identifying positive, negative, and neutral sentiments, and analyzing the context in which digital Islam is discussed.

#### **Result and Discussion**

This study presents a comprehensive bibliometric framework for analyzing Digital Islam literature. Using Biblioshiny in R-Studio (Moral-Muñoz et al., 2020), we mapped growth dynamics, identified influential authors, analyzed international collaborations, outlined thematic evolution, explored sentiments towards digital technologies in the Islamic context, assessed the role of women, and identified theoretical frameworks for digital Islamic studies.

# RQ1: Growth and trends in digital islam literature

The analysis starts by presenting the growth trend of Digital Islam literature since its inception. Based on publication and citation data, we identified time periods with significant surges in research, highlighting the topics and issues that dominate academic discourse. A performance analysis of the 'Digital Islam' literature was conducted to identify key developments and trends in the field. This

included analyzing publications per year, citations, and the most prolific journals. The analysis highlighted how this literature is evolving and which areas are receiving the most attention.

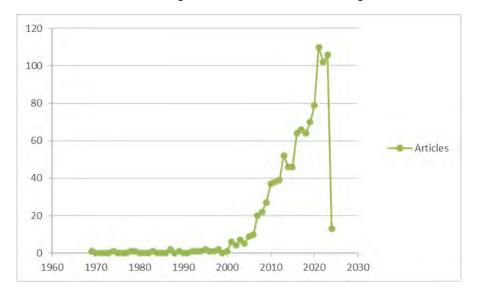


Figure 2. Annual Scientific Production for Digital Islamic Literature

<u>Figure 2</u> shows a significant and consistent increase in the number of publications on Islamic digital literature from 1969 to 2024. The number of publications per year grew slowly at first but then increased rapidly and significantly in the early 2000s. This surge in publications can be attributed to the growing interest in and recognition of the significance of research in digital Islam, particularly in the past two decades. The period between 2007 and 2024 is marked by significant annual growth in research activity. This era is considered pivotal in the development of Islamic digital literature, signifying a heightened focus on exploring and advancing this field. The data reveal the increasing importance placed on digital Islam and progress made in this area.

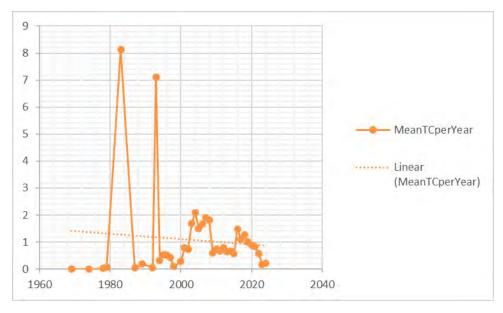


Figure 3. Average citations per year for digital Islam literature

<u>Figure 3</u> shows an analysis of the average citations per year for digital Islamic literature, revealing fluctuations in research recognition and impact over time. Initially, there was a lack of impact from the late 1960s to the early 1980s, with almost no citations per year. However, in 1983, there was a significant increase in the average citations, indicating the importance of research in the field. Since

the 2000s, there has been a consistent upward trend in the average citations, albeit with some fluctuations. The years 2003 and 2004 were notable for having a higher average number of citations, indicating increased recognition of research in Islamic digital literature. The average number of citations stabilized at a lower but still significant level, with another peak in 2016. However, from 2019 to 2024, there was a decline in the average number of citations per year, which may be due to a time lag in citation collection or an increase in less-cited publications. This analysis offers insights into the evolving dynamics of citations over time and academic recognition of Islamic digital research on a global scale.



Figure 4. Most productive journals in Digital Islam literature

Figure 4 highlights that the journal 'Religions' is the most prolific, with 30 articles, followed by the 'Indonesian Journal of Islam and Muslim Societies' and 'Contemporary Islam.' The 'Journal of Arab and Muslim Media Research' and the 'Journal of Religion, Media, and Digital Culture' were also significant contributors. Furthermore, the '2013 5th International Conference on Information and Communication Technology for the Muslim World (ICT4M 2013)' and its 2014 edition contributed to the field. The analysis of publication trends from 1969 to 2024 reveals exponential growth in research output, particularly between 2007 and 2024, marking a new era of increased academic interest in digital Islamic studies. This growth was accompanied by fluctuations in citation recognition, with a noticeable increase since the early 2000s. This paper underscores the diverse platforms supporting digital Islamic research and advocates for enhanced strategies to boost the visibility and impact of these studies.

## RQ2: Influential sources and authors in digital islam literature

This includes an evaluation of their h-index and total number of citations to demonstrate their influence and contribution to the field. This study aimed to understand the basis of their influence, including the quality and impact of their research.



Figure 5. Top Authors and Sources in Digital Islam literature by VOSViewer

Table 3. Top Authors and Sources in Digital Islam literature by Biblioshiny

Author	TI	TC	ТСрҮ
ABOKHODAIR N	6	233	27.24722
INHORN MC	6	496	26.24528
NISA EF	5	148	19.88095
EVOLVI G	6	86	12.91667
CLARKE M	5	153	9.271335
EISENLOHR P	5	137	9.023647
BAULCH E	3	60	8.571429
AL-RAWI A	4	54	5.790909
LARSSON G	5	60	4.944444
ECHCHAIBI N	3	70	4.845238
AL-ZAMAN MS	3	11	3.666667
HASHMI UM	4	13	3.33333
SHABANA A	5	33	3.3
EDIS T	4	37	2.871591
ABDEL-FADIL M	3	12	2.309524
MAHMUD M	5	23	1.924242
HASHIM R	4	13	1.287879
BUNT GR	3	7	0.564103
HANEEF SSS	3	1	0.090909

<u>Figure 5</u> and <u>Table 3</u> provide an analysis of influential authors in the field of Islamic digital literature and their contributions, based on citation metrics derived from VOSviewer and Biblioshiny. This study identified seven authors. Norah Abokhodair emerges as a leading figure with 233 citations across six documents and 27 citations per year, whereas Inhorn MC, with six documents, amasses 496 citations and 26 citations per year, highlighting its significant impact. Eva F. Nisa and Evolvi G, Clarke M, Eisenlohr P, and Baulch E are also noted for their substantial citation counts, indicating their important contributions to the field.

# RQ3: Collaboration patterns in islamic-majority countries

A network analysis of collaborations between countries demonstrates the global reach of digital Islamic research. This study evaluates the intensity and characteristics of collaborations, and identifies patterns that indicate scholarly exchange and joint contributions to global knowledge.

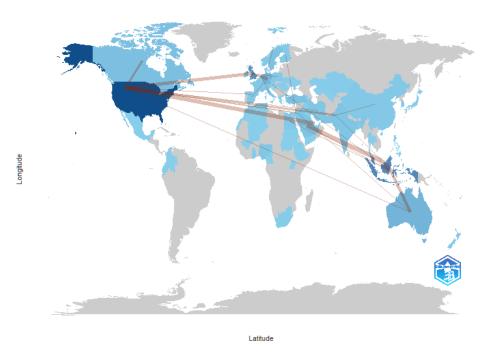


Figure 6. Digital Islam literature collaboration world map

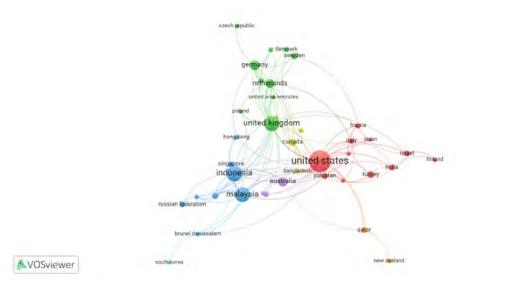


Figure 7. Digital Islam literature co-authorship by Country

In this analysis, I also present the ten countries with the highest number of collaborations in digital Islamic literature research, as well as the ten pairs of countries with the most frequent collaborations.

Table 4. 10 Most Collaborated Countries

Country	Total Collaborations
United States	44

United Kingdom	35	
Malaysia	28	
Indonesia	26	
Australia	18	
Netherlands	18	
Saudi Arabia	17	
Germany	16	
Pakistan	14	
Italy	12	

Table 5. 10 Countries' Most Collaborated Couples

Country 1	Country 2	Collaborations	
Indonesia	Malaysia	7	
Malaysia	Saudi Arabia	7	
United Kingdom	United States	7	
Germany	Netherlands	6	
Qatar	United States	5	
Australia	Indonesia	4	
Netherlands	United Kingdom	4	
Australia	Malaysia	3	
Australia	United States	3	
Canada	United States	3	

The analysis of international collaboration networks in the field of digital Islamic literature, as depicted in Figure 6 and 7 and Tables 4 and 5, reveals significant patterns and relationships among the countries. The analysis of international collaboration in the digital Islamic literature identifies key patterns and relationships among countries, highlighting the central roles of the United States and the United Kingdom as academic hubs. Malaysia and Indonesia also emerged as significant contributors, with these countries demonstrating a high level of participation and strong bilateral collaboration, especially between Indonesia and Malaysia. The study showcases the global nature of research collaboration, with notable connections such as Malaysia-Saudi Arabia and UK-US each recording seven collaborations, and a notable trans-European link between Germany and the Netherlands. This underscores the importance of international cooperation to enhance the understanding of Islam in the digital era, reflecting a complex, interconnected global network of knowledge exchange.

Table 5 shows the analyses of intercountry collaborations in Digital Islam research, focusing on how countries with varied interests and capacities collaborate to understand and apply digital technologies in Islamic contexts. It highlights significant partnerships, such as between Indonesia and Malaysia and Malaysia and Saudi Arabia, which reflect shared cultural and religious backgrounds and the integration of technology with Islamic values. Additionally, collaborations between Western and Muslim-majority countries, such as the US, UK, Qatar, and Germany, underscore the importance of cross-cultural research in this field. The findings emphasize that international cooperation is crucial for a comprehensive understanding of Digital Islam, covering the technological, social, and religious dimensions. Such collaborations facilitate enriched dialogue and innovation within Muslim communities globally, showcasing the global relevance and interdisciplinary nature of digital Islamic research.

#### RQ4: Thematic evolution in digital islam literature

Using keyword co-occurrence and thematic evolution mapping techniques, we explored how the research focus has shifted and evolved. These findings offer insights into research dynamics, highlighting new areas and emerging topics in academic dialogue.

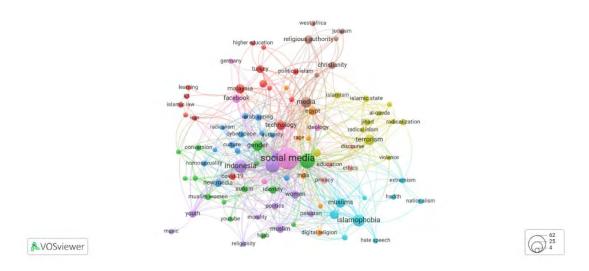


Figure 8. Digital Islam Vos Viewer Co-Occurence Analysis

<u>Figure 8</u> presents a comprehensive analysis of ten thematic clusters identified through specific keywords, each exploring various facets of contemporary societal issues through the lens of digital media, religious identity, and socio-political dynamics.

The first cluster delves into the role of digital platforms, such as Facebook and YouTube, in shaping cultural and religious identities, emphasizing the negotiation of gender politics and social activism within diverse cultural landscapes. This finding highlights the impact of digital media on contemporary discourse and identity formation.

The second cluster examines the interaction between Islamic traditions and modern challenges, such as globalization and the COVID-19 pandemic, focusing on the implications for education, technology, and societal change. This underscores Islamic societies' adaptation to technological advancements and global dynamics.

In the third cluster, the focus shifted to the Middle East, exploring sociopolitical and cultural transformations after the Arab Spring. The role of new media in influencing political activism, religious identity, and cultural values is analyzed, offering insights into the complexities of governance and freedom of expression in the region.

The fourth cluster addresses terrorism, radicalization, and extremism within the context of Islamism, highlighting the influence of jihadist movements and propaganda on global security. It provides a critical view of the sociopolitical challenges posed by radical ideologies.

The fifth cluster explores the intersections of digital culture, activism, and identity politics, particularly the role of social media in advocating for social justice issues, such as Islamophobia and racism. This illustrates how digital platforms facilitate activism and discussions of discrimination.

The sixth cluster looks at Pakistan, focusing on the interplay between digital media, education, ethics, and sociopolitical dynamics concerning Islam, nationalism, and gender. The significance of religious discourse and educational initiatives in shaping societal norms has been emphasized.

The seventh cluster analyzes the religious and cultural dynamics of Christianity, Hinduism, and Judaism in West Africa, exploring the impact of the diaspora, media, and religious authority on community identities and practices.

The eighth cluster investigated the influence of religion, social media, and youth culture in Indonesia, highlighting the role of Instagram and music in shaping moral values and religious expressions among youth.

The ninth cluster considers geopolitical, cultural, and social dynamics in regions such as Egypt, India, and Nigeria, addressing broader themes such as orientalism, race, and secularism. It offers a critical examination of cultural representation and power dynamics.

Finally, the tenth cluster focuses on the intersection of bioethics and Islamic science, examining ethical considerations in scientific advancements guided by Islamic principles. This reflects an interdisciplinary field that merges scientific inquiry with ethical and religious reflections.

Overall, this study elucidates the intricate relationships between digital media, religious identity, and socio-political issues across different cultural and geographical contexts, providing a nuanced understanding of contemporary societal challenges and transformations.

Having identified the various themes in the ten clusters of Vos-Viewer. I then identified how these clusters were thematically interconnected.

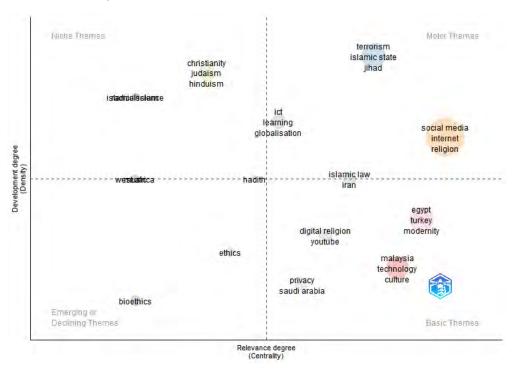


Figure 9. Digital Islam thematic Map analysis Biblioshiny

<u>Figure 9</u> presents a thematic analysis focused on "Digital Islam," which encompasses the practice, interpretation, and communication of Islam within digital environments. The analysis utilized a thematic map to categorize research themes based on their relevance and level of development, employing axes to represent theme importance and density. Key themes were organized into quadrants, illustrating their relationships and significance. Central themes, identified as Motor Themes, include 'terrorism,' 'Islamic state,' and 'jihad,' highlighting their prominence in discussions about the digital impact on these subjects. Basic Themes, such as 'malaysia,' 'technology,' and

'culture,' though fundamental, are recognized as less explored areas. Emerging or Declining Themes like 'bioethics' and 'ethics' suggest new or waning interests, while Niche Themes mention religions like Christianity, Judaism, and Hinduism, indicating specialized but less connected topics. This analysis helps pinpoint research priorities and potential gaps within the field of digital Islamic studies, suggesting areas for further investigation.

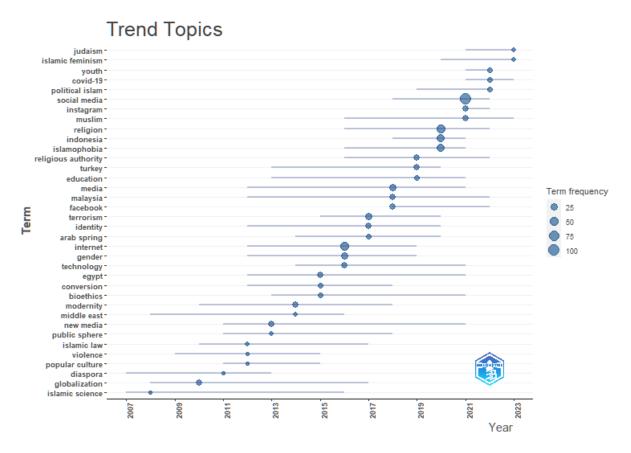


Figure 10. Digital Islam Topic Trends

Figure 10 shows the evolution of topics related to Digital Islam from 2008 to 2021, illustrating a shift towards integrating digital technology within Islamic discourse and practices. Initially, discussions focused on Islamic science and explored the relationship between religion and technology. By 2013, the emphasis had shifted towards the use of new media and communication technologies, such as social media and mobile applications, for education and religious engagement. The year 2016 marked notable interest in the impact of technology on Islamic practices, including the use of digital applications for religious observance and virtual reality for immersive religious experiences. The study highlights a significant trend towards digital platforms that enhance religious practice, accessibility, and community engagement within the Muslim community. By 2021, social media, particularly Instagram, has emerged as a vital space for expressing and debating Islamic identity, showcasing the growing importance of digital spaces for religious dialogue and community development.

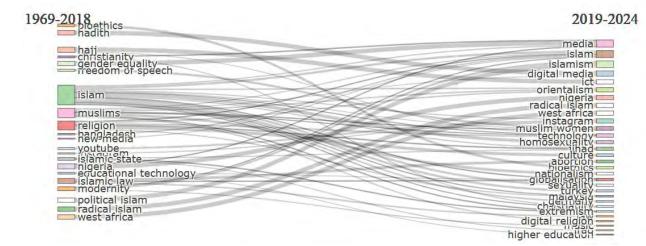


Figure 11. Thematic evolution in Digital Islam literature

Figure 11 illustrates the thematic evolution of Islamic studies from 1969 to 2024, highlighting the emergence of new themes such as digital media, ICT, Instagram, and technology. It notes an increased focus on gender and representation, particularly regarding Muslim women, alongside traditional themes such as hadith and Islamic law. The period also saw a rise in discussions on sociopolitical issues, such as Islamophobia, nationalism, and homosexuality, indicating a broader inclusion of social and political analysis within Islamic studies. The study underscores a shift towards integrating Islam with technology and contemporary debates, expanding the scope of discussion to include global issues such as globalization and radical Islam. This reflects a dynamic and expanding field of study that adapts to contemporary societal changes and technological advancements.

## RQ5: Sentiments analysis towards digital islam

We analyzed the sentiments of the authors of the articles using N-Vivo for a sentiment analysis. The discussions revealed both positive and negative nuances,

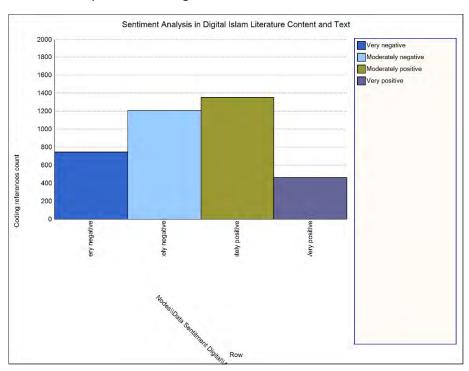


Figure 12. Sentiment Analysis in Digital Islam based on Text

When conducting sentiment analysis on articles using N-Vivo, it is important to note that the results obtained do not reflect the personal sentiments or viewpoints of the authors. The analysis focuses on extracting information and nuances regarding discussions on digital technology, regardless of whether they are positive or negative. The objective of this analysis is to identify themes, patterns, and nuances that emerge from the content, without making any assumptions about the author's attitude towards the subject. Therefore, when stating that 'the discussion reveals both positive and negative nuances, showing complex perceptions of digital technology,' it refers to the range of opinions and views presented in the articles rather than the authors' sentiments. This interpretation clarifies that sentiment analysis is a tool for extracting information and trends from text and that the results reflect the content being analyzed rather than the subjective perceptions of the authors.

Figure 12 presents a sentiment analysis focusing on the interaction between Islam and digital technology, analyzing 748 negative and 1359 positive sentiments from various entries. It reveals a complex and multifaceted discourse, with a dominant, moderately negative sentiment reflecting concerns and criticisms, alongside a significant presence of positive viewpoints that acknowledge the beneficial impact of digital technology on Islam. The analysis underscores the diverse perceptions within the discourse, highlighting both the challenges and opportunities of digital technologies present in contemporary Islamic practice and understanding. This suggests a nuanced landscape of views, balancing skepticism and optimism in the context of the role of digital technology in Islam.

## *RQ6: The role of women in digital islam literature*

This study investigates gender dynamics in the digital Islamic literature by focusing on the participation of female authors. It employs a two-stage methodology to analyze gender representation, beginning with the identification of 100 highly cited authors from a corpus of 1060 articles, leading to the recognition of 59 female authors based on citation frequency. The second stage zeroes in on the most prolific among these female authors, narrowing down to 18 individuals recognized for their significant contributions. This study meticulously examines the gender of authors and their distribution across publications, paying particular attention to the positions held by female authors in the authorship order, which serves as an indicator of their leadership and influence within the field. This approach sheds light on collaboration patterns and leadership roles, aiming to offer a comprehensive understanding of women's roles and contributions in the digital Islamic literature. Furthermore, it explores the broader discourse on gender issues within digital Islamic research, highlighting the acknowledgment and valuation of women's contributions in this scholarly domain.

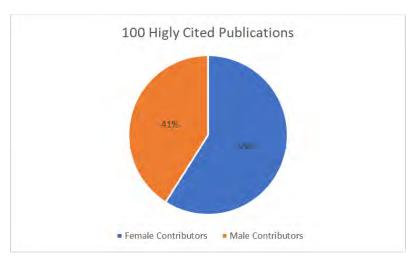


Figure 13. Women's representation in the top 100 most cited papers

Table 6. Top 59 Female Authors by Number of Citations

Authors	Female Authors		Year S	Source title	Cited by
Wersal L. (1995)	Wersal, Lisa	ISLAM AND ENVIRONMENTAL ETHICS: TRADITION RESPONDS TO CONTEMPORARY CHALLENGES	1995	5 Zygon®	31
Stowasser B. (2001)	Stowasser, Barbara	Old shaykhs, young women, and the internet: The rewriting of women's political rights in Islam Global infertility and the	2001	Muslim World	21
Inhorn M.C. (2003)	Inhorn, Marcia C.	globalization of new reproductive technologies: Illustrations from Egypt	2003	Social Science and Medicine	206
Mamadouh V. (2003)	Mamadouh, Virginie	11 September and popular geopolitics: A study of websites run for and by Dutch Morrocans Middle Eastern masculinities in	2003	B Geopolitics	27
Inhorn M.C. (2004)	Inhorn, Marcia C.	the age of new reproductive technologies: Male infertility and stigma in Egypt and Lebanon 'Speaking in one's own voice':	2004	Medical Anthropolog Quarterly	<sup>y</sup> 136
Kosnick K. (2004)	Kosnick, Kira	Representational strategies of Alevi Turkish migrants on open- access television in Berlin	2004	Journal of Ethnic and Migration Studies	37
Fullwiley D. (2004)	Fullwiley, Duana	Discriminate biopower and everyday biopolitics: Views on sickle cell testing in Dakar	2004	Medical Anthropolog Cross Cultural Studies Health and Illness	•
Cohrs J.C.; Moschner B.; Macs J.; Kielmann S. (Cohrs et al., 2005)	Moschner, Barbara	The motivational bases of right- wing authoritarianism and social dominance orientation: Relations to values and attitudes in the aftermath of September 11, 2001	2005	Personality and Socia Psychology Bulletin	l 187
Abdul Karim N.S.; Hazmi N.R. (2005)	Abdul Karim, Nor Shahriza; Hazmi, Norzelatun Rodhiah	Assessing Islamic information quality on the internet: A case of information about Hadith	2005	Malaysian Journal of Library and Information Science	on 27
Inhorn M.C. (2006)	Inhorn, Marcia C.	"He won't be my son": Middle Eastern Muslim men's discourses of adoption and gamete donation Promises of (im)mediate	2006	Medical Anthropolog Quarterly	<sup>y</sup> 112
Schulz D.E. (2006)	Schulz, Dorothea E.	salvation: Islam, broadcast media, and the remaking of religious experience in Mali	2006	6 American Ethnologist	109
Newcomb R. (2006)	Newcomb, Rachel	Gendering the city, gendering the nation: Contesting urban space in Fes, Morocco	2006	6 City and Society	27
Toft M.D. (2007)	Toft, Monica Duffy	Getting religion? The puzzling case of Islam and civil war	2007	International Security	259
Hashim N.H.; Murphy J.; Hashim N.M. (Hashim et al., 2007)	Hashim, Noor Hazarina; Hashim, Nazlida Muhamad	Islam and online imagery on malaysian tourist destination websites	2007	Journal of Computer- Mediated Communication	73
Akou H.M. (2007)	Akou, Heather Marie	Building a new "world fashion": Islamic dress in the twenty-first century	2007	Fashion Theory - Jour of Dress Body and Culture	nal 38
Raiya H.A.; Pargament K.; Mahoney A.; Stein C. (Abu Raiya et al., 2008)	Mahoney, Annette; Stein, Catherine	A psychological measure of islamic religiousness: Development and evidence for reliability and validity	2008	International Journal the Psychology of Religion	for 212

Ho S.S.; Lee W.; Hameed S.S. (Ho et al., 2008)	Ho, Shirley S.; Lee, Waipeng; Hameed, Shahiraa Sahul	Muslim surfers on the internet: Using the theory of planned behaviour to examine the factors influencing engagement in online religious activities	2008	New Media and Society	51
Wyche S.P.; Caine K.E.; Davison B.; Arteaga M.; Grinter R.E. (Wyche et al., 2008)	Wyche, Susan P.; Caine, Kelly E.; Grinter, Rebecca E.	Sun dial: Exploring technospiritual design through a mobile islamic call to prayer application	2008	Conference on Human Factors in Computing Systems - Proceedings	34
van Zoonen L.; Vis F.; Mihelj S.(Van Zoonen et al., 2010)	van Zoonen, Liesbet; Vis, Farida; Mihelj, Sabina	Performing citizenship on YouTube: Activism, satire and online debate around the anti-Islam video Fitna	2010	Critical Discourse Studies	104
Akou H.M. (Akou, 2010)	Akou, Heather Marie	Interpreting Islam through the Internet: Making sense of hijab Muslim women's online	2010	Contemporary Islam	28
Piela A. (Piela, 2010)	Piela, Anna	discussions of gender relations in Islam	2010	Journal of Muslim Minority Affairs	25
Bryant L.D.; Ahmed S.; Ahmed M.; Jafri H.; Raashid Y. (Bryant et al., 2011)	Ahmed, Shenaz	'All is done by Allah'. Understandings of Down syndrome and prenatal testing in Pakistan Mutuality and immediacy	2011	Social Science and Medicine	36
Clarke M.; Inhorn M.C. (Clarke & Inhorn, 2011)	Inhorn, Marcia C.	between marja and muqallid: Evidence from male in vitro fertilization patients in shii lebanon	2011	International Journal of Middle East Studies	25
Akhter W.; Abassi A.S.; Umar S. (Akhter et al., 2011)	Umar, Sadia	Ethical issues in advertising in pakistan: An islamic perspective	2011	World Applied Sciences Journal	23
Mihelj S.; van Zoonen L.; Vis F. (Mihelj et al., 2011)	Mihelj, Sabina; van Zoonen, Liesbet; Vis, Farida	Cosmopolitan communication online: YouTube responses to the anti-Islam film Fitna	2011	British Journal of Sociology	21
Fekete L. (Fekete, 2012)	Fekete, Liz	The muslim conspiracy theory and the oslo massacre	2012	Race and Class	62
Salamandra C. (Salamandra, 2012)	Salamandra, Christa	The Muhannad effect: Media panic, melodrama, and the Arab female gaze	2012	Anthropological Quarterly	32
Afrianty D. (Afrianty, 2012)	Afrianty, Dina	Islamic education and youth extremism in Indonesia	2012	Journal of Policing, Intelligence and Counter Terrorism	29
Halverson J.R.; Way A.K. (Halverson & Way, 2012)	Way, Amy K.	The curious case of Colleen LaRose: Social margins, new media, and online radicalization	2012	Media, War and Conflict	23
Hamayotsu K. (Hamayotsu, 2013)	Hamayotsu, Kikue	The Limits of Civil Society in Democratic Indonesia: Media Freedom and Religious Intolerance	2013	Journal of Contemporary Asia	31
Nisa E.F. (Nisa, 2013)	Nisa, Eva F.	The internet subculture of Indonesian face-veiled women	2013	International Journal of Cultural Studies 2013 5th International	30
Lubis M.; Kartiwi M. (Lubis & Kartiwi, 2013)	Kartiwi, Mira	Privacy and trust in the Islamic perspective: Implication of the digital age	2013	Conference on Information and Communication Technology for the Muslim World, ICT4M 2013	23
Sreberny A. (Sreberny, 2015)	Sreberny, Annabelle	Women's Digital Activism in a Changing Middle East	2015	International Journal of Middle East Studies	24
Lewis R. (Lewis, 2015)	Lewis, Reina	Uncovering modesty: Dejabis and dewigies expanding the	2015	Fashion Theory - Journal of Dress Body and	24

		parameters of the modest fashion blogosphere		Culture	
Abokhodair N.; Vieweg S. (Abokhodair & Vieweg, 2016)	Abokhodair, Norah; Vieweg, Sarah	Privacy & social media in the context of the Arab Gulf	2016	DIS 2016 - Proceedings of the 2016 ACM Conference on Designing Interactive Systems: Fuse	98
Johnson N.F.; Zheng M.; Vorobyeva Y.; Gabriel A.; Qi H.; Velasquez N.; Manrique P.; Johnson D.; Restrepo E.; Song C.; Wuchty S. (Johnson et al., 2016)	Vorobyeva, Y.	New online ecology of adversarial aggregates: ISIS and beyond	2016	Science	84
Afriana J.; Permanasari A.; Fitriani A. (Afriana et al., 2016)	Afriana, J.; Permanasari, A.; Fitriani, A.	Project based learning integrated to stem to enhance elementary school's students' scientific literacy	2016	Jurnal Pendidikan IPA Indonesia	70
Magdy W.; Darwish K.; Abokhodair N.; Rahimi A.; Baldwin T. (Magdy et al., 2016)	Abokhodair, Norah	#ISISisNotIslam or #DeportAllMuslims? Predicting unspoken views	2016	WebSci 2016 - Proceedings of the 2016 ACM Web Science Conference	49
Aguilera-Carnerero C.; Azeez A.H. (Aguilera-Carnerero & Azeez, 2016)	Aguilera- Carnerero, Carmen	Islamonausea, not islamophobia: The many faces of cyber hate speech	2016	Journal of Arab and Muslim Media Research	34
Abokhodair N.; Abbar S.; Vieweg S.; Mejova Y. (Abokhodair et al., 2016)	Abokhodair, Norah; Abbar, Sofiane; Vieweg, Sarah; Mejova, Yelena	Privacy and twitter in Qatar: Traditional values in the digital world	2016	WebSci 2016 - Proceedings of the 2016 ACM Web Science Conference	26
Benigni M.C.; Joseph K.; Carley K.M. (Benigni et al., 2017)	Carley, Kathleen M.	Online extremism and the communities that sustain it: Detecting the ISIS supporting community on Twitter Digital Islamophobia: The Swedish	2017	PLoS ONE	82
Horsti K. (Horsti, 2017)	Horsti, Karina	woman as a figure of pure and dangerous whiteness	2017	New Media and Society	51
Walter B.F. (Walter, 2017)	Walter, Barbara F.	The New New Civil Wars	2017	Annual Review of Political Science Proceedings of the ACM	50
Abokhodair N.; Hodges A.; Vieweg S. (Abokhodair et al., 2017)	Abokhodair, Norah; Vieweg, Sarah	Photo sharing in the Arab gulf: Expressing the collective and autonomous selves	2017	Conference on Computer Supported Cooperative Work, CSCW	33
da Silva R.; Crilley R. (Da Silva & Crilley, 2017)	da Silva, Raquel	"Talk about terror in our back gardens": an analysis of online comments about British foreign fighters in Syria	2017	Critical Studies on Terrorism	25
Evolvi G. (Evolvi, 2017)	Evolvi, Giulia	Hybrid Muslim identities in digital space: The Italian blog Yalla	2017	Social Compass	22
Nisa E.F. (Nisa, 2018a)	Nisa, Eva F.	Creative and Lucrative Dawa: The Visual Culture of Instagram amongst Female Muslim Youth in Indonesia	2018	Asiascape: Digital Asia	61
Evolvi G. (Nisa, 2018a)	Evolvi, Giulia	Hate in a tweet: Exploring internet-based islamophobic discourses	2018	Religions	42
Nisa E.F. (Nisa, 2018c)	Nisa, Eva F.	Social media and the birth of an Islamic social movement: ODOJ	2018	Indonesia and the Malay World	35

(One Day One Juz) in contemporary Indonesia

		, ,			
Baulch E.; Pramiyanti A. (Pramiyanti & Baulch, 2018)	Baulch, Emma; Pramiyanti, Alila	Hijabers on instagram: Using visual social media to construct the ideal muslim woman	2018	Social Media and Society	33
Husein F.; Slama M. (Husein & Slama, 2018)	Husein, Fatimah; Slama, Martin	Online piety and its discontent: revisiting Islamic anxieties on Indonesian social media	2018	Indonesia and the Malay World	27
Dynel M.; Poppi F.I.M. (Dynel & Poppi, 2018)	Dynel, Marta	In tragoedia risus: Analysis of dark humour in post-terrorist attack discourse	2018	Discourse and Communication	25
Klein O.; Muis J. (Klein & Muis, 2019)	Klein, Ofra	Online discontent: comparing Western European far-right groups on Facebook	2019	European Societies	56
Asongu S.A.; Nwachukwu J.C.; Pyke C. (Asongu et al., 2019)	Nwachukwu, Jacinta C.	The Comparative Economics of ICT, Environmental Degradation and Inclusive Human Development in Sub-Saharan Africa	2019	Social Indicators Research	46
Ibtasam S.; Razaq L.; Ayub M.; Webster J.R.; Ahmed S.I.; Anderson R. (Ibtasam et al., 2019)	Ibtasam, Samia; Razaq, Lubna; Ayub, Maryam; Webster, Jennifer R.	"My cousin bought the phone for me. I never go to mobile shops.": The role of family in women's technological inclusion in Islamic culture	2019	Proceedings of the ACM on Human-Computer Interaction	35
Nisa E.F. (Nisa, 2019)	Nisa, Eva F.	Muslim Women in Contemporary Indonesia: Online Conflicting Narratives behind the Women Ulama Congress	2019	Asian Studies Review	22
Salinas E.; Pradell T.; Molera J. (Salinas et al., 2019)	Salinas, Elena; Pradell, Trinitat ; Molera, Judit	Glaze production at an early Islamic workshop in al-Andalus	2019	Archaeological and Anthropological Sciences	21
Aljarah I.; Habib M.; Hijazi N.; Faris H.; Qaddoura R.; Hammo B.; Abushariah M.; Alfawareh M. (Aljarah et al., 2021)	Habib, Maria; Qaddoura, Raneem	Intelligent detection of hate speech in Arabic social network: A machine learning approach	2021	Journal of Information Science	51

Table 7. 18 Top Female Authors by Productivity and Citation

Female Author	Title	Year	Source title	Cited	T. Article
Inhorn, Marcia C.	Global infertility and the globalization of new reproductive technologies: Illustrations from Egypt	2003	Social Science and Medicine	206	
	Middle Eastern masculinities in the age of new reproductive technologies: Male infertility and stigma in Egypt and Lebanon	2004	Medical Anthropology Quarterly	136	
	"He won't be my son": Middle Eastern Muslim men's discourses of adoption and gamete donation	2006	Medical Anthropology Quarterly	112	6
	Mutuality and immediacy between marja and muqallid: Evidence from male in vitro fertilization patients in shii lebanon	2011	International Journal of Middle East Studies	25	
	Medical Cosmopolitanism in Global Dubai: A Twenty-first-century Transnational Intracytoplasmic Sperm Injection (ICSI) Depot	2017	Medical Anthropology Quarterly	9	

	Abrahamic traditions and egg freezing: Religious Women's experiences in local moral worlds	2020	Social Science and Medicine	8	
	Performing citizenship on YouTube: Activism, satire and online debate around the anti-Islam video Fitna	2010	Critical Discourse Studies	104	
van Zoonen, Liesbet	Cosmopolitan communication online: YouTube responses to the anti-Islam film Fitna	2011	British Journal of Sociology	21	3
	How funny can Islam controversies be? Comedians defending their faiths on YouTube	2013	Television and New Media	7	
Ma Fadda	Performing citizenship on YouTube: Activism, satire and online debate around the anti-Islam video Fitna	2010	Critical Discourse Studies	104	2
Vis, Farida	Cosmopolitan communication online: YouTube responses to the anti-Islam film Fitna	2011	British Journal of Sociology	21	2
Mihali Cahina	Performing citizenship on YouTube: Activism, satire and online debate around the anti-Islam video Fitna	2010	Critical Discourse Studies	104	2
Mihelj, Sabina	Cosmopolitan communication online: YouTube responses to the anti-Islam film Fitna	2011	British Journal of Sociology	21	2
	Privacy & social media in the context of the Arab Gulf	2016	DIS 2016 - Proceedings of the 2016 ACM Conference on Designing Interactive Systems: Fuse	98	
	#ISISisNotIslam or #DeportAllMuslims? Predicting unspoken views	2016	WebSci 2016 - Proceedings of the 2016 ACM Web Science Conference	49	
Abokhodair, Norah	Photo sharing in the Arab gulf: Expressing the collective and autonomous selves	2017	Proceedings of the ACM Conference on Computer Supported Cooperative Work, CSCW	33	6
	Privacy and twitter in Qatar: Traditional values in the digital world	2016	WebSci 2016 - Proceedings of the 2016 ACM Web Science Conference	26	
	"Against marrying a stranger:" Marital matchmaking technologies in Saudi Arabia	2017	DIS 2017 - Proceedings of the 2017 ACM Conference on Designing Interactive Systems	20	
	Holy Tweets: Exploring the Sharing of Quran on Twitter	2020	Proceedings of the ACM on Human-Computer Interaction	7	
	Privacy & social media in the context of the Arab Gulf	2016	DIS 2016 - Proceedings of the 2016 ACM Conference on Designing Interactive Systems: Fuse	98	
Vieweg, Sarah	Photo sharing in the Arab gulf: Expressing the collective and autonomous selves	2017	Proceedings of the ACM Conference on Computer Supported Cooperative Work, CSCW	33	3
	Privacy and twitter in Qatar: Traditional values in the digital world	2016	WebSci 2016 - Proceedings of the 2016 ACM Web Science Conference	26	
Nisa, Eva F.	Creative and Lucrative Dawa: The Visual Culture of Instagram amongst Female Muslim Youth in Indonesia	2018	Asiascape: Digital Asia	61	5

	Social media and the birth of an Islamic social movement: ODOJ (One Day One Juz) in contemporary Indonesia	2018	Indonesia and the Malay World	35	
	The internet subculture of Indonesian face- veiled women	2013	International Journal of Cultural Studies	30	
	Muslim Women in Contemporary Indonesia: Online Conflicting Narratives behind the Women Ulama Congress	2019	Asian Studies Review	22	
	Internet and Muslim Women	2021	Handbook of Contemporary Islam and Muslim Lives	0	
	Hate in a tweet: Exploring internet-based islamophobic discourses	2018	Religions	42	
	Hybrid Muslim identities in digital space: The Italian blog Yalla	2017	Social Compass	22	
	Emotional politics, islamophobic tweets: The hashtags #Brexit and #chiudiamoiporti	2019	Partecipazione e Conflitto	8	
Evolvi, Giulia	The veil and its materiality: Muslim women's digital narratives about the burkini ban	2019	Journal of Contemporary Religion	8	6
	Introduction: Islam, space, and the internet	2021	Journal of Religion, Media and Digital Culture	4	
	Likes, comments, and follow requests: The instagram user experiences of young Muslim women in the Netherlands	2021	Journal of Religion, Media and Digital Culture	2	
Akou, Heather	Building a new "world fashion": Islamic dress in the twenty-first century	2007	Fashion Theory - Journal of Dress Body and Culture	38	2
Marie	Interpreting Islam through the Internet: Making sense of hijab	2010	Contemporary Islam	28	2
Ibtasam, Samia	"My cousin bought the phone for me. I never go to mobile shops.": The role of family in women's technological inclusion in Islamic culture	2019	Proceedings of the ACM on Human-Computer Interaction	35	2
	For God's sake! Considering Religious Beliefs in HCI Research: A Case of Islamic HCI	2021	Conference on Human Factors in Computing Systems - Proceedings	9	
	Hijabers on instagram: Using visual social media to construct the ideal muslim woman	2018	Social Media and Society	33	
Baulch, Emma	Beyond the Middle Classes, Beyond New Media: The Politics of Islamic Consumerism in Indonesia	2024	Asian Studies Review	0	2
	Hijabers on instagram: Using visual social media to construct the ideal muslim woman	2018	Social Media and Society	33	
Pramiyanti, Alila	Hijabers on Instagram: Using Visual Social Media to Construct the Ideal Muslim Woman	2018	Social Media and Society	27	2
	Accelerating Islamic charities in Indonesia: zakat, sedekah and the immediacy of social media	2020	South East Asia Research	28	
Slama, Martin	Online piety and its discontent: revisiting Islamic anxieties on Indonesian social media	2018	Indonesia and the Malay World	27	3
	Imagining indonesian islam as a center: New mediations and old concepts of power	2020	Archiv Orientalni	4	
	Muslim women's online discussions of gender relations in Islam	2010	Journal of Muslim Minority Affairs	25	
Piela, Anna	How do Muslim women who wear the niqab interact with others online? A case study of a profile on a photo-sharing website	2017	New Media and Society	7	3
	Online Islamic Spaces as Communities of Practice for Female Muslim Converts Who	2015	Hawwa	4	

Wear the Nigab

Sreberny,	Women's Digital Activism in a Changing Middle East	2015	International Journal of Middle East Studies	24	
Annabelle	The internet in Iran: The battle over an emerging virtual public sphere	2010	Internationalizing Internet Studies: Beyond Anglophone Paradigms	3	2
	Glaze production at an early Islamic workshop in al-Andalus	2019	Archaeological and Anthropological Sciences	21	
Salinas, Elena	An early example of glaze technology diffusion in North Africa: The Islamic workshop of Tahert (central Maghreb, Algeria)	2023	Journal of Archaeological Science: Reports	0	2
	Glaze production at an early Islamic workshop in al-Andalus	2019	Archaeological and Anthropological Sciences	21	
Pradell, Trinitat	An early example of glaze technology diffusion in North Africa: The Islamic workshop of Tahert (central Maghreb, Algeria)	2023	Journal of Archaeological Science: Reports	0	2
Mihali Sahina	Performing citizenship on YouTube: Activism, satire and online debate around the anti-Islam video Fitna	2010	Critical Discourse Studies	104	2
Mihelj, Sabina	Cosmopolitan communication online: YouTube responses to the anti-Islam film Fitna	2011	British Journal of Sociology	21	2

Figure 13, Table 6, and Table 7 present a comprehensive analysis of the role and contributions of female authors in digital Islamic literature, highlighting their significant impact across various disciplines, such as social sciences, medical anthropology, and geopolitics. It shows the diversity of topics covered by these authors, including environmental ethics, women's political rights, and the implications of new reproductive technologies in Middle Eastern societies. This research emphasizes the importance of collaboration among female scholars and the high level of recognition they receive, as evidenced by citations. Notably, Marcia C. Inhorn stands out for her contribution to medical anthropology and reproductive technology. This paper also identifies emerging themes in digital Islamic literature, such as the expression of Islamic identity through social media (Abokhodair & Vieweg, 2016), the intersection of technology with religious practice, and evolving gender dynamics in Muslim societies (Clarke & Inhorn, 2011; Inhorn, 2003, 2004, 2006; Stowasser, 2001). This analysis challenges existing perceptions of gender bias in Islamic studies and the digital humanities, underscoring the vital role female authors play in advancing the discourse on Islam and digital culture (Clarke & Inhorn, 2011; Inhorn, 2003, 2004, 2006).

An analysis of the most prolific female writers in the digital Islamic literature reveals a dynamic and diverse field. Their contributions not only enrich the academic world but also provide deep insights into the complexities of digital Islam and gender dynamics.

## *RQ7:* Most cited references in digital islam literature

This study uses bibliometric indicators, such as the most cited references by the author and the most cited sources and references, to analyze the theoretical framework that dominates studies on the interaction between Islam and digital technology.

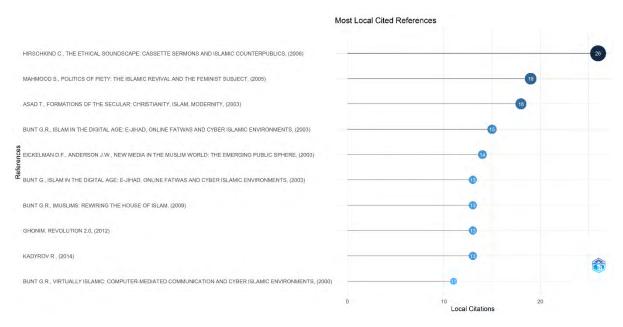


Figure 14. Most cited Reference by Author in Digital Islam

<u>Figure 14</u> shows the names of the authors of the documents referenced in the 1060 articles analyzed in this study. The table below provides a detailed summary of the 15 most influential authors.

Table 8. 15 Most Influental References Authors

Authors	Citation	
Bunt G.R.	91	
Foucault M.	71	
Roy O.	71	
Campbell H.	66	
Mandaville P.	66	
Eickelman D.F.	64	
Anderson J.W.	63	
Hirschkind C.	60	
Asad T.	55	
Inhorn M.C.	55	
Bunt G.	53	
Campbell H.A.	53	
Slama M.	50	
Mahmood S.	48	
Ahmed S.	42	

<u>Table 8</u> shows the authors who made the most significant contributions to the 1060 pieces of literature examining the relationship between Islam and digital technology, based on the number of citations to their work in the documents analyzed.

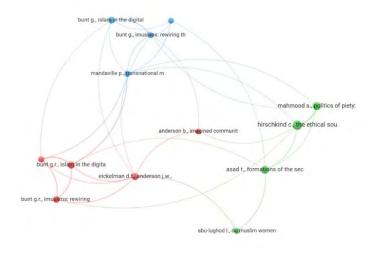


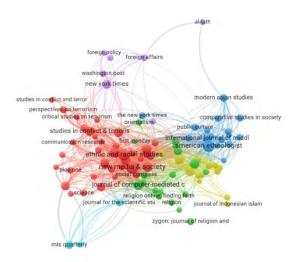
Figure 15. Most Cited References in Digital Islam

**♣**VOSviewer

Table 9. 15 Most Cited References in Digital Islam

Authors	Article	Citations
	The Ethical Soundscape: Cassette Sermons and Islamic	
Hirschkind C. (2009)	Counterpublics	26
Mahmood S. (2012)	Politics of Piety: The Islamic Revival and the Feminist Subject	19
Asad T. (2010)	Formations of the Secular: Christianity, Islam, Modernity Islam in the Digital Age: E-Jihad, Online Fatwas and Cyber Islamic	18
Bunt G.R. (2003) Eickelman D.F.,	Environments	28
Anderson J.W. (2003)	New Media in the Muslim World: The Emerging Public Sphere	14
Bunt G.R. (2009)	iMuslims: Rewiring the House of Islam	23
Bunt G.R. (2000)	Virtually Islamic: Computer-Mediated Communication and Cyber Islamic Environments	11
Mandaville P. (2006)	Transnational Muslim Politics: Reimagining the Umma	11
Abu-Lughod L. (2015)	Do Muslim Women Need Saving?	10
	Imagined Communities: Reflections on the Origin and Spread of	
Anderson B. (1991)	Nationalism	10
Roy O. (2004)	Globalized Islam: The Search for a New Ummah	10

<u>Figure 15</u> and <u>Table 9</u> show the significant works frequently cited in the literature on the correlation between Islam and technology, emphasizing their impact on shaping academic comprehension of the topic.



**♣**VOSviewer



Figure 16. Most Cited Sources

Table 10. 15 most cited sources

Sources	Citation
American Ethnologist	94
Ethnic and Racial Studies	93
New Media & Society	103
Contemporary Islam	62
Journal of Communication	73
Journal of Computer-Mediated Communication	64
Journal of Ethnic and Migration Studies	63
New Media in the Muslim World: The Emerging Public Sphere	63
The New York Times	56
Information, Communication & Society	56
Social media + Society	46
International Journal of Communication	46
Computers in Human Behavior	47
The Muslim World	49
Indonesia and the Malay World	49

The interaction between Islam and digital technology is a dynamic and interdisciplinary field of study, as observed from the analysis of various data sources in Figure 16 and Table 10. Multiple disciplines such as anthropology, sociology, and media studies contribute to this research by offering diverse perspectives on the topic. The most-cited references indicate a significant focus on the influence of new media and communication technologies on Muslim life. Scholars such as Bunt and Hirschkind are recognized for their influential contributions to the field. Several journals, including "American Ethnologist," "New Media & Society," and "Contemporary Islam," Contemporary Islam, are important sources for publishing current and influential studies on this subject. Research in this area considers both global and local contexts, recognizing the unique social, cultural, and political dynamics at play. Critical topics that are frequently explored include identity, online Muslim communities, religious practices in the digital age, and debates on religious authority in digital spaces. Overall, this study combines theoretical analysis with empirical case studies to understand the impact of technology on the social and spiritual dimensions of Muslims' lives.

## **Discussion**

When did the discourse on Islam and digital technology begin?

Based on bibliometric analysis, digital Islam has gained increasing academic interest since 1969, with a notable surge beginning in the early 2000s. This surge can be attributed to two main factors: global repercussions of the post-9/11 world and the rapid advancement of information and communication technologies. The 9/11 terrorist attacks significantly altered global perceptions of Islam, intensifying the need to understand its digital representations as internet usage expanded. Concurrently, the proliferation of Internet and mobile technologies reshaped how Muslim communities engaged in religious, social, and cultural practices, leading scholars to investigate these dynamics through digital lenses, resulting in rich academic discourse featured in journals and conferences such as 'Religions,' Indonesian Journal of Islam and Muslim Societies,' 'Contemporary Islam,' and the 'International Conference on Information and Communication Technology for the Muslim World.

Studies have identified several stages of technological adoption in religious practice. Evolvi (2021) identified four phases of digital-religious evolution from the mid-1990s to the late 2010s: the use of religious websites, apps, and social media for religious purposes. Bunt (2000) emphasized the integration of the Internet into religious practices, which allows remote access to sermons and participation in religious experiences. These changes are also reflected in the field's publication and citation trends, with significant spikes in 2003, 2004, and 2016 and a decline from 2019 to 2024, highlighting the ongoing development and understanding of how digital technologies shape Islamic practices and identity.

Historical, technological, and sociopolitical factors have influenced the adoption of technology in Islamic contexts, as seen in Rapoport (1983) and Robinson (1993). These studies, while not directly addressing Digital Islam, provide foundational insights into the intersection between technology and Islam. Rapoport critiqued the contemporary definition of 'modern terrorism' and emphasized the importance of considering historical contexts, while Robinson discussed the impact of print technology on Islamic knowledge transmission, noting initial resistance within Muslim societies. As a result, the adoption of technology in Islamic contexts is influenced by a complex interplay of these factors, which helps elucidate the ways in which traditional Islamic practices and communities adapt to and are transformed by digital innovations.

This finding is consistent with various studies that suggest that discourse on Islam and digital technology has a long history dating back to the 1970s (Halevi, 2021, pp. 1975–2010). This discourse focused on religio-technological innovations and the development of devices to meet the needs of Muslims. Over three decades, as Halevi (2021) noted, there was an exponential growth in inventions aimed at the Islamic market, such as the first Islamic electronic watch and "The Muslim Xbox." Moreover, the integration of Islamic knowledge into Muslim society was made possible by the introduction of printing, which greatly influenced the emergence of the concepts of "tradition" and "modernity" (Roper, 2017). Furthermore, the development of digital progress has influenced the expansion of terrorist attitudes and rapid development of cyber jihad among cyber ummah (Czornik, 2024).

How has digital technology and social media evolved and affected Muslim communities?

The analysis on influential authors in digital Islam literature, as analyzed using VOS Viewer, identifies Norah Abokhodair, Sarah Vieweg, Marcia C. Inhorn, Eva F. Nisa, Giulia Evolvi, Morgan Clarke, Patrick Eisenlohr and Emma Baulch as key contributors with substantial citations highlighting their impact.

Abokhodair's research examined the intersection of technology, privacy, and cultural norms in the Arabian Gulf. In 2016, she conducted three studies. The first study, as a co-author, found that social media and digital platforms can predict one's attitude towards Muslims, even without directly mentioning Islam or related terms (Magdy et al., 2016). The second study explored how cultural traditions and religious values influence privacy perceptions among Arab Gulf citizens in terms of their technological age (Abokhodair & Vieweg, 2016). Abokhodair et al. (2016) also conducted research on Americans' attitudes towards Islam and Muslims on Twitter after the Paris attacks using predictive modelling. In 2017, Abokhodair et al. conducted two studies. The first study investigated photo-sharing practices among Arabian Gulf users and found that these practices are influenced by a collective self, which outweighs the individual self in shaping photo-sharing behaviors (Abokhodair et al., 2017). The second study analyzed the socio-technical and cultural factors influencing the perception and use of matchmaking technology in Saudi Arabia, providing insights into the design of marriage matchmaking technology (Al-Dawood et al., 2017). Finally, in 2020, Abokhodair examined how Quranic verses are shared on Twitter, revealing that online platforms not only extend religious life offline, but also facilitate new forms of religious expression and community solidarity (Abokhodair et al., 2020). This study deepens our understanding of the relationship between digital technology, culture, and religion in the Arabian Gulf.

Marcia C. Inhorn's research delves into the complexities of infertility and new reproductive technologies, particularly in the Middle Eastern context. Her work explores the globalization of in vitro fertilization (IVF) technologies, the stigma and secrecy surrounding male infertility in pronatalist societies, and religious and cultural resistance to options such as gamete donation and adoption among Muslim men (Inhorn, 2003, 2004, 2006). Inhorn also examined the influence of religious authority on reproductive technology in Shia Islam, portrayed Dubai as an emerging hub for medical tourism specializing in technologies such as intracytoplasmic sperm injection (ICSI), and discussed the reception of elective egg freezing among religiously observant women from Abrahamic faiths (Inhorn, 2011; Inhorn, 2017; Clarke & Inhorn, 2020). Her studies highlight the interplay between cultural norms, religious beliefs, and modern medical technologies in shaping infertility and family planning approaches.

Eva F. Nisa's research examines the ways in which Indonesian Muslim women interact with digital technology and Islamic culture, and how this shapes their religious and social identities. The 2013 study focused on an online subculture of veiled women in Indonesia who used the Internet to promote Islam and challenge perceptions of oppression. Digital platforms allow women to form subcultures and strengthen their religious communities (Nisa 2013). In 2018, Nisa conducted research on the use of Instagram by young Indonesian Muslims and demonstrated that social media can be utilized as a platform for religious education and identity expression through creative forms of da'wah (Nisa, 2018b). He also found that the One Day One Juz (ODOJ) movement, which employs WhatsApp to promote Quran recitation, exemplifies how digital tools can enhance religious mobilization (Nisa, 2018c). In 2019, Nisa conducted research on Indonesia's inaugural congress of female Muslim scholars, examining the impact of this event on women's visibility and influence on Islamic discourse (Nisa, 2019). Nisa's most recent research in 2021 examined the broad impact of the Internet on Muslim women globally, demonstrating that digital platforms empower them to challenge traditional religious authorities and to express diverse religious and gender identities (Nisa, 2021). Nisa's research demonstrated the significant impact of the Internet and social media on religious, cultural, and social dynamics among Muslims in Indonesia and globally.

Giulia Evolvi's research explores the intersection of Islam, identity, and digital spaces. She focuses on how digital platforms serve as arenas for expressing and negotiating Muslim identities, particularly

within European contexts, where Islam is often seen as conflicting with local values. In her work, Evolvi examined the narratives of young Italian Muslims on the blog "Yalla Italia," highlighting how they challenge mainstream media stereotypes and advocate social change, including quicker citizenship processes (Evolvi, 2017). She also analyzed online Islamophobia, detailing how Internet discourses enhance existing anti-Muslim sentiments by framing Muslims as incompatible with Western values (Evolvi 2018). Additionally, Evolvi discusses the materiality of Muslim women's dresses, such as the burkini, in digital narratives to counteract stereotypes and assert their rights within public spaces (Evolvi, 2019a, 2019b). Lale Mahmudova and Giulia Evolvi's (2021) study explores the impact of Instagram on young Dutch Muslim women, highlighting how the platform facilitates identity expression but also exposes users to privacy issues. Their work shows how these women navigate their religious and cultural identities in a Western context, using digital spaces. Additionally, a special issue edited by Evolvi and Maria Chiara Giorda (2021) discussed the redefinition of religious and spatial boundaries through digital platforms. This issue argues that digital spaces create "hybrid religious performances" that link local and global contexts, affecting how religious practices are performed and understood today. These studies provide insights into the complex interplay between digital environments, religious identity, and community belonging. Her studies collectively illustrate how digital environments act as "third spaces" for hybrid religious performances, challenging and reshaping traditional notions of religious identity in the contemporary digital era.

Morgan Clarke's research encompasses several key themes related to kinship, reproductive technologies, and Islamic law within the context of the Middle East, notably in Lebanon. Here, a concise paragraph summarizing his work along with the publication years is as follows: Morgan Clarke investigates the interplay between Islamic legal traditions and modern reproductive technologies, revealing how traditional concepts such as milk kinship (2007b) adapt to contemporary challenges such as donor eggs and surrogacy, thereby persisting rather than diminishing modernity. His work on kinship and biomedicine (2007a, 2007b) explores notions of 'closeness' in the context of new medical technologies and their implications for social and ethical norms in Lebanon. In another study, Clarke (2008) examined how kinship is shaped by new reproductive technologies, the overarching themes of sexual morality, and its political ramifications in the Middle East. Clarke, along with C. Marcia Inhorn examined the relationship between religious authority and assisted reproductive technologies in Shi'i Islam, focusing on the dynamics between senior clerics and their followers in the context of infertility treatments (Clarke & Inhorn, 2011). Through these studies, Clarke provides insightful analyses of how traditional practices and new technologies coalesce in the modern Islamic world.

Patrick Eisenlohr's scholarly work extensively explores the intricate relationships between religious practices, media technology, and notions of authenticity and authority within the context of Mauritian Islam. His studies detail how modern media technologies not only transform religious practices, but also challenge and redefine traditional notions of religious authority and the mediation of the sacreds. In 2009, Eisenlohr examined the dialectics of mediation and immediacy in religious settings, showing how theological assumptions about mediation shaped the use of media technology (Eisenlohr, 2009). By 2010, he had further delved into how sound reproduction technologies impacted the transnational circulation of devotional discourse (Eisenlohr, 2010). His research emphasizes the interaction between language as a medium and other media technologies in religious life (Eisenlohr, 2011). In 2013, Eisenlohr explored how religious performances in Mauritius act as diasporic heritage, legitimizing claims on citizenship through the materiality of religious practice (Eisenlohr, 2013). Finally, in 2014, he analyzed the public and mediated aspects of religion among Mauritian Muslims, highlighting the complex relationship between media practices

and religious experiences (Eisenlohr, 2014). Through these studies, Eisenlohr provides valuable insights into the dynamic interplay between religion, media, and cultural identity in a globalized world.

Emma Baulch, in collaboration with Alila Pramiyanti and Julian Millie, engages in research that combines themes of Islamic consumerism, social media, and identity within the Indonesian context. Pramiyanti and Baulch (2018) focused on how members of Indonesia's Hijabers' Community use Instagram to perform and negotiate aspects of their identity. This involves framing their presentation within the context of "dakwah" (Islamic preaching) and middle-class aesthetics, creating a unique intersection between religious duty and social media performance. This performance on Instagram is analyzed as both a variant of post-feminist empowerment and a form of electronically-mediated Muslim preaching, highlighting a complex "composite habitus" where global digital culture and Islamic communication intersect.

Millie and Baulch (2024) expand on these themes by exploring the broader implications of Islamic consumerism in Indonesia beyond the confines of the middle class. They discuss the increasing interplay between religion and consumerism facilitated by new technologies, the role of social media in shaping Islamic authority, and the need for a renewed focus on the materiality and social meaning of Islamic practices. This work suggests a dynamic and evolving landscape in which traditional boundaries within Islamic practice are reshaped by modern consumers and digital cultures.

Researchers such as Abokhodair Norah and C. Marcia Inhorn, Eva F. Nisa, Giulia Evolvi, Morgan Clarke, Patrick Eisenlohr, and Emma Baulch provide in-depth insights into the influence of digital technologies on Islamic practice and identity. Abokhodair's research focuses on the impact of digital technologies on privacy and social interaction, whereas Inhorn's work delves into the implications of reproductive technologies for social views. Nisa's research explored the digital expressions of religious and social identities. Evolvi examined representations of Muslim identity in the media, Clarke assessed the adaptation of Islamic law to biotechnology, Eisenlohr examined changes in religious authority brought about by media technology, and Baulch highlighted the impact of social media on consumerism and dawah. Collectively, these studies demonstrate how technology affects religious interpretations and practices in the modern era.

The bibliometric analysis of female authors in digital Islamic literature shows their significant impact across diverse fields, such as social sciences, medical anthropology, and geopolitics, covering topics such as environmental ethics, women's political rights, and reproductive technologies in the Middle East. This research highlights the importance of female collaboration and its high recognition in academia with Marcia C. Inhorn noted her contribution to the field of medical anthropology. The paper also explores emerging themes, such as the expression of Islamic identity through social media and the evolving gender dynamics in Muslim societies, challenging traditional perceptions of gender bias in Islamic studies and digital humanities. This highlights the crucial role female authors play in advancing discussions on Islam and digital culture.

This bibliometric analysis highlights the critical intersection between digital technologies and religious practices, particularly through the work of scholars, such as Abokhodair and Nisa. These authors document how digital platforms facilitate new forms of religious expression among Muslim women, offering them a space to negotiate and redefine their religious and social identities. This directly correlates with theoretical discussions on cultural empowerment and preservation, where digital media is seen as a catalyst for sociocultural change in Islamic societies (Buchanan & Husain, 2022). Abokhodair and Nisa's findings suggest that, while digital media enables broader expressions

of identity, it also complicates traditional religious practices by introducing new modes of engagement that can both support and challenge existing religious norms (Campbell, 2012).

In addition, keyword occurrence mapping and thematic evolution techniques identified ten thematic clusters covering a range of contemporary social issues, including the role of digital platforms in shaping cultural and religious identities, the interaction between Islamic traditions and modern challenges, and socio-political dynamics in the Middle East after the Arab Spring. In addition, the research also shows how digital media influence terrorism, activism, and identity politics in various regions, including West Africa and Indonesia. The thematic map analysis further categorizes these themes based on their relevance and stage of development, identifying key themes such as terrorism and the Islamic state as central to the discussion on the impact of digital technology on religious discourse. Over time, from 2008 to 2024, the study observed a prominent shift towards integrating digital technologies in Islamic practices and an expansion of discussions to include pressing global issues such as globalization, Islamophobia, and digital activism, indicating a dynamic evolution in the field of Islamic studies.

Thematic analysis identifying key clusters of digital activism, terrorism, and religious tolerance provides a deeper understanding of how digital media impacts religious tolerance and extremism (Arzroomchilar, 2022). For example, the correlation between the proliferation of digital platforms and the increase in extremist content and counter-discourses promoting tolerance underscores the dual effects of digital technologies (Arzroomchilar, 2022). This reflects theoretical assertions about the risks of digital transformation, such as cyber jihad and the spread of extremist ideologies, while highlighting the potential of digital media to foster a more inclusive understanding of religious diversity (Bunt, 2003; Czornik 2024).

Moreover, the emergence of themes related to the virtualization of traditional religious practices, such as pilgrimages, correlates with changes in religious education and practices (Khairudin and Mohammad 2021). The shift from in-person religious instruction to digital forums not only democratizes access to religious knowledge but also changes the underlying dynamics of religious authority and learning. This is in line with the theoretical impact noted in the transformation of religious education, where digital media reshapes the interaction between clerics and society, potentially weakening traditional authoritative structures while expanding access (Sheikh Khairudin & Mohammad, 2021).

Bibliometric findings also suggest a significant correlation between increasing digital literacy and the evolution of religious practices and identities. As digital literacy increases, so does the engagement and reinterpretation of Islamic content online, leading to positive outcomes such as increased educational opportunities, and negative outcomes such as the potential for misinterpretation and misuse of religious texts (Araniri et al., 2021).

#### What is digital islam?

This bibliometric analysis has revealed some important findings in the form of influential authors, the most impactful articles, topic trends, topic evolution, and the most cited references among authors who have written articles on digital Islam. The main findings described above can be the basis for formulating what and how this concept of digital Islam is actually. In this discussion, I present in more detail the question of what digital Islam is based on the results of bibliometric research.

Before discussing the topic of digital Islam, two important terms in the discourse of Islam in the digital age often appear as the basis of writers' thoughts: digital religion and the term digital ummah or cyber ummah. Therefore, it is important to first position our understanding of the two terms.

Digital religion encompasses the intersection, transformation, and coexistence of religious practices with digital technologies and cultures. It includes the expression, experience, and negotiation of religious beliefs, practices, communities, and identities in digital spaces, such as social media, websites, online forums, and virtual reality environments. The field studies how online and offline religious activities are interconnected and how digital technologies influence traditional religious practices (Campbell and Evolvi 2020). It also explores the emergence of new forms of spirituality and religious engagement supported by the digital world (Campbell & Evolvi, 2020). The study of digital religion also focuses on the impact of digital media and the Internet on how religious adherents practice their faith, interact with religious communities, and integrate their religion with digital culture, thereby changing the landscape of contemporary religiosity (Campbell, 2017).

The concept of "Cyber Ummah" or "Virtual Ummah" refers to the Islamic community in cyberspace that emerged with the advent of the Internet in the Muslim world (Khamis, 2018). Cyber Ummah represents an online community that transcends geographical, ethnic, and cultural boundaries (Khamis 2018). The Internet enables global communication among Muslims and interactions between different groups of Muslims and non-Muslims (Khamis 2018). It creates an egalitarian and interactive virtual community that allows for the formation of new identities and resistance in the online Islamic discourse. Cyber Ummah has implications for the creation of diverse identities and resistance, shaping various Islamic discourses and sites in cyberspace (Khamis 2018). Online sites and platforms function as virtual marketplaces in which ideas and concepts about Islam and Muslims are exchanged. Muslims use online resources to access mainstream and alternative interpretations of Islamic doctrines and scriptures. Overall, the Cyber Ummah is a phenomenon that reflects the changes in Muslim societies online and offline and plays an important role in shaping the religious, social, and cultural aspects of Muslim communities in the digital age.

The bibliometric analysis of digital Islamic literature reveals key contributors such as Norah Abokhodair, Sarah Vieweg, Marcia C. Inhorn, Eva F. Nisa, Giulia Evolvi, Morgan Clarke, Patrick Eisenlohr, and Emma Baulch. A substantial number of citations indicate a significant impact. These researchers have provided valuable insights into the impact of digital technologies on Islamic practices and identity. Abokhodair focuses on privacy and social interaction, Inhorn examines reproductive technologies, Nisa explores digital expressions of religious and social identity, Evolvi studies media representations of Muslim identity, Clarke assesses the adaptation of Islamic law to biotechnology, Eisenlohr investigates the impact of media technology on religious authority, and Baulch highlights social media's influence on consumerism and dawah. The collective findings of these studies showcase the impact of technology on contemporary religious interpretation and practice.

With respect to Digital Islam, an analysis of the research findings revealed several key aspects of digital Islam. First, the use of digital technology, especially social media, has changed the dissemination of religious information and formation of religious discourse among Muslim communities around the world. Individuals can now seek religious knowledge independently through the Internet, which challenges traditional religious authorities and digitally empowers them (Robinson 1993; Turner 2007). In addition, the Internet has facilitated global connectivity and opened up spaces for international discussions and interpretations of Islam. This expansion challenges the authority of traditional Islamic scholars and allows for diverse interpretations and translations of Islam through digital platforms (Robinson, 1993).

Third, social media platforms can perpetuate negative stereotypes about Islam and Muslims, contributing to the (re)production of discursive power that influences the public's understanding of religion (Eickelman 2003). Moreover, the use of sound reproduction technologies in religious practices and the sharing of religious content on digital platforms reflects contemporary adaptations in Islam, signaling the emergence of Digital Islam.

The use of technology in Muslim communities is influenced by traditional values and cultural expectations, particularly in terms of privacy and social media interactions. In addition, the role of Muslim women in digital spaces is significant. Women use and influence the digital space for religious, social, and political purposes, emphasizing the importance of gender in discussions on Digital Islam (Nisa, 2018c, 2018a, 2021). In addition, the implementation and utilization of digital technologies in religious contexts, such as matchmaking technologies and sharing Quranic verses on Twitter, illustrate the potential of digital technologies to enhance religious communities and practices (Abokhodair et al., 2020).

To understand Digital Islam, it is necessary to consider the social, cultural, and political contexts in which Digital Islam exists. In the thematic analysis related to digital Islam, various themes have been identified, such as "terrorism," "Islamic state," and "jihad" being the main research focus, while underlying themes such as "Malaysia," "technology," and "culture" are recognized as important but less explored. The shift in topics from 2008 to 2021 reflects the use of technology in religious practices, theological debates, and exploration of religious identity. Social media, especially Instagram, has become a popular platform for sharing religious, political, and cultural perspectives and discussing issues such as Muslim identity and Islamophobia. There is also increasing emphasis on the intersection of Islam and technology, including gender issues and the representation of Muslim women. Traditional religious themes and new themes such as "bioethics" and "hajj" are also important. Sociopolitical issues such as "Islamophobia" and "nationalism" are also of concern.

Based on the results of this analysis, digital Islam can be defined as the phenomenon of dynamic interactions between Islamic teachings, practices, and digital technology. This includes the utilization of information and communication technologies in religious contexts, which not only changes the way religious information is accessed and disseminated but also affects the social and cultural fabric of global Muslims.

The definition of Digital Islam includes the following aspects.

- Digital-Religious Interaction: Digital Islam refers to how Islamic religious practices such as study, worship, and preaching are integrated with digital tools. This includes the use of apps for reading the Quran, online forums for religious discussions, and social platforms for disseminating Islamic teachings.
- 2. Online Religious Authority and Identity: The rise of online scholars and preachers reflects the shift in religious authority from traditional to digital. Digital platforms allow these figures to widely influence religious thought without geographical boundaries, which significantly changes the power dynamics within the Islamic community.
- 3. Virtual Community (Cyber Ummah): The concept of Cyber Ummah or Virtual Ummah emphasizes the formation of Muslim identities and communities in cyberspace, which crosses national and cultural boundaries, creating new spaces for dialogue and interaction among Muslims from different backgrounds.
- 4. The Impact of Technology on Religious Practices and Interpretations: Technology not only facilitates religious practices but also challenges traditional interpretations and paves the

- way for new ones. This includes the use of social media to discuss religious issues that can influence traditional norms and views.
- 5. Responses to Social and Cultural Issues: Digital Islam also summarizes the Muslim community's response to social and cultural issues through digital media. These include online campaigns against Islamophobia, discussions on the integration of Muslims into non-Muslim societies, and the promotion of tolerance and understanding through online dialog.

Digital Islam is, thus, a multidisciplinary study involving theology, sociology, information technology, and cultural studies. It reflects how digital technologies have not only changed the ways of communication and interaction but also fundamentally affected the way Muslims understand, practice, and promote their religion in today's global and digital age.

# Theoretical frameworks in digital islam

This study aimed to understand the key theories and concepts that have shaped the field by identifying and analyzing the most cited documents and references in the literature. It also evaluates these theoretical frameworks to gain insights into how they explain the relationships between Islamic religious practices and the use and impact of digital technology. This study critically assesses the effectiveness and relevance of these theoretical approaches and suggests new directions for future research in this area.

As previously found, this study identified each of the 15 most-cited references, their sources, and authors. Some of the key concepts from these 15 references are as follows:

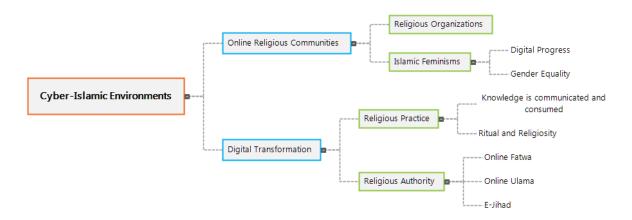


Figure 17. "Islam in the Digital Age" and "Hashtag Islam" by Gary R. Bunt

As shown in Figure 17, Bunt (2003, 2018) examined the transformative role of technology in Muslim religious practices, especially on the Internet. This work introduces the concept of the Cyber Islamic Environment, which has facilitated new forms of religious expression, such as E-jihad and online fatwas. These developments allow for the wider dissemination of Islamic views and decision-making processes. The book also addresses the complexities of cultural mixing within online discourse, which presents opportunities for broadening the reach of traditional teachings and challenges to preserving religious authenticity. Furthermore, Bunt discussed the impact of technology on the expansion of Arabic culture and language, alongside concerns about online radicalization and identity formation. The author advocates constructive engagement with technology, emphasizing that innovation and adaptation are crucial for maintaining the essence of religious practices in the digital era. Bunt (2018) discussed the development of cyber-Islamic environments (CIES) and the

relationship between technology and Islamic practices. The book reviews several key themes and perspectives, including the evolution of CIES as influenced by developments in Internet technology and how it is changing religious discourse and authority in Islam. The author uses an interdisciplinary approach by drawing on insights from fields such as sociology, anthropology, religious studies, and political science, to understand the complex interactions between technology and Islam. One important theme addressed in this book is the impact of technology on Islamic religious authority online, including the challenges faced by traditional authorities in the digital age, and the role of online platforms in shaping contemporary understandings of religious leadership. The book also explores the role of social media in shaping Muslim networks and influencing relationships between Muslim individuals and communities in various contexts.

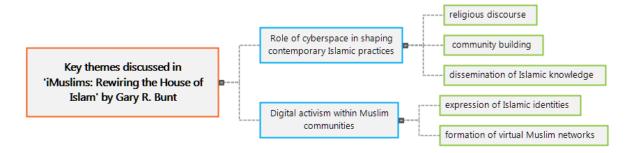


Figure 18. iMuslims: Rewiring the House of Islam by Gary R. Bunt

As shown In Figure 18, Bunt (2009) provides a comprehensive examination of the impact of online platforms on Islamic activism, jihadi networks, Muslim identity, and the spread of religious teaching. The book "iMuslims: Rewiring the House of Islam" by Gary R. Bunt explored the impact of digital technologies on Islamic practices and communities, discussing the intersection of technology, religion, and society. Bunt's work is informed by his previous research in books such as "Virtually Islamic" and "Islam in the Digital Age" (El-Nawawy, 2009). The book delves into themes such as the role of cyberspace in shaping contemporary Islamic practices, the emergence of digital activism within Muslim communities, and the reconfiguration of religious authority in online spaces (Weimann, 2010). Bunt's analysis highlights how the Internet serves as a platform for religious discourse, community building, and dissemination of Islamic knowledge. Additionally, the book examines how digital technologies influence the expression of Islamic identities and the formation of virtual Muslim networks (Weimann 2010).

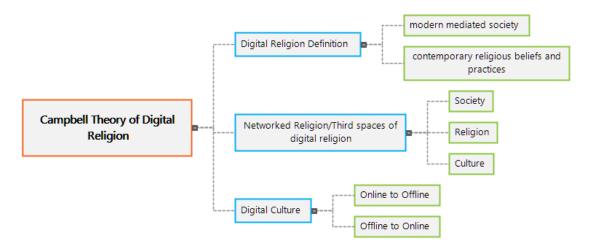


Figure 19. Campbell Theory of Digital Religion

The next expert who was also frequently cited by the authors in the analyzed articles was Heidi Campbell (2016). As Figure 19 shows, the concept often taken from Campbell is a digital religion. Exploration of the phenomenon of "Digital Religion" includes the study of how religion and new information communication technologies, especially the Internet, interact with each other. It examines how religious beliefs, practices, and communities manifest and transform in digital spaces, including online religious communities, virtual worship spaces, and religious rituals performed online (Campbell & Vitullo, 2016). Campbell's theory of Digital Religion studies the intersection of modern, highly digitized societies with contemporary religious beliefs and practices (Campbell & Vitullo, 2016; Helland, 2016). Digital religion is not only concerned with the existence of religion in digital media but also involves the interaction between social and cultural components and elements of digital society. Within this theory, there is the concept of "networked religion" which focuses on official religious activity in the digital world, as well as the "third space of digital religion," which addresses everyday or lived religion in a digital context (Campbell & Connelly, 2020). Campbell's theory also studies how divine revelation is presented and negotiated in digital culture, as well as how material religious practices and artifacts are packaged in online form (Sheldon & Campbell, 2021).

Researchers have explored the interconnections between online and offline religious realms, highlighting how traditional religious contexts blend with new digital contexts (Campbell 2012). In the Western context, "Digital Religion" has emerged as a way to discuss and study online religious practices that influence offline religious communities and institutions. The concept recognizes the unique influence of the Internet and digital technologies in shaping religious practices and beliefs as well as changing perceptions of religiosity in society. Digital Religious Studies is considered a subfield of broader disciplines, such as Internet Studies and Media, Culture and Religion Studies.

Research in this field was rooted in the mid-1990s, focusing on the use of the Internet by religious groups and its potential implications for religious beliefs and practices (Rapoport, 1983; Robinson, 1993). It also examines how religious groups move religious practices to the Internet, creating online communities and houses of worship, and conducting rituals online (Tsuria et al., 2017). Helland (2005; 2005) distinguishes between "religion online" versus "online religion," with "religion online" referring to information presented and controlled by traditionasl religious organizations or leaders, while "online religion" relates to religious innovation and collaboration that creates new understandings of religion through online environments.

Subsequent studies frequently cited in 1060 were spread across multiple authors. In contrast, the authors cited the work of Bunt and Campbell. Therefore, a focused summary of the most cited studies is presented in <u>Table 11</u>.

Table 11. Insight from other most cited references in Digital Islam

No.	Paper Title	Insight
1	The Ethical Soundscape: Cassette	This book examines how cassette sermons became a
	Sermons and Islamic Counterpublics	powerful medium in Egypt for shaping public discussions on morality, demonstrating the role of new media in forming Islamic counterpublics.
2	Politics of Piety: The Islamic Revival	Mahmood's work is a critical analysis of the Islamic revival
	and the Feminist Subject	movement in Egypt, focusing on women's participation. It
		challenges Western perceptions of agency and subjectivity, providing insights into the complex interplay between
		religion and gender.
3	Formations of the Secular:	Asad explores the concept of secularism as it has evolved in
	Christianity, Islam, Modernity	Christian and Islamic contexts, questioning the assumptions
		of modernity and its impact on religious practices.

4	New Media in the Muslim World: The Emerging Public Sphere	This book discusses the transformative role of new media technologies in Islamic societies, highlighting how they have
		contributed to the emergence of a public sphere where
		traditional and modern values intersect.
5	Transnational Muslim Politics:	Mandaville examines how Muslim politics transcends
	Reimagining the Umma	national boundaries, exploring the concept of the Umma
		(the global Muslim community) in the context of
		globalization and technological advances.
6	Do Muslim Women Need Saving?	Abu-Lughod critiques the Western narrative of rescuing
		Muslim women, arguing for a deeper understanding of
		cultural practices and the diverse experiences of women
		within Islamic societies.
7	Imagined Communities: Reflections	Though not exclusively about the Islamic world, Anderson's
	on the Origin and Spread of	seminal work on nationalism offers critical insights into how
	Nationalism	national identities are constructed, which is relevant to
		understanding Muslim identity and solidarity.
8	Globalized Islam: The Search for a	Roy discusses the challenges and transformations within
	New Ummah	Islam in the context of globalization, focusing on the search
		for a new form of Muslim community that transcends
		traditional geographic and cultural boundaries.

Table 11 explores the dynamic role of digital platforms in shaping contemporary Islamic identities, practices, and communities, emphasizing their function as transformative public spaces. It highlights how digital spaces facilitate discussions of morality and ethics, challenge traditional boundaries, and enable the formation of new counterpublics within Islamic communities. Notably, this study addresses the impact of digital engagement on gender dynamics, offering perspectives on the resistance and reaffirmation of societal norms. It also delves into the intersection of secularism, modernity, and religion in digital contexts, enriching the discourse on Muslim societies' navigation of traditions and modernity. Furthermore, this study examines the concept of the Ummah in the digital age, focusing on how digital platforms redefine community boundaries and facilitate transnational connections. This collection of scholarly works provides a comprehensive overview of digital Islam, presenting it as a field in which traditional and modern elements intersect, highlighting the active role of digital spaces in reshaping Islamic identity, authority, and community in the 21st century.

Furthermore, with respect to the methods used in the study of digital Islam, It has been mentioned before that digital Islam is a sub-study of digital religion (Campbell, 2012, 2017; Campbell & Connelly, 2020; Helland, 2016; Sheldon & Campbell, 2021). Therefore, from the perspective of methods, the author agrees with what has been concluded by Tsuria et al. (2017) that textual analysis, interviews, and ethnography are the dominant research methods employed in the study of digital religion. The textual analysis method is divided into textual analysis in digital environments, textual analysis with digital tools, and textual analysis with a digital approach/frame. The interview method was divided into interviews in digital environments, interviews with digital tools, and interviews with digital approachs/frames. Ethnography is divided into digital, virtual, and online ethnography.

Furthermore, based on the analysis of the study and the main insights from most references, including the theories used and taken in digital Islam references, the following theoretical framework is formulated in this research:

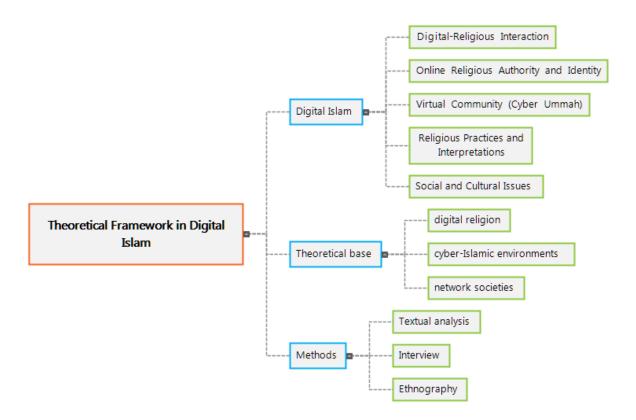


Figure 20. Theoretical Frameworks in Digital Islam

<u>Figure 20</u> presents a theoretical framework for the study of Digital Islam, in which the concept of interaction between religion and digital technology is the main focus. Within this framework, the study of digital Islam includes how religious authority and identity are explored and represented in online environments through practices such as the establishment of virtual communities or Cyber Ummahs that digitally connect global Muslims. Another important aspect is how religious practices and interpretations are adapted and interpreted in digital contexts, highlighting the social and cultural issues arising from these interactions.

Furthermore, a frequently used theoretical foundation is the concept of digital religion and the theory of the Cyber Islamic environment, which is an incarnation of the interaction between information technology and religion in a networked society. This approach opens a new perspective for understanding the dynamics of religious change in the context of modernity and globalization.

The most frequently used methods in this field include text analysis to understand narratives and discourses in digital content, interviews to gain an in-depth understanding of individuals engaged in these activities, and ethnography, which allows direct observation of religious practices in digital environments. Through this approach, this research aims to provide a comprehensive picture of how Islam is interpreted and practiced in the digital age.

### Conclusion

The discourse on Islam and digital technology began to gain significant academic attention in the early 2000s, catalyzed by the global impact of the post-9/11 world and the swift advancements in digital communication technologies. This period marked a pivotal shift in how Islamic practices and communities engaged with the digital world, leading to an increase in scholarly interest, as demonstrated by academic publications and citations. Studies have explored the integration of

digital technologies into traditional Islamic practices and the emergence of online platforms as new venues for religious expression and community building.

A bibliometric analysis of digital Islamic literature identified several key contributors in the field. Norah Abokhodair, Sarah Vieweg, Marcia C. Inhorn, Eva F. Nisa, Giulia Evolvi, Morgan Clarke, Patrick Eisenlohr, and Emma Baulch are among the prominent researchers who have explored a wide range of topics related to digital Islamic literature. These themes encompass privacy and social interactions, reproductive technologies, digital expressions of religious and social identity, media representations of Muslim identity, adaptations of Islamic law to biotechnology, the impact of media technologies on religious authority, and the influence of social media on consumerism and da'wah (Islamic outreach). This analysis suggests that digital technologies have significantly shaped Islamic religious interpretations and practices in the modern era.

Research on digital Islam has progressively uncovered the complex layers of how technology influences religious practices, community dynamics, and identity within Muslim societies. The academic contributions from Authors such as Norah Abokhodair and Francis Robinson have highlighted the nuanced ways in which digital platforms facilitate both the continuity and transformation of Islamic practices. This evolution is evidenced in the growing body of literature examining digital religious practices, the shifting roles of religious authority, and the broader sociopolitical implications of technology on Islamic communities.

This study presents three foundational insights into digital Islamic studies, addressing key questions regarding the nature of digital Islam, its theoretical framework, and the significant role of women. First, it positions digital Islam as a critical subfield of digital religion, highlighting the intersection of Islamic traditions and digital technologies. This intersection catalyzes transformative shifts in religious practices, community formations, and identity reconstructions in the digital sphere, challenging conventional paradigms and forging a new understanding of Islam in the digital age.

Moreover, the research articulates the concepts of 'digital Muslim' and 'digital ummah' as central to this field. The 'digital Muslim' refers to individuals whose Islamic practice and community engagement take place in digital environments, and embodies the broader concept of the 'digital Ummah' - a global online Muslim community that transcends traditional geographic and cultural boundaries. This global community exemplifies significant changes in how religious information is disseminated and how Muslims worldwide connect, share, and interact in the digital age. The synonymous use of digital Muslims and ummah in this study underscores the seamless integration of individual and collective Islamic identities in digital spaces, demonstrating the expansive reach and communal solidarity of Islam across the digital landscape.

This study delves into the theoretical frameworks that frame digital Islam, drawing on disciplines such as digital religious studies, sociology, and anthropology to construct a comprehensive analytical lens. By engaging with theories such as Heidi Campbell's "digital religion," Gary R. Bunt's "cyber-Islamic environments," and discussions of digital and social identity by Henri Tajfel, John Turner, and Manuel Castells' concept of "network societies," the research enriches our understanding of the socio-cultural and technological forces that shape the digital Muslim experience.

Significantly, women's empowerment and active participation in digital Islamic spaces have emerged as key findings that challenge traditional gender narratives. Women writers and scholars enrich the discourse, navigate, and influence the digital religious landscape through their contributions. The strategic use of digital platforms for education, socialization, and activism not only challenges

established gender roles but also underscores women's empowerment and self-representation in the context of digital Islam.

In sum, the findings of this study highlight the transformative impact of digital Islam, characterized by the integration of tradition and digital innovation, the elucidation of multidisciplinary theoretical frameworks, and the dynamic engagement of women. By exploring the nature of digital Islam, the synonymous relationship between digital Muslims and Ummah, and the empowering role of women, this research significantly advances the field of action studies.

This study had some limitations that should be considered in future research. The use of the Scopus database may lead to missing important publications that are not indexed on this platform, such as Google Scholar, WoS, and other databases; thus, important data or developing trends may be missed. This study also had limitations in the timeframe of the study, as some studies were still in the process of being published or had not been published at the time of analysis. Nonetheless, the study achieved significant findings, including mapping key developments and trends in the incorporation of digital technologies in Islamic practices. These findings also emphasize the important role of digital platforms in education and religious engagement. This research provides a rich understanding of digital Islamic studies and demonstrates the evolving relationship between technology and religious practices, which can serve as a basis for further research.

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"César García-Díaz" ce.garciad@javeriana.edu.co;c.e.garcia.diaz@gmail.com From:

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Exploring the Intersection of Islam and Digital Technology: A Bibliometric Analysis

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Corresponding Author:	Soleh Hasan Wahid Institut Agama Islam Negeri Ponorogo Ponorogo, Jawa Timur INDONESIA	
Corresponding Author Secondary Information:		
Corresponding Author's Institution:	Institut Agama Islam Negeri Ponorogo	
Corresponding Author's Secondary Institution:		
First Author:	Soleh Hasan Wahid	
First Author Secondary Information:		
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Abstract:	This study aims to identify key developments and trends in digital Islamic studies, including influential authors and their contributions, patterns of collaboration, and the evolution of themes in the literature of the 1060 Scopus database from to 1969-2024. This study also examines the representation of women and the main theoretical frameworks in the field. Biblioshiny, R-Studio, VOSViewer, and N-Vivo were used for bibliometric and sentiment analyses. This study found that academic attention to Islam and digital technologies has increased since the early 2000s with a shift towards online platforms for religious expression and community building. The study also examines the role of key authors, such as Norah Abokhodair, Sarah Vieweg, Marcia C. Inhorn, Eva F. Nisa, Giulia Evolvi, Morgan Clarke, Patrick Eisenlohr and Emma Baulch. The analysis of trends in the digital Islamic literature shows an increasing integration of digital technologies in Islamic practice from 2008 to 2021, with a focus on social media and mobile applications for religious education and engagement. Since 2021, Instagram has become an important space for the expression and discussion of Islamic identity. The research examines digital Islam as a major area of digital religion, exploring the role of the 'digital Muslim' in the 'digital Ummah.' This study reveals how digital Islam blends conventional and modern techniques, employs a cross-disciplinary theoretical approach, and significantly includes women. These findings demonstrate that women are more visible in highly cited studies.	
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University of Surrey jon.williams@surrey.ac.uk **NECMEDDÍN GÜNEY** Necmettin Erbakan University necmguney@gmail.com He was born in 1981 in Konya. He completed primary school in Berlin, Germany. He graduated from Konya Seljuk Anatolian Imam Hatip High School in 1999 and from Selcuk University Faculty of Theology in 2003. He started to work as a research assistant in Islamic Law in The Faculty of Theology. In 2006, he completed his MA thesis and started his PhD in the same field. He was a visiting researcher at Columbia University in New York City for a year. In 2011, he graduated from Anadolu University, Faculty of Economics (Open Education). Since December 2013, he has been working as an Assistant Professor at the Department of Islamic Law, Faculty of Theology at Necmettin Erbakan University. He speaks Arabic, English and German. He is married with two children. Jan Ali Western Sydney University jan.ali@westernsydney.edu.au Dr Jan A. Ali is a Religious Sociologist specialising in Islam. He holds a joint appointment as a Senior Lecturer in Islam and Modernity in the School of Humanities and Communication Arts and as the Community and Research Analyst in the Religion and Society Research Centre at the Western Sydney University. He is the Founding Convenor of WSU Postgraduate Islamic Studies Network. His main sociological focus is the study of existential Islam. In recent years Jan has been invited by a number of non-government organizations and government agencies in various Australian capital cities and overseas to deliver Public Lectures on Islamic Revivalism, Shari'ah, Terrorism, and various other important topics on Islam. Opposed Reviewers: Response to Reviewers:

# Exploring the Intersection of Islam and Digital Technology: A Bibliometric Analysis

Soleh Hasan Wahid<sup>1</sup>

<sup>1</sup>Institut Agama Islam Negeri Ponorogo

Jl. Pramuka No.156 Ronowijayan, Siman, Ponorogo, Jawa Timur 63471, PO.Box 116

<u>wahid@iainponorogo.ac.id</u>

ORCID: https://orcid.org/0000-0001-9799-3384

# **DISCLOSURE**

# **Conflicts of Interest**

There is no conflict of interest regarding the publication of this paper

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During the preparation of this work, the author used CharGPT 4.0 to structure paragraphs and describe images. The author also used DeepL Write to perform language editing. After using these tools/services, the author reviewed and edited the content as needed and takes full responsibility for the content of the publication.

Dear Dr. Editor,

I am writing to submit my manuscript entitled "Exploring the Intersection of Islam and Digital Technology: A Bibliometric Analysis" for publication in Social Sciences & Humanities Open as an original article. This submission is intended for the Special Issue on Quantitative Islam, as detailed under "Calls for papers" on the journal's home page, and I have updated the "submission type" entry accordingly in my submission.

The research aims to provide new insights and enrich the understanding of the dynamics and interactions between Islam and digital technology. It identifies key developments and trends in the field, influential authors and their contributions, patterns of collaboration between Islamic-majority countries, the thematic evolution of the literature, and perceptions and attitudes towards digital technology in an Islamic context. Furthermore, the study examines the participation and representation of women in the field and the main theoretical frameworks used in the study of digital Islam. The research employs Biblioshiny software in R-Studio to conduct a bibliometric analysis.

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# Exploring the Intersection of Islam and Digital Technology: A Bibliometric Analysis

This study aims to identify key developments and trends in digital Islamic studies, including influential authors and their contributions, patterns of collaboration, and the evolution of themes in the literature of the 1060 Scopus database from to 1969-2024. This study also examines the representation of women and the main theoretical frameworks in the field. Biblioshiny, R-Studio, VOSViewer, and N-Vivo were used for bibliometric and sentiment analyses. This study found that academic attention to Islam and digital technologies has increased since the early 2000s with a shift towards online platforms for religious expression and community building. The study also examines the role of key authors, such as Norah Abokhodair, Sarah Vieweg, Marcia C. Inhorn, Eva F. Nisa, Giulia Evolvi, Morgan Clarke, Patrick Eisenlohr and Emma Baulch. The analysis of trends in the digital Islamic literature shows an increasing integration of digital technologies in Islamic practice from 2008 to 2021, with a focus on social media and mobile applications for religious education and engagement. Since 2021, Instagram has become an important space for the expression and discussion of Islamic identity. The research examines digital Islam as a major area of digital religion, exploring the role of the 'digital Muslim' in the 'digital Ummah.' This study reveals how digital Islam blends conventional and modern techniques, employs a cross-disciplinary theoretical approach, and significantly includes women. These findings demonstrate that women are more visible in highly cited studies.

Keywowds: Islam, digital religion, digital Islam, bibliometric analysis, women in digital Islam

### Introduction

The significance of digital Islam in Muslim societies is rapidly growing as digital technologies become more prevalent. It is imperative to understand how Islam adapts and is represented in this new medium. Fortunately, despite a lack of consensus on the definition of "digital Islam," it is clear that it represents a unique manifestation of Islam in the digital context, with new identities, practices, and emerging communities (Campbell, 2012; el-Nawawy & Khamis, 2010; Zaid et al., 2022). Some view it as the use of digital tools to practice Islam (Al-Farizi et al., 2022; Arifin et al., 2022; Mustafa et al., 2020), whereas others argue that it extends it (al-Mutairi, 2022; el-Nawawy & Khamis, 2010; Lengauer, 2018; Olson, 2017).

According to Gary R. Bunt (2009), the term "digital Islam," lacks a single clear definition and admits that it is unable to provide a precise explanation. Bunt acknowledges that the term can have varied interpretations, depending on an individual's perspective. He noted that there is no universally accepted definition of the term.

"It depends in part on one defines Islam, and whether elements within that definitionhave a digital edge. Digital Islam may be explicitly online, on a website, blog, YouTube Video, or, more recently, an entry on Twitter. It may be explicitly 'religious' in orientation, relating to specific practices and concepts associated with core Islamic values and precepts. However, the articulation of digital Islam may also relate to specific cultural and political causes, which may be implicitly 'Islamic' in orientation".

Gary Bunt's (2009) approach categorizes digital Islam into different aspects based on how it integrates with Islamic practices. These aspects include using digital platforms to disseminate religious teachings and information, utilizing social media and online forums for discussions related to Islam, and employing mobile applications for religious activities, such as prayer times and Quran recitation.

Additionally, digital Islam is seen as a means of activism, in which digital platforms are utilized for political or social issues from an Islamic perspective. Finally, digital Islam in culture is classified as the integration of Islamic elements into the digital media. Bunt's approach demonstrates the adaptability of digital Islam to technology and its impact on the daily lives of Muslims worldwide, presenting opportunities for further investigation into the intersection of religion and technology (Bunt, 2009). Therefore, a strong theoretical foundation in digital Islamic studies is crucial for a deeper understanding of the implications of digital tools and platforms on Islamic practices and beliefs. Campbell (2017) and Chaudhary (2020) have addressed this issue by highlighting the importance of a theoretical approach to studying digital Islam and the significance of digital ethics in Islam. Both contributions emphasize the need for a blend of theoretical rigor and practical flexibility in the study of digital Islam, and the importance of ongoing research and dialogue in understanding digital transformation in Islam.

Another term related to the concept of digital Islam, also known as digital Muslims or digital Ummah, refers to individuals who actively use digital platforms and technology to express and practice their faith, connect with other Muslims globally, and engage in religious activities (Spalek & Imtoual, 2007). It is becoming increasingly common because of increasing digital literacy among Muslims, especially the younger generation, who use digital devices to strengthen their Islamic identity, access religious content, and participate in online religious discussions (Akmaliah & Burhani, 2021). The concept of e-Ummah, or virtual Ummah, has also emerged, where Muslims gather online to build a sense of brotherhood and unity (Jamil et al., 2020). The Internet also gives young Muslims the option to join digital communities, where they can interact through thoughts, attitudes, and discussions, rather than limited by geographical location or social and family ties (Kirmayer et al. 2013).

A variety of research on digital Islam has arisen from the lack of a single definition of this concept. The investigation of Islam and the Internet commenced in the late 1990s as academics-initiated research on how religious individuals and organizations employed the Internet to disseminate religious content and messages (Eickelman, 2003; Ibahrine, 2020). Scholars argue that the advent of digital media in the Arab and Islamic realms could facilitate religious authorities to propagate their standardized and unaltered perspectives (Sisler, 2011). On the other hand, others contend that these ideas appear ineffective and oversimplified because of digital media's minimal influence on the culture of Arab and Islamic realms (el-Nawawy & Khamis, 2010). Additionally, the digitalization of Islam is viewed as a test of the conventional understanding of Muslim identity (Ibahrine, 2014; Martin, 2004).

Research indicates that new media and digital technology impact religious hierarchies, challenge established societal structures, and offer a platform for religious groups that were previously underrepresented (Bunt, 2018; Ibahrine, 2020). The construction of Islam as a social and cultural entity continues to evolve in response to societal advancements and technological innovations (Sorgenfrei, 2021).

Studies in Muslim societies have investigated the relationship between Islam and digital technology, focusing on topics such as religiosity and consumer attitudes (Souiden & Rani, 2015), Islamic education among youth (Alkouatli et al., 2023), media representation and Islamophobia (Saeed, 2007), the impact of Muslim communities on Islamophobia (Bowe & Makki, 2016), the emergence of hybrid Muslim identities in the digital realm (Evolvi, 2017), and women's empowerment in the Islamic context (Gökhan, 2019; Nisa, 2021). These findings demonstrate the intricate interplay among technology, culture, digital Islam, and societal norms.

When discussing digital Islam, several key aspects have yet to be fully explored. One of these is the lack of a single agreed-upon definition of digital Islam, which has led to a range of methodologies,

approaches, and theories being employed to study this phenomenon. This diversity can be difficult for those unfamiliar with the issue to comprehend, particularly the Muslim community itself, which is the focus of the discussion. Another important factor to consider is the relationship between Islam and digital platforms, which can shed light on the cultural shifts that occur in society. It is worth noting that the impact of digital technology on religious behavior may be more pronounced in conservative and traditional environments than in more inclusive and open environments (Ibahrine, 2020).

As research in this field continues to advance, bibliometric analysis is a useful method for studying the discourse of adaptation and representation of Islam in the digital realm. This method helps to identify research gaps, trends, and the state of the art, which can be valuable for developing scholarly projects (José De Oliveira et al., 2019). By analyzing the most influential authors, literature, and publishers, as well as the thematic evolution in the field of Digital Islam, this method enables a comprehensive assessment of research related to digital Islam. Additionally, it provides a theoretical framework for future research. This study is important for understanding the complex relationship between digital technology, Islam, and religious identity, and can inform the development of inclusive policies and practices for the global Muslim community by incorporating research questions about the representation of women in digital Islamic works.

Research on "digital Islam" does not explicitly use this term, but rather focuses on related themes such as religious moderation, Islamic and media studies, terrorism issues, Islamic communication, and da'wah. Hashmi et al. (2021) conducted a systematic review and thematic analysis using data from the Scopus and Web of Science databases to examine representations of Islam on social media. Their findings revealed a wide range of portrayals of Islam, from liberal to extremist views, with most empirical studies showing largely negative portrayals. Similarly, Prahesti (2022) employed bibliometric analysis with Google Scholar using tools such as Publish and Perish and VOSviewer to explore religious moderation. The study identified significant growth in articles on the topic between 2020 and 2022, indicating growing interest.

Mustofa and Mustofa (2023) focused on Islam and media studies and used bibliometric analysis with Scopus and Biblioshiny data. Their research successfully detected keyword trends and author/journal prominence, indicating a shift in research focus on issues of gender and authority in the context of Islam and the media. In the field of terrorism studies, Yumitro et al. (2023) examined the issue of terrorism in Indonesia through bibliometric analysis using data from Scopus and visualization with VOSviewer. They observed an upward trend in terrorism-related research, with Indonesia being the focal point owing to its unique demographic and geopolitical context.

In addition, Latuconsina (2023) conducted a systematic review of Islamic studies through bibliometric analysis using the R package "Bibliometrics" for data analysis and thematic analysis. This study mapped the evolution of Islamic studies from 1941 to 2022, showing the main topics, authors' contributions, and the most cited works over the decades. Izza (2023) also conducted an analysis of publication patterns and thematic clusters in Islamic communication and da'wah through scientometric analysis with VOSviewer and NVivo 12 Plus for bibliometric mapping and frequency analysis, this study focused on the media and communication methods used in da'wah activities in the digital era.

Wildman (2022) conducted a bibliometric analysis focusing on social scientific publications within the North American Association for the Study of Religion (NAASR). The study utilized bibliometric methods to explore scholarly communication dynamics and highlighted the benefits of online academic conferences in broadening the audience reach. Wildman discussed the use of computational modeling and simulations by Schults to examine religious phenomena and Miller's framework of "queer

democracy" to historicize Christian nationalist politics. However, this study's limitation lies in its narrow focus on NAASR publications, which may not fully capture the global scope of religious studies.

Bukhari et al. (2023) used VOS Viewer to map research on the impact of digital media on the conventional da'wah in Padang City. A qualitative phenomenological study found that digital media significantly influences people's behavior more than traditional da'wah messages. Conventional preachers who lack digital skills face challenges in message transmission, emphasizing the need for digital competencies. The study's limitation is its focus on a single city, which potentially does not represent broader trends. Judijanto et al. (2024) conducted a systematic literature review to examine digital freedom and Islamic ethics. They highlighted that while digital freedom allows unrestricted information access, it presents challenges, such as privacy concerns and cybersecurity threats. The study emphasized the adaptability of Islamic ethics in addressing these issues, but noted limitations due to interpretative variations and the fast-evolving nature of technology.

These studies collectively provide an understanding of how Islam interacts with technology and media, and diverse themes and methodologies have been used to explore this relationship. The results demonstrate the complex and multifaceted nature of digital Islam, revealing a broad spectrum of issues and opportunities at the intersection of religion and technology.

Studies using bibliometric methods and systematic literature reviews have made significant contributions to our understanding of how Islam is interpreted, practiced, and discussed in the digital realm. Research has revealed a wide range of portrayals of Islam on social media, often highlighting negative narratives and public perception. Studies on new media have traced the evolution of the relationship between Islam and technology, identifying shifts in focus towards issues such as gender and authority. Additionally, research has explored the impact of digital media on conventional da'wah and examined digital freedom and Islamic ethical perspectives, emphasizing the need for digital competencies and the adaptability of Islamic ethics to address challenges such as privacy concerns and cybersecurity threats.

However, despite these contributions, there remains a significant gap in the literature: there is still no comprehensive definition or theoretical framework for "Digital Islam." Existing research tends to focus on practical applications, specific cases, and thematic analyses rather than developing a broader, cohesive framework. This lack of a comprehensive theoretical foundation limits our ability to fully understand and contextualize the diverse phenomena observed in digital Islamic practices. Therefore, further research is needed to provide a more comprehensive understanding and theoretical foundation that can inform future research, policies, and practices in digital Islamic space.. Based on these objectives, the research questions of this study were as follows:

RQ1: How does a performance analysis of the 'digital Islamic literature reveal key developments and trends in this field?

RQ2: Who are the influential authors in the 'digital Islam' literature and what are their main contributions? Why have they become influential?

RQ3: How do patterns of collaboration between Islamic-majority countries affect the output and impact of 'digital Islamic research?

RQ4: How does bibliometric analysis reveal the thematic evolution of the 'digital Islam' literature and what are the major themes that have evolved over time?

RQ5: How does sentiment anysis in ' the literature reveal perceptions and attitudes towards digital technology in an Islamic context?

RQ6: What is the involvement and representation of women as the main authors in the 'digital Islam' literature, and what are the main articles that address gender issues?

RQ7: What are the main theoretical frameworks used in the study of digital Islam, and how do they help understand the interaction between Islam and digital technology?

In this study, I conducted a comprehensive analysis of the digital Islamic literature using bibliometric techniques. I began by analyzing publication rates, citations, and influential journals using Biblioshiny software in R-Studio and VOSViewer, which helped me identify key trends and developments in the field. I also used co-citation analysis and author collaboration networks to determine the impact of influential authors in the field and evaluate their h-index and total number of citations. Additionally, I used keyword co-occurrence analysis and thematic evolution maps to examine the thematic evolution of digital Islamic literature, providing a comprehensive understanding of the research focus and evolving interests in specific topics. Sentiment analysis using N-Vivo allowed us to assess the perceptions and attitudes of communities towards the integration of technology in religious practices. I also analyzed the representation and participation of women as lead authors in the literature on digital Islam and in the literature addressing gender issues. I used author gender and network analyses to explore the collaboration and influence of female authors, providing insights into the role of women in the field. This study delves into digital Islam's main theoretical framework by examining the mostcited documents and references globally. Identifying the most influential frameworks offers insights into how they shape our understanding of Islam and digital technology. My research combines theoretical rigor and empirical analysis to enhance the literature on Digital Islam, offering a comprehensive perspective of technology, religion, and society.

This study introduces two unique aspects of bibliometric analyses: sentiment analysis of 'digital Islam''s literature, and women's participation and representation in this field. By conducting sentiment analysis, this study uncovers the diverse perceptions and attitudes of Muslims towards digital technologies, providing significant insights into the integration of these technologies into religious practices and daily life. Understanding the interplay between digital Islam and technology is therefore crucial. Moreover, the research on women's participation and representation sheds light on the prominent role women play as primary authors and research subjects in 'digital Islam' literature. This challenges existing assumptions and underscores the importance of gender in this area of research. By emphasizing these aspects, this study contributes to the academic discourse on 'digital Islam' and promotes inclusivity and gender awareness. It also establishes a foundation for future research investigating the relationship between technology, digital Islam, and gender.

# Research Design

In this study, I used the Biblioshiny software in R-Studio to conduct a bibliometric analysis and map key developments, trends, and dynamics in the field of Digital Islam literature (Aria & Cuccurullo, 2017). Bibliometrix is a open-source tool that enables comprehensive science mapping analysis and supports a recommended workflow. In addition, the VOSViewer was used in this study. This software emphasizes the visual representation of bibliometric maps (Van Eck and Waltman, 2010). Furthermore, N-Vivo was employed for sentiment analysis of digital Islamic literature. N-Vivo's sentiment analysis tool is suitable for this task because it can autocode unlabeled and unstructured text corpora against a built-in sentiment dictionary, as shown in an experiment on the IMDB dataset, where it achieved an accuracy of 87.63% (Dewi et al., 2023). Therefore, using N-Vivo for sentiment analysis in this study was the most appropriate choice.

To examine the relationship between Islamic and Muslim societies and the digital realm, a comprehensive search strategy was executed using the Scopus database (Donthu et al., 2021). The

use of Scopus was justified by its extensive collection of over 90 million documents, which represent Islamic perspectives in the literature (Elsevier Scopus blog, 2023). In addition, its user-friendly search interface and offline analysis capabilities using CSV files enable in-depth searches and analyses (Baas et al., 2020; Zainuddin, 2015). Scopus is a multidisciplinary database suitable for searching scholarly articles on a range of topics including Islam and digital media (AlRyalat et al., 2019). Therefore, Scopus' extensive database coverage, analysis features, and global reach make it an ideal choice for searching the literature related to Islam and digital media. A search string was then used TITLE-ABS-KEY (islam OR "Muslim societies" AND "digital world" OR "digital age" OR technology OR "social media" OR internet OR "online community" OR "cyber space" OR "digital culture" OR "virtual community" OR "online engagement" OR "digital engagement" OR "social networking" OR "online education" OR "elearning" OR "virtual learning" OR "digital platforms" OR "online platforms").

In this study, the initial step involved identifying pertinent records from the Scopus database, resulting in the successful identification of 2026 documents based on the STRING Criteria. Following identification, the next step entailed the removal of records prior to screening. This process led to the removal of 13 documents due to duplicates, 2 documents due to incomplete content, and 3 documents due to incomplete author information, resulting in a total of 2008 documents remaining for the subsequent screening process.

The subsequent screening process involved evaluating the remaining documents to determine their eligibility based on predefined inclusion and exclusion criteria. According to Rogers et al. (2020), a sample size of at least 1000 papers can provide a reliable estimate of citation performance across institutions. Donthu et al. (2021) asserted that a larger sample size helps achieve more accurate and stable results in bibliometric analysis, thus ensuring the reliability of the conclusions drawn from this study.

Based on these arguments, I decided to use an appropriate sample size for this study. A total of 569 documents were excluded by restricting the subject area to the social sciences, arts, humanities, psychology, and multidisciplinary studies. In addition, 239 documents were excluded by restricting the document type to articles, book chapters, or conference papers, and 11 documents were excluded by selecting only the finalized publications. Furthermore, 40 documents were excluded based on specific keyword criteria, such as Christian, Jewish, Hindu, Buddhist and Catholic. In contrast, 89 English-only articles were included. After rigorous screening process, 1060 studies were deemed eligible and included in the subsequent bibliometric analysis, as shown in Figure 1.

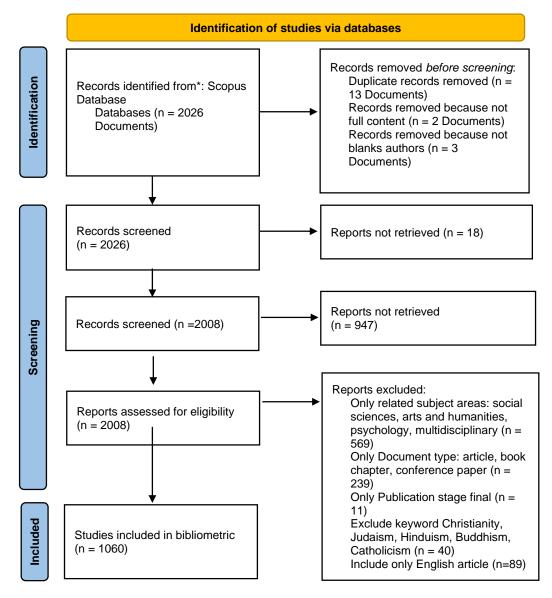


Figure 1. PRISMA Flow Diagram

The retained dataset of 1,060 documents forms the basis for bibliometric analysis, allowing for a detailed examination of publication trends, authorship patterns, thematic concentrations, and citation networks within the literature on Islam and digital engagement. This methodological approach not only highlights the breadth and depth of research in this emerging field but also provides a foundation for identifying gaps in the literature, understanding the evolution of key themes over time, and suggesting avenues for future research. Through this bibliometric analysis, this study provides a structured overview of how digital technologies intersect with Islamic practices and their broader implications for Muslim societies globally, as shown in Table 2.

Table 1. Digital Islamic Literature From Scopus (1969-2024)

Description	Results
Timespan	1969:2024
Sources (Journals, Books, etc)	656
Documents	1060

Annual Growth Rate %	4.77
Document Average Age	7.68
Average citations per doc	8.541
References	42523
DOCUMENT CONTENTS	
Keywords Plus (ID)	1442
Author's Keywords (DE)	2941
AUTHORS	
Authors	1790
Authors of single-authored docs	546
AUTHORS COLLABORATION	
Single-authored docs	622
Co-Authors per Doc	1.86
International co-authorships %	10
DOCUMENT TYPES	
article	731
book chapter	173
conference paper	89
review	67

Following the completion of the bibliometric analysis, the research design incorporated the use of N-Vivo, a qualitative data analysis software, to conduct a sentiment analysis on the same set of 1,060 documents. This phase specifically aims to understand the intricacies of the discourse in the literature. By utilizing sentiment analysis, this study seeks to uncover prevailing attitudes and perceptions regarding the integration of digital technologies in Islamic practices and Muslim societies. The sentiment analysis conducted in N-Vivo involves coding textual data from documents, identifying positive, negative, and neutral sentiments, and analyzing the context in which digital Islam is discussed. Following the bibliometric analysis, the research design incorporated the use of N-Vivo, a qualitative data analysis software, to conduct sentiment analysis on the same set of 1,060 documents. This phase particularly focuses on understanding the nuances of discourse in the literature. By applying sentiment analysis, this study aims to uncover the prevailing attitudes and perceptions regarding the integration of digital technologies in Islamic practices and Muslim societies. Sentiment analysis in N-Vivo involves coding textual data from documents, identifying positive, negative, and neutral sentiments, and analyzing the context in which digital Islam is discussed.

## **Result and Discussion**

This study presents a comprehensive bibliometric framework for analyzing Digital Islam literature. Using Biblioshiny in R-Studio (Moral-Muñoz et al., 2020), we mapped growth dynamics, identified influential authors, analyzed international collaborations, outlined thematic evolution, explored sentiments towards digital technologies in the Islamic context, assessed the role of women, and identified theoretical frameworks for digital Islamic studies.

### RQ1: *Growth and trends in digital islam literature*

The analysis starts by presenting the growth trend of Digital Islam literature since its inception. Based on publication and citation data, we identified time periods with significant surges in research, highlighting the topics and issues that dominate academic discourse. A performance analysis of the 'Digital Islam' literature was conducted to identify key developments and trends in the field. This included analyzing publications per year, citations, and the most prolific journals. The analysis highlighted how this literature is evolving and which areas are receiving the most attention.

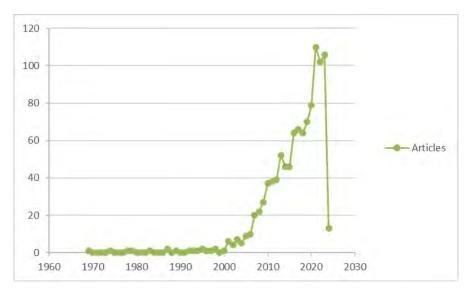


Figure 2. Annual Scientific Production for Digital Islamic Literature

<u>Figure 2</u> shows a significant and consistent increase in the number of publications on Islamic digital literature from 1969 to 2024. The number of publications per year grew slowly at first but then increased rapidly and significantly in the early 2000s. This surge in publications can be attributed to the growing interest in and recognition of the significance of research in digital Islam, particularly in the past two decades. The period between 2007 and 2024 is marked by significant annual growth in research activity. This era is considered pivotal in the development of Islamic digital literature, signifying a heightened focus on exploring and advancing this field. The data reveal the increasing importance placed on digital Islam and progress made in this area.

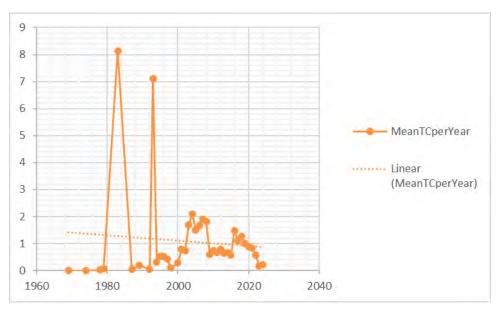


Figure 3. Average citations per year for digital Islam literature

<u>Figure 3</u> shows an analysis of the average citations per year for digital Islamic literature, revealing fluctuations in research recognition and impact over time. Initially, there was a lack of impact from the late 1960s to the early 1980s, with almost no citations per year. However, in 1983, there was a significant increase in the average citations, indicating the importance of research in the field. Since the 2000s, there has been a consistent upward trend in the average citations, albeit with some fluctuations. The years 2003 and 2004 were notable for having a higher average number of citations,

indicating increased recognition of research in Islamic digital literature. The average number of citations stabilized at a lower but still significant level, with another peak in 2016. However, from 2019 to 2024, there was a decline in the average number of citations per year, which may be due to a time lag in citation collection or an increase in less-cited publications. This analysis offers insights into the evolving dynamics of citations over time and academic recognition of Islamic digital research on a global scale.

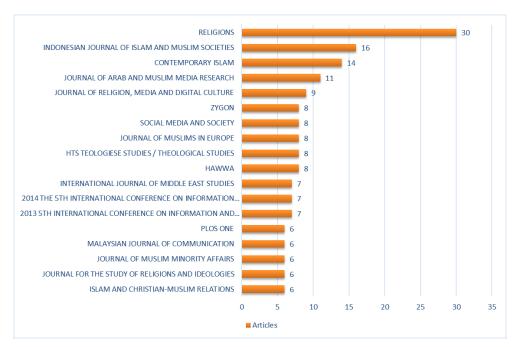


Figure 4. Most productive journals in Digital Islam literature

Figure 4 highlights that the journal 'Religions' is the most prolific, with 30 articles, followed by the 'Indonesian Journal of Islam and Muslim Societies' and 'Contemporary Islam.' The 'Journal of Arab and Muslim Media Research' and the 'Journal of Religion, Media, and Digital Culture' were also significant contributors. Furthermore, the '2013 5th International Conference on Information and Communication Technology for the Muslim World (ICT4M 2013)' and its 2014 edition contributed to the field. The analysis of publication trends from 1969 to 2024 reveals exponential growth in research output, particularly between 2007 and 2024, marking a new era of increased academic interest in digital Islamic studies. This growth was accompanied by fluctuations in citation recognition, with a noticeable increase since the early 2000s. This paper underscores the diverse platforms supporting digital Islamic research and advocates for enhanced strategies to boost the visibility and impact of these studies.

# RQ2: Influential sources and authors in digital islam literature

This includes an evaluation of their h-index and total number of citations to demonstrate their influence and contribution to the field. This study aimed to understand the basis of their influence, including the quality and impact of their research.

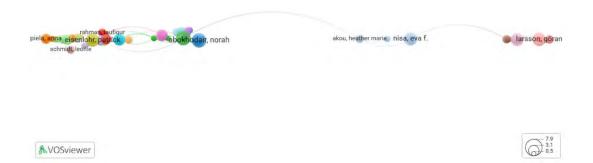


Figure 5. Top Authors and Sources in Digital Islam literature by VOSViewer

Table 2. Top Authors and Sources in Digital Islam literature by Biblioshiny

Author	TI	TC	ТСрҮ
ABOKHODAIR N	6	233	27.24722
INHORN MC	6	496	26.24528
NISA EF	5	148	19.88095
EVOLVI G	6	86	12.91667
CLARKE M	5	153	9.271335
EISENLOHR P	5	137	9.023647
BAULCH E	3	60	8.571429
AL-RAWI A	4	54	5.790909
LARSSON G	5	60	4.944444
ECHCHAIBI N	3	70	4.845238
AL-ZAMAN MS	3	11	3.666667
HASHMI UM	4	13	3.333333
SHABANA A	5	33	3.3
EDIS T	4	37	2.871591
ABDEL-FADIL M	3	12	2.309524
MAHMUD M	5	23	1.924242
HASHIM R	4	13	1.287879
BUNT GR	3	7	0.564103
HANEEF SSS	3	1	0.090909

<u>Figure 5</u> and <u>Table 3</u> provide an analysis of influential authors in the field of Islamic digital literature and their contributions, based on citation metrics derived from VOSviewer and Biblioshiny. This study identified seven authors. Norah Abokhodair emerges as a leading figure with 233 citations across six documents and 27 citations per year, whereas Inhorn MC, with six documents, amasses 496 citations and 26 citations per year, highlighting its significant impact. Eva F. Nisa and Evolvi G, Clarke M, Eisenlohr P, and Baulch E are also noted for their substantial citation counts, indicating their important contributions to the field.

# RQ3: Collaboration patterns in islamic-majority countries

A network analysis of collaborations between countries demonstrates the global reach of digital Islamic research. This study evaluates the intensity and characteristics of collaborations, and identifies patterns that indicate scholarly exchange and joint contributions to global knowledge.

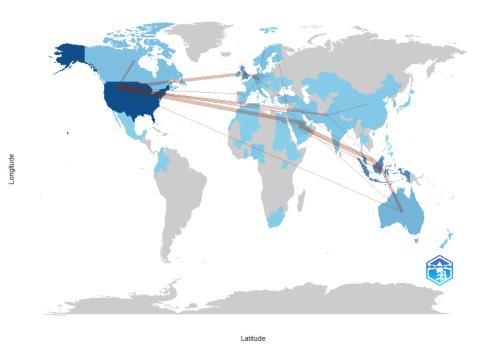


Figure 6. Digital Islam literature collaboration world map

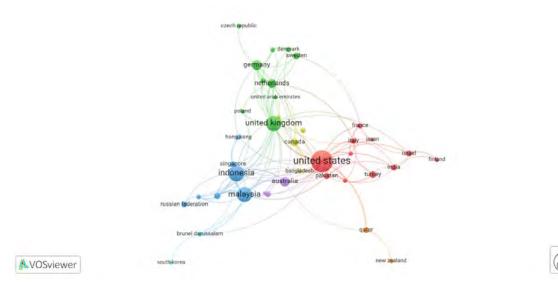


Figure 7. Digital Islam literature co-authorship by Country

In this analysis, I also present the ten countries with the highest number of collaborations in digital Islamic literature research, as well as the ten pairs of countries with the most frequent collaborations.

Table 3. 10 Most Collaborated Countries

Country	<b>Total Collaborations</b>	_
United States	44	
United Kingdom	35	

Malaysia	28	
Indonesia	26	
Australia	18	
Netherlands	18	
Saudi Arabia	17	
Germany	16	
Pakistan	14	
Italy	12	

Table 4. 10 Countries' Most Collaborated Couples

Country 1	Country 2	Collaborations
Indonesia	Malaysia	7
Malaysia	Saudi Arabia	7
United Kingdom	United States	7
Germany	Netherlands	6
Qatar	United States	5
Australia	Indonesia	4
Netherlands	United Kingdom	4
Australia	Malaysia	3
Australia	United States	3
Canada	United States	3

The analysis of international collaboration networks in the field of digital Islamic literature, as depicted in Figure 6 and 7 and Tables 4 and 5, reveals significant patterns and relationships among the countries. The analysis of international collaboration in the digital Islamic literature identifies key patterns and relationships among countries, highlighting the central roles of the United States and the United Kingdom as academic hubs. Malaysia and Indonesia also emerged as significant contributors, with these countries demonstrating a high level of participation and strong bilateral collaboration, especially between Indonesia and Malaysia. The study showcases the global nature of research collaboration, with notable connections such as Malaysia-Saudi Arabia and UK-US each recording seven collaborations, and a notable trans-European link between Germany and the Netherlands. This underscores the importance of international cooperation to enhance the understanding of Islam in the digital era, reflecting a complex, interconnected global network of knowledge exchange.

Table 5 shows the analyses of intercountry collaborations in Digital Islam research, focusing on how countries with varied interests and capacities collaborate to understand and apply digital technologies in Islamic contexts. It highlights significant partnerships, such as between Indonesia and Malaysia and Malaysia and Saudi Arabia, which reflect shared cultural and religious backgrounds and the integration of technology with Islamic values. Additionally, collaborations between Western and Muslim-majority countries, such as the US, UK, Qatar, and Germany, underscore the importance of cross-cultural research in this field. The findings emphasize that international cooperation is crucial for a comprehensive understanding of Digital Islam, covering the technological, social, and religious dimensions. Such collaborations facilitate enriched dialogue and innovation within Muslim communities globally, showcasing the global relevance and interdisciplinary nature of digital Islamic research.

# RQ4: Thematic evolution in digital islam literature

Using keyword co-occurrence and thematic evolution mapping techniques, we explored how the research focus has shifted and evolved. These findings offer insights into research dynamics, highlighting new areas and emerging topics in academic dialogue.

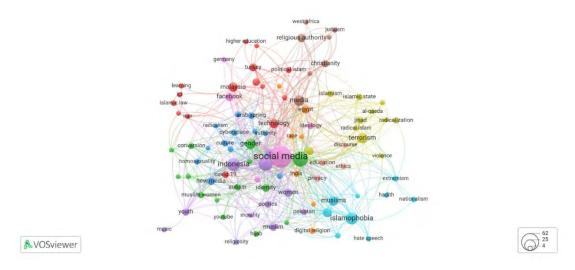


Figure 8. Digital Islam Vos Viewer Co-Occurence Analysis

<u>Figure 8</u> presents a comprehensive analysis of ten thematic clusters identified through specific keywords, each exploring various facets of contemporary societal issues through the lens of digital media, religious identity, and socio-political dynamics.

The first cluster delves into the role of digital platforms, such as Facebook and YouTube, in shaping cultural and religious identities, emphasizing the negotiation of gender politics and social activism within diverse cultural landscapes. This finding highlights the impact of digital media on contemporary discourse and identity formation.

The second cluster examines the interaction between Islamic traditions and modern challenges, such as globalization and the COVID-19 pandemic, focusing on the implications for education, technology, and societal change. This underscores Islamic societies' adaptation to technological advancements and global dynamics.

In the third cluster, the focus shifted to the Middle East, exploring sociopolitical and cultural transformations after the Arab Spring. The role of new media in influencing political activism, religious identity, and cultural values is analyzed, offering insights into the complexities of governance and freedom of expression in the region.

The fourth cluster addresses terrorism, radicalization, and extremism within the context of Islamism, highlighting the influence of jihadist movements and propaganda on global security. It provides a critical view of the sociopolitical challenges posed by radical ideologies.

The fifth cluster explores the intersections of digital culture, activism, and identity politics, particularly the role of social media in advocating for social justice issues, such as Islamophobia and racism. This illustrates how digital platforms facilitate activism and discussions of discrimination.

The sixth cluster looks at Pakistan, focusing on the interplay between digital media, education, ethics, and sociopolitical dynamics concerning Islam, nationalism, and gender. The significance of religious discourse and educational initiatives in shaping societal norms has been emphasized.

The seventh cluster analyzes the religious and cultural dynamics of Christianity, Hinduism, and Judaism in West Africa, exploring the impact of the diaspora, media, and religious authority on community identities and practices.

The eighth cluster investigated the influence of religion, social media, and youth culture in Indonesia, highlighting the role of Instagram and music in shaping moral values and religious expressions among youth.

The ninth cluster considers geopolitical, cultural, and social dynamics in regions such as Egypt, India, and Nigeria, addressing broader themes such as orientalism, race, and secularism. It offers a critical examination of cultural representation and power dynamics.

Finally, the tenth cluster focuses on the intersection of bioethics and Islamic science, examining ethical considerations in scientific advancements guided by Islamic principles. This reflects an interdisciplinary field that merges scientific inquiry with ethical and religious reflections.

Overall, this study elucidates the intricate relationships between digital media, religious identity, and socio-political issues across different cultural and geographical contexts, providing a nuanced understanding of contemporary societal challenges and transformations.

Having identified the various themes in the ten clusters of Vos-Viewer. I then identified how these clusters were thematically interconnected.

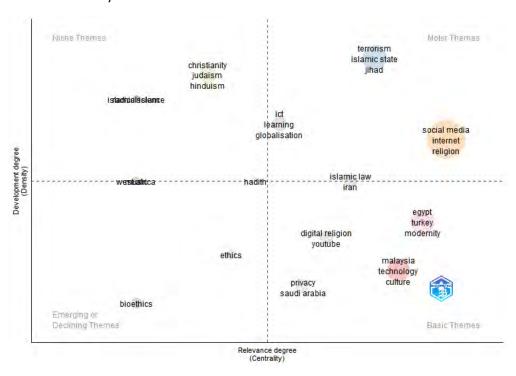


Figure 9. Digital Islam thematic Map analysis Biblioshiny

Figure 9 presents a thematic analysis focused on "Digital Islam," which encompasses the practice, interpretation, and communication of Islam within digital environments. The analysis utilized a thematic map to categorize research themes based on their relevance and level of development, employing axes to represent theme importance and density. Key themes were organized into quadrants, illustrating their relationships and significance. Central themes, identified as Motor Themes, include 'terrorism,' 'Islamic state,' and 'jihad,' highlighting their prominence in discussions about the digital impact on these subjects. Basic Themes, such as 'malaysia,' 'technology,' and 'culture,' though fundamental, are recognized as less explored areas. Emerging or Declining Themes like 'bioethics' and 'ethics' suggest new or waning interests, while Niche Themes mention religions like Christianity, Judaism, and Hinduism, indicating specialized but less connected topics. This analysis

helps pinpoint research priorities and potential gaps within the field of digital Islamic studies, suggesting areas for further investigation.

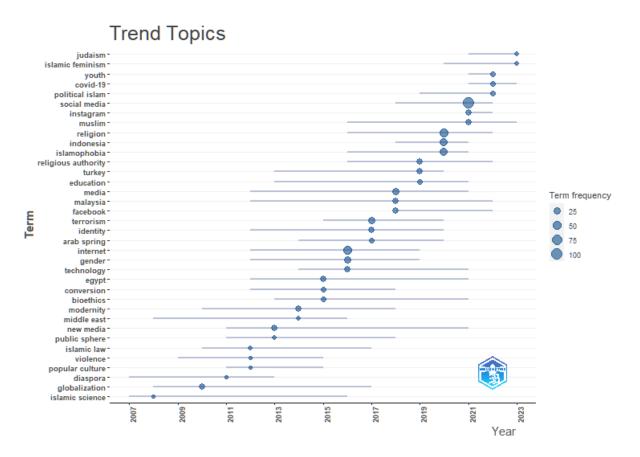


Figure 10. Digital Islam Topic Trends

Figure 10 shows the evolution of topics related to Digital Islam from 2008 to 2021, illustrating a shift towards integrating digital technology within Islamic discourse and practices. Initially, discussions focused on Islamic science and explored the relationship between religion and technology. By 2013, the emphasis had shifted towards the use of new media and communication technologies, such as social media and mobile applications, for education and religious engagement. The year 2016 marked notable interest in the impact of technology on Islamic practices, including the use of digital applications for religious observance and virtual reality for immersive religious experiences. The study highlights a significant trend towards digital platforms that enhance religious practice, accessibility, and community engagement within the Muslim community. By 2021, social media, particularly Instagram, has emerged as a vital space for expressing and debating Islamic identity, showcasing the growing importance of digital spaces for religious dialogue and community development.

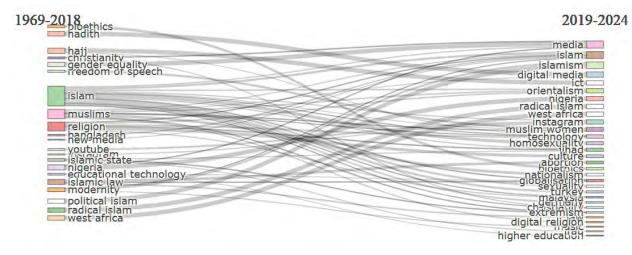


Figure 11. Thematic evolution in Digital Islam literature

Figure 11 illustrates the thematic evolution of Islamic studies from 1969 to 2024, highlighting the emergence of new themes such as digital media, ICT, Instagram, and technology. It notes an increased focus on gender and representation, particularly regarding Muslim women, alongside traditional themes such as hadith and Islamic law. The period also saw a rise in discussions on socio-political issues, such as Islamophobia, nationalism, and homosexuality, indicating a broader inclusion of social and political analysis within Islamic studies. The study underscores a shift towards integrating Islam with technology and contemporary debates, expanding the scope of discussion to include global issues such as globalization and radical Islam. This reflects a dynamic and expanding field of study that adapts to contemporary societal changes and technological advancements.

# RQ5: Sentiments analysis towards digital islam

We analyzed the sentiments of the authors of the articles using N-Vivo for a sentiment analysis. The discussions revealed both positive and negative nuances,

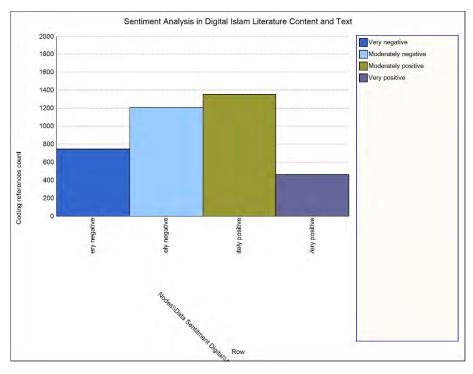


Figure 12. Sentiment Analysis in Digital Islam based on Text

When conducting sentiment analysis on articles using N-Vivo, it is important to note that the results obtained do not reflect the personal sentiments or viewpoints of the authors. The analysis focuses on extracting information and nuances regarding discussions on digital technology, regardless of whether they are positive or negative. The objective of this analysis is to identify themes, patterns, and nuances that emerge from the content, without making any assumptions about the author's attitude towards the subject. Therefore, when stating that 'the discussion reveals both positive and negative nuances, showing complex perceptions of digital technology,' it refers to the range of opinions and views presented in the articles rather than the authors' sentiments. This interpretation clarifies that sentiment analysis is a tool for extracting information and trends from text and that the results reflect the content being analyzed rather than the subjective perceptions of the authors.

Figure 12 presents a sentiment analysis focusing on the interaction between Islam and digital technology, analyzing 748 negative and 1359 positive sentiments from various entries. It reveals a complex and multifaceted discourse, with a dominant, moderately negative sentiment reflecting concerns and criticisms, alongside a significant presence of positive viewpoints that acknowledge the beneficial impact of digital technology on Islam. The analysis underscores the diverse perceptions within the discourse, highlighting both the challenges and opportunities of digital technologies present in contemporary Islamic practice and understanding. This suggests a nuanced landscape of views, balancing skepticism and optimism in the context of the role of digital technology in Islam.

# *RQ6: The role of women in digital islam literature*

This study investigates gender dynamics in the digital Islamic literature by focusing on the participation of female authors. It employs a two-stage methodology to analyze gender representation, beginning with the identification of 100 highly cited authors from a corpus of 1060 articles, leading to the recognition of 59 female authors based on citation frequency. The second stage zeroes in on the most prolific among these female authors, narrowing down to 18 individuals recognized for their significant contributions. This study meticulously examines the gender of authors and their distribution across publications, paying particular attention to the positions held by female authors in the authorship order, which serves as an indicator of their leadership and influence within the field. This approach sheds light on collaboration patterns and leadership roles, aiming to offer a comprehensive understanding of women's roles and contributions in the digital Islamic literature. Furthermore, it explores the broader discourse on gender issues within digital Islamic research, highlighting the acknowledgment and valuation of women's contributions in this scholarly domain.

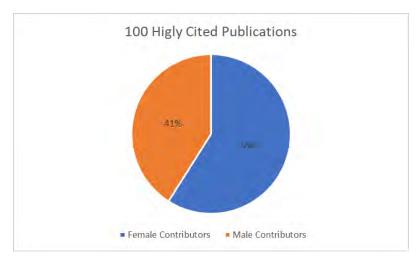


Figure 13. Women's representation in the top 100 most cited papers

Table 5. Top 59 Female Authors by Number of Citations

Authors F	emale Authors		Year So	urce title	Cited by
Wersal L. (1995)	Wersal, Lisa	ISLAM AND ENVIRONMENTAL ETHICS: TRADITION RESPONDS TO CONTEMPORARY CHALLENGES	1995	Zygon®	31
Stowasser B. (2001)	Stowasser, Barbara	Old shaykhs, young women, and the internet: The rewriting of women's political rights in Islam	2001	Muslim World	21
Inhorn M.C. (2003)	Inhorn, Marcia C.	Global infertility and the globalization of new reproductive technologies: Illustrations from Egypt	2003	Social Science and Medicine	206
Mamadouh V. (2003)	Mamadouh, Virginie	11 September and popular geopolitics: A study of websites run for and by Dutch Morrocans Middle Eastern masculinities in	2003	Geopolitics	27
Inhorn M.C. (2004)	Inhorn, Marcia C.	the age of new reproductive technologies: Male infertility and stigma in Egypt and Lebanon	2004	Medical Anthropology Quarterly	136
Kosnick K. (2004)	Kosnick, Kira	'Speaking in one's own voice': Representational strategies of Alevi Turkish migrants on open- access television in Berlin	2004	Journal of Ethnic and Migration Studies	37
Fullwiley D. (2004)	Fullwiley, Duana	Discriminate biopower and everyday biopolitics: Views on sickle cell testing in Dakar The motivational bases of right-	2004	Medical Anthropology: Cross Cultural Studies in Health and Illness	29
Cohrs J.C.; Moschner B.; Macs J.; Kielmann S. (Cohrs et al., 2005)	Moschner, Barbara	wing authoritarianism and social dominance orientation: Relations to values and attitudes in the aftermath of September 11, 2001	2005	Personality and Social Psychology Bulletin	187
Abdul Karim N.S.; Hazmi N.R. (2005)	Abdul Karim, Nor Shahriza; Hazmi, Norzelatun Rodhiah	Assessing Islamic information quality on the internet: A case of information about Hadith	2005	Malaysian Journal of Library and Information Science	n <b>27</b>
Inhorn M.C. (2006)	Inhorn, Marcia C.	"He won't be my son": Middle Eastern Muslim men's discourses of adoption and gamete donation	2006	Medical Anthropology Quarterly	112
Schulz D.E. (2006)	Schulz, Dorothea E.	Promises of (im)mediate salvation: Islam, broadcast media, and the remaking of religious experience in Mali	2006	American Ethnologist	109
Newcomb R. (2006)	Newcomb, Rachel	Gendering the city, gendering the nation: Contesting urban space in Fes, Morocco	2006	City and Society	27
Toft M.D. (2007)	Toft, Monica Duffy	Getting religion? The puzzling case of Islam and civil war	2007	International Security	259
Hashim N.H.; Murphy J.; Hashim N.M. (Hashim et al., 2007)	Hashim, Noor Hazarina; Hashim, Nazlida Muhamad	Islam and online imagery on malaysian tourist destination websites	2007	Journal of Computer- Mediated Communication	73
Akou H.M. (2007)	Akou, Heather Marie	Building a new "world fashion": Islamic dress in the twenty-first century	2007	Fashion Theory - Journal of Dress Body and Culture	38
Raiya H.A.; Pargament K.; Mahoney A.; Stein	Mahoney, Annette; Stein, Catherine	A psychological measure of islamic religiousness:	2008	International Journal for the Psychology of Religion	212

C. (Abu Raiya et al., 2008)		Development and evidence for reliability and validity			
Ho S.S.; Lee W.; Hameed S.S. (Ho et al., 2008)	Ho, Shirley S.; Lee, Waipeng; Hameed, Shahiraa Sahul	Muslim surfers on the internet: Using the theory of planned behaviour to examine the factors influencing engagement in online religious activities	2008	New Media and Society	51
Wyche S.P.; Caine K.E.; Davison B.; Arteaga M.; Grinter R.E. (Wyche et al., 2008)	Wyche, Susan P.; Caine, Kelly E.; Grinter, Rebecca E.	Sun dial: Exploring technospiritual design through a mobile islamic call to prayer application	2008	Conference on Human Factors in Computing Systems - Proceedings	34
van Zoonen L.; Vis F.; Mihelj S.(Van Zoonen et al., 2010)	van Zoonen, Liesbet; Vis, Farida; Mihelj, Sabina	Performing citizenship on YouTube: Activism, satire and online debate around the anti-Islam video Fitna	2010	Critical Discourse Studies	104
Akou H.M. (Akou, 2010)	Akou, Heather Marie	Interpreting Islam through the Internet: Making sense of hijab	2010	Contemporary Islam	28
Piela A. (Piela, 2010)	Piela, Anna	Muslim women's online discussions of gender relations in Islam	2010	Journal of Muslim Minority Affairs	25
Bryant L.D.; Ahmed S.; Ahmed M.; Jafri H.; Raashid Y. (Bryant et al., 2011)	Ahmed, Shenaz	'All is done by Allah'. Understandings of Down syndrome and prenatal testing in Pakistan	2011	Social Science and Medicine	36
Clarke M.; Inhorn M.C. (Clarke & Inhorn, 2011)	Inhorn, Marcia C.	Mutuality and immediacy between marja and muqallid: Evidence from male in vitro fertilization patients in shii lebanon	2011	International Journal of Middle East Studies	25
Akhter W.; Abassi A.S.; Umar S. (Akhter et al., 2011)	Umar, Sadia	Ethical issues in advertising in pakistan: An islamic perspective	2011	World Applied Sciences Journal	23
Mihelj S.; van Zoonen L.; Vis F. (Mihelj et al., 2011)	Mihelj, Sabina; van Zoonen, Liesbet; Vis, Farida	Cosmopolitan communication online: YouTube responses to the anti-Islam film Fitna	2011	British Journal of Sociology	21
Fekete L. (Fekete, 2012)	Fekete, Liz	The muslim conspiracy theory and the oslo massacre	2012	Race and Class	62
Salamandra C. (Salamandra, 2012)	Salamandra, Christa	The Muhannad effect: Media panic, melodrama, and the Arab female gaze	2012	Anthropological Quarterly	32
Afrianty D. (Afrianty, 2012)	Afrianty, Dina	Islamic education and youth extremism in Indonesia	2012	Journal of Policing, Intelligence and Counter Terrorism	29
Halverson J.R.; Way A.K. (Halverson & Way, 2012)	Way, Amy K.	The curious case of Colleen LaRose: Social margins, new media, and online radicalization The Limits of Civil Society in	2012	Media, War and Conflict	23
Hamayotsu K. (Hamayotsu, 2013)	Hamayotsu, Kikue	Democratic Indonesia: Media Freedom and Religious	2013	Journal of Contemporary Asia	31
Nisa E.F. (Nisa, 2013)	Nisa, Eva F.	Intolerance The internet subculture of Indonesian face-veiled women	2013	International Journal of Cultural Studies 2013 5th International Conference on	30
Lubis M.; Kartiwi M. (Lubis & Kartiwi, 2013)	Kartiwi, Mira	Privacy and trust in the Islamic perspective: Implication of the digital age	2013	Information and Communication Technology for the Muslim World, ICT4M 2013	23
Sreberny A. (Sreberny, 2015)	Sreberny, Annabelle	Women's Digital Activism in a Changing Middle East	2015	International Journal of Middle East Studies	24

Lewis R. (Lewis, 2015)	Lewis, Reina	Uncovering modesty: Dejabis and dewigies expanding the parameters of the modest fashion blogosphere	2015	Fashion Theory - Journal of Dress Body and Culture	24
Abokhodair N.; Vieweg S. (Abokhodair & Vieweg, 2016)	Abokhodair, Norah; Vieweg, Sarah	Privacy & social media in the context of the Arab Gulf	2016	DIS 2016 - Proceedings of the 2016 ACM Conference on Designing Interactive Systems: Fuse	98
Johnson N.F.; Zheng M.; Vorobyeva Y.; Gabriel A.; Qi H.; Velasquez N.; Manrique P.; Johnson D.; Restrepo E.; Song C.; Wuchty S. (Johnson et al.,	Vorobyeva, Y.	New online ecology of adversarial aggregates: ISIS and beyond	2016	Science	84
2016) Afriana J.; Permanasari A.; Fitriani A. (Afriana et al., 2016)	Afriana, J.; Permanasari, A.; Fitriani, A.	Project based learning integrated to stem to enhance elementary school's students' scientific literacy	2016	Jurnal Pendidikan IPA Indonesia	70
Magdy W.; Darwish K.; Abokhodair N.; Rahimi A.; Baldwin T. (Magdy et al., 2016)	Abokhodair, Norah	#ISISisNotIslam or #DeportAllMuslims? Predicting unspoken views	2016	WebSci 2016 - Proceedings of the 2016 ACM Web Science Conference	49
Aguilera-Carnerero C.; Azeez A.H. (Aguilera-Carnerero & Azeez, 2016)	Aguilera- Carnerero, Carmen	Islamonausea, not islamophobia: The many faces of cyber hate speech	2016	Journal of Arab and Muslim Media Research	34
Abokhodair N.; Abbar S.; Vieweg S.; Mejova Y. (Abokhodair et al., 2016)	Abokhodair, Norah; Abbar, Sofiane; Vieweg, Sarah; Mejova, Yelena	Privacy and twitter in Qatar: Traditional values in the digital world	2016	WebSci 2016 - Proceedings of the 2016 ACM Web Science Conference	26
Benigni M.C.; Joseph K.; Carley K.M. (Benigni et al., 2017)	Carley, Kathleen M.	Online extremism and the communities that sustain it: Detecting the ISIS supporting community on Twitter	2017	PLoS ONE	82
Horsti K. (Horsti, 2017)	Horsti, Karina	Digital Islamophobia: The Swedish woman as a figure of pure and dangerous whiteness	2017	New Media and Society	51
Walter B.F. (Walter, 2017)	Walter, Barbara F.	The New New Civil Wars	2017	Annual Review of Political Science	50
Abokhodair N.; Hodges A.; Vieweg S. (Abokhodair et al., 2017)	Abokhodair, Norah; Vieweg, Sarah	Photo sharing in the Arab gulf: Expressing the collective and autonomous selves	2017	Proceedings of the ACM Conference on Computer Supported Cooperative Work, CSCW	33
da Silva R.; Crilley R. (Da Silva & Crilley, 2017)	da Silva, Raquel	"Talk about terror in our back gardens": an analysis of online comments about British foreign fighters in Syria	2017	Critical Studies on Terrorism	25
Evolvi G. (Evolvi, 2017)	Evolvi, Giulia	Hybrid Muslim identities in digital space: The Italian blog Yalla	2017	Social Compass	22
Nisa E.F. (Nisa, 2018a)	Nisa, Eva F.	Creative and Lucrative Dawa: The Visual Culture of Instagram amongst Female Muslim Youth in Indonesia	2018	Asiascape: Digital Asia	61

Evolvi G. (Nisa, 2018a) Nisa E.F. (Nisa, 2018c)	Evolvi, Giulia Nisa, Eva F.	Hate in a tweet: Exploring internet-based islamophobic discourses Social media and the birth of an Islamic social movement: ODOJ (One Day One Juz) in contemporary Indonesia	2018	Religions Indonesia and the Malay World	42 35
Baulch E.; Pramiyanti A. (Pramiyanti & Baulch, 2018)	Baulch, Emma; Pramiyanti, Alila	Hijabers on instagram: Using visual social media to construct the ideal muslim woman	2018	Social Media and Society	33
Husein F.; Slama M. (Husein & Slama, 2018)	Husein, Fatimah; Slama, Martin	Online piety and its discontent: revisiting Islamic anxieties on Indonesian social media	2018	Indonesia and the Malay World	27
Dynel M.; Poppi F.I.M. (Dynel & Poppi, 2018)	Dynel, Marta	In tragoedia risus: Analysis of dark humour in post-terrorist attack discourse	2018	Discourse and Communication	25
Klein O.; Muis J. (Klein & Muis, 2019)	Klein, Ofra	Online discontent: comparing Western European far-right groups on Facebook	2019	European Societies	56
Asongu S.A.; Nwachukwu J.C.; Pyke C. (Asongu et al., 2019)	Nwachukwu, Jacinta C.	The Comparative Economics of ICT, Environmental Degradation and Inclusive Human Development in Sub-Saharan Africa	2019	Social Indicators Research	46
Ibtasam S.; Razaq L.; Ayub M.; Webster J.R.; Ahmed S.I.; Anderson R. (Ibtasam et al., 2019)	Ibtasam, Samia; Razaq, Lubna; Ayub, Maryam; Webster, Jennifer R.	"My cousin bought the phone for me. I never go to mobile shops.": The role of family in women's technological inclusion in Islamic culture	2019	Proceedings of the ACM on Human- Computer Interaction	35
Nisa E.F. (Nisa, 2019)	Nisa, Eva F.	Muslim Women in Contemporary Indonesia: Online Conflicting Narratives behind the Women Ulama Congress	2019	Asian Studies Review	22
Salinas E.; Pradell T.; Molera J. (Salinas et al., 2019) Aljarah I.; Habib M.;	Salinas, Elena; Pradell, Trinitat ; Molera, Judit	Glaze production at an early Islamic workshop in al-Andalus	2019	Archaeological and Anthropological Sciences	21
Hijazi N.; Faris H.; Qaddoura R.; Hammo B.; Abushariah M.; Alfawareh M. (Aljarah et al., 2021)	Habib, Maria; Qaddoura, Raneem	Intelligent detection of hate speech in Arabic social network: A machine learning approach	2021	Journal of Information Science	51

Table 6. 18 Top Female Authors by Productivity and Citation

Female Author	Title	Year	Source title	Cited	T. Article
Inhorn, Marcia C.	Global infertility and the globalization of new reproductive technologies: Illustrations from Egypt	2003	Social Science and Medicine	206	
	Middle Eastern masculinities in the age of new reproductive technologies: Male infertility and stigma in Egypt and Lebanon		Medical Anthropology Quarterly	136	6
	"He won't be my son": Middle Eastern Muslim men's discourses of adoption and gamete donation	2006	Medical Anthropology Quarterly	112	

	Mutuality and immediacy between marja and muqallid: Evidence from male in vitro fertilization patients in shii lebanon	2011	International Journal of Middle East Studies	25	
	Medical Cosmopolitanism in Global Dubai: A Twenty-first-century Transnational Intracytoplasmic Sperm Injection (ICSI) Depot	2017	Medical Anthropology Quarterly	9	
	Abrahamic traditions and egg freezing: Religious Women's experiences in local moral worlds	2020	Social Science and Medicine	8	
	Performing citizenship on YouTube: Activism, satire and online debate around the anti-Islam video Fitna	2010	Critical Discourse Studies	104	
van Zoonen, Liesbet	Cosmopolitan communication online: YouTube responses to the anti-Islam film Fitna	2011	British Journal of Sociology	21	3
	How funny can Islam controversies be? Comedians defending their faiths on YouTube	2013	Television and New Media	7	
	Performing citizenship on YouTube: Activism, satire and online debate around the anti-Islam video Fitna	2010	Critical Discourse Studies	104	
Vis, Farida	Cosmopolitan communication online: YouTube responses to the anti-Islam film Fitna	2011	British Journal of Sociology	21	2
	Performing citizenship on YouTube: Activism, satire and online debate around the anti-Islam video Fitna	2010	Critical Discourse Studies	104	
Mihelj, Sabina	Cosmopolitan communication online: YouTube responses to the anti-Islam film Fitna	2011	British Journal of Sociology	21	2
	Privacy & social media in the context of the Arab Gulf	2016	DIS 2016 - Proceedings of the 2016 ACM Conference on Designing Interactive Systems: Fuse	98	
	#ISISisNotIslam or #DeportAllMuslims? Predicting unspoken views	2016	WebSci 2016 - Proceedings of the 2016 ACM Web Science Conference	49	
Abokhodair, Norah	Photo sharing in the Arab gulf: Expressing the collective and autonomous selves	2017	Proceedings of the ACM Conference on Computer Supported Cooperative Work, CSCW	33	6
TVOI G.I.	Privacy and twitter in Qatar: Traditional values in the digital world	2016	WebSci 2016 - Proceedings of the 2016 ACM Web Science Conference	26	
	"Against marrying a stranger:" Marital matchmaking technologies in Saudi Arabia	2017	DIS 2017 - Proceedings of the 2017 ACM Conference on Designing Interactive Systems	20	
	Holy Tweets: Exploring the Sharing of Quran on Twitter	2020	Proceedings of the ACM on Human-Computer Interaction	7	
Vieweg, Sarah	Privacy & social media in the context of the Arab Gulf	2016	DIS 2016 - Proceedings of the 2016 ACM Conference on Designing Interactive Systems: Fuse	98	3

	Photo sharing in the Arab gulf: Expressing the collective and autonomous selves	2017	Proceedings of the ACM Conference on Computer Supported Cooperative Work, CSCW	33	
	Privacy and twitter in Qatar: Traditional values in the digital world	2016	WebSci 2016 - Proceedings of the 2016 ACM Web Science Conference	26	
	Creative and Lucrative Dawa: The Visual Culture of Instagram amongst Female Muslim Youth in Indonesia	2018	Asiascape: Digital Asia	61	
	Social media and the birth of an Islamic social movement: ODOJ (One Day One Juz) in contemporary Indonesia	2018	Indonesia and the Malay World	35	
Nisa, Eva F.	The internet subculture of Indonesian face-veiled women	2013	International Journal of Cultural Studies	30	5
	Muslim Women in Contemporary Indonesia: Online Conflicting Narratives behind the Women Ulama Congress	2019	Asian Studies Review	22	
	Internet and Muslim Women	2021	Handbook of Contemporary Islam and Muslim Lives	0	
	Hate in a tweet: Exploring internet-based islamophobic discourses	2018	Religions	42	
	Hybrid Muslim identities in digital space: The Italian blog Yalla	2017	Social Compass	22	
	Emotional politics, islamophobic tweets: The hashtags #Brexit and #chiudiamoiporti	2019	Partecipazione e Conflitto	8	
Evolvi, Giulia	The veil and its materiality: Muslim women's digital narratives about the burkini ban	2019	Journal of Contemporary Religion	8	6
	Introduction: Islam, space, and the internet	2021	Journal of Religion, Media and Digital Culture	4	
	Likes, comments, and follow requests: The instagram user experiences of young Muslim women in the Netherlands	2021	Journal of Religion, Media and Digital Culture	2	
Akou, Heather Marie	Building a new "world fashion": Islamic dress in the twenty-first century	2007	Fashion Theory - Journal of Dress Body and Culture	38	2
iviarie	Interpreting Islam through the Internet: Making sense of hijab	2010	Contemporary Islam	28	
Ibtasam, Samia	"My cousin bought the phone for me. I never go to mobile shops.": The role of family in women's technological inclusion in Islamic culture	2019	Proceedings of the ACM on Human-Computer Interaction	35	2
·	For God's sake! Considering Religious Beliefs in HCI Research: A Case of Islamic HCI	2021	Conference on Human Factors in Computing Systems - Proceedings	9	
	Hijabers on instagram: Using visual social media to construct the ideal muslim woman	2018	Social Media and Society	33	
Baulch, Emma	Beyond the Middle Classes, Beyond New Media: The Politics of Islamic Consumerism in Indonesia	2024	Asian Studies Review	0	2
Pramiyanti, Alila	Hijabers on instagram: Using visual social media to construct the ideal muslim woman	2018	Social Media and Society	33	2
i raiinyanu, Allid	Hijabers on Instagram: Using Visual Social Media to Construct the Ideal Muslim Woman	2018	Social Media and Society	27	۷

	Accelerating Islamic charities in Indonesia: zakat, sedekah and the immediacy of social media	2020	South East Asia Research	28	
Slama, Martin	Online piety and its discontent: revisiting Islamic anxieties on Indonesian social media	2018	Indonesia and the Malay World	27	3
	Imagining indonesian islam as a center: New mediations and old concepts of power	2020	Archiv Orientalni	4	
	Muslim women's online discussions of gender relations in Islam	2010	Journal of Muslim Minority Affairs	25	
Piela, Anna	How do Muslim women who wear the niqab interact with others online? A case study of a profile on a photo-sharing website	2017	New Media and Society	7	3
	Online Islamic Spaces as Communities of Practice for Female Muslim Converts Who Wear the Niqab	2015	Hawwa	4	
Croborny	Women's Digital Activism in a Changing Middle East	2015	International Journal of Middle East Studies	24	
Sreberny, Annabelle	The internet in Iran: The battle over an emerging virtual public sphere	2010	Internationalizing Internet Studies: Beyond Anglophone Paradigms	3	2
	Glaze production at an early Islamic workshop in al-Andalus	2019	Archaeological and Anthropological Sciences	21	
Salinas, Elena	An early example of glaze technology diffusion in North Africa: The Islamic workshop of Tahert (central Maghreb, Algeria)	2023	Journal of Archaeological Science: Reports	0	2
	Glaze production at an early Islamic workshop in al-Andalus	2019	Archaeological and Anthropological Sciences	21	
Pradell, Trinitat	An early example of glaze technology diffusion in North Africa: The Islamic workshop of Tahert (central Maghreb, Algeria)	2023	Journal of Archaeological Science: Reports	0	2
Mihelj, Sabina	Performing citizenship on YouTube: Activism, satire and online debate around the anti-Islam video Fitna	2010	Critical Discourse Studies	104	2
e.j, submu	Cosmopolitan communication online: YouTube responses to the anti-Islam film Fitna	2011	British Journal of Sociology	21	_

Figure 13, Table 6, and Table 7 present a comprehensive analysis of the role and contributions of female authors in digital Islamic literature, highlighting their significant impact across various disciplines, such as social sciences, medical anthropology, and geopolitics. It shows the diversity of topics covered by these authors, including environmental ethics, women's political rights, and the implications of new reproductive technologies in Middle Eastern societies. This research emphasizes the importance of collaboration among female scholars and the high level of recognition they receive, as evidenced by citations. Notably, Marcia C. Inhorn stands out for her contribution to medical anthropology and reproductive technology. This paper also identifies emerging themes in digital Islamic literature, such as the expression of Islamic identity through social media (Abokhodair & Vieweg, 2016), the intersection of technology with religious practice, and evolving gender dynamics in Muslim societies (Clarke & Inhorn, 2011; Inhorn, 2003, 2004, 2006; Stowasser, 2001). This analysis challenges existing perceptions of gender bias in Islamic studies and the digital humanities, underscoring the vital role female authors play in advancing the discourse on Islam and digital culture (Clarke & Inhorn, 2011; Inhorn, 2003, 2004, 2006).

An analysis of the most prolific female writers in the digital Islamic literature reveals a dynamic and diverse field. Their contributions not only enrich the academic world but also provide deep insights into the complexities of digital Islam and gender dynamics.

# *RQ7:* Most cited references in digital islam literature

This study uses bibliometric indicators, such as the most cited references by the author and the most cited sources and references, to analyze the theoretical framework that dominates studies on the interaction between Islam and digital technology.

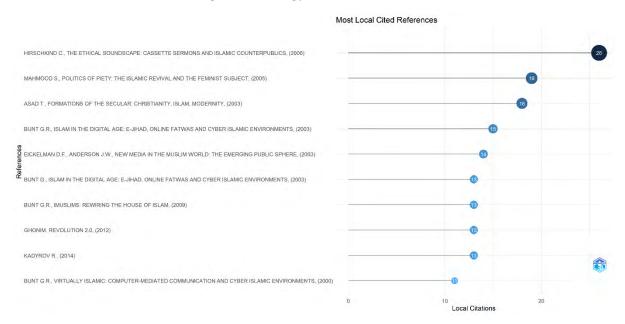


Figure 14. Most cited Reference by Author in Digital Islam

<u>Figure 14</u> shows the names of the authors of the documents referenced in the 1060 articles analyzed in this study. The table below provides a detailed summary of the 15 most influential authors.

Table 7. 15 Most Influental References Authors

Authors	Citation
Bunt G.R.	91
Foucault M.	71
Roy O.	71
Campbell H.	66
Mandaville P.	66
Eickelman D.F.	64
Anderson J.W.	63
Hirschkind C.	60
Asad T.	55
Inhorn M.C.	55
Bunt G.	53
Campbell H.A.	53
Slama M.	50
Mahmood S.	48
Ahmed S.	42

<u>Table 8</u> shows the authors who made the most significant contributions to the 1060 pieces of literature examining the relationship between Islam and digital technology, based on the number of citations to their work in the documents analyzed.

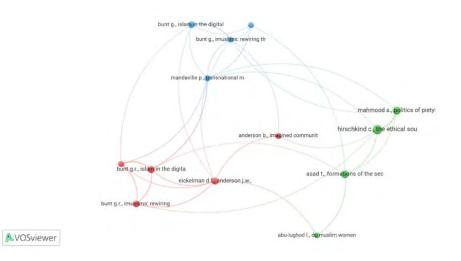


Figure 15. Most Cited References in Digital Islam

Table 8. 15 Most Cited References in Digital Islam

Authors	Article	Citations
	The Ethical Soundscape: Cassette Sermons and Islamic	
Hirschkind C. (2009)	Counterpublics	26
Mahmood S. (2012)	Politics of Piety: The Islamic Revival and the Feminist Subject	19
Asad T. (2010)	Formations of the Secular: Christianity, Islam, Modernity Islam in the Digital Age: E-Jihad, Online Fatwas and Cyber	18
Bunt G.R. (2003) Eickelman D.F.,	Islamic Environments	28
Anderson J.W. (2003)	New Media in the Muslim World: The Emerging Public Sphere	14
Bunt G.R. (2009)	iMuslims: Rewiring the House of Islam Virtually Islamic: Computer-Mediated Communication and	23
Bunt G.R. (2000)	Cyber Islamic Environments	11
Mandaville P. (2006)	Transnational Muslim Politics: Reimagining the Umma	11
Abu-Lughod L. (2015)	Do Muslim Women Need Saving? Imagined Communities: Reflections on the Origin and Spread of	10
Anderson B. (1991)	Nationalism	10
Roy O. (2004)	Globalized Islam: The Search for a New Ummah	10

<u>Figure 15</u> and <u>Table 9</u> show the significant works frequently cited in the literature on the correlation between Islam and technology, emphasizing their impact on shaping academic comprehension of the topic.

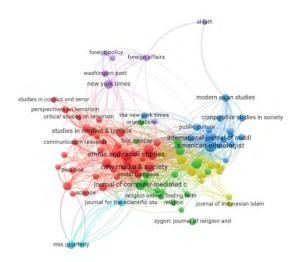






Figure 16. Most Cited Sources

Table 9. 15 most cited sources

Sources	Citation
American Ethnologist	94
Ethnic and Racial Studies	93
New Media & Society	103
Contemporary Islam	62
Journal of Communication	73
Journal of Computer-Mediated Communication	64
Journal of Ethnic and Migration Studies	63
New Media in the Muslim World: The Emerging Public Sphere	63
The New York Times	56
Information, Communication & Society	56
Social media + Society	46
International Journal of Communication	46
Computers in Human Behavior	47
The Muslim World	49
Indonesia and the Malay World	49

The interaction between Islam and digital technology is a dynamic and interdisciplinary field of study, as observed from the analysis of various data sources in Figure 16 and Table 10. Multiple disciplines such as anthropology, sociology, and media studies contribute to this research by offering diverse perspectives on the topic. The most-cited references indicate a significant focus on the influence of new media and communication technologies on Muslim life. Scholars such as Bunt and Hirschkind are recognized for their influential contributions to the field. Several journals, including "American Ethnologist," "New Media & Society," and "Contemporary Islam," Contemporary Islam, are important sources for publishing current and influential studies on this subject. Research in this area considers both global and local contexts, recognizing the unique social, cultural, and political dynamics at play. Critical topics that are frequently explored include identity, online Muslim communities, religious practices in the digital age, and debates on religious authority in digital spaces. Overall, this study combines theoretical analysis with empirical case studies to understand the impact of technology on the social and spiritual dimensions of Muslims' lives.

# **Discussion**

When did the discourse on Islam and digital technology begin?

In this regard, bibliometric analysis indicates that digital Islam has gained growing academic interest since 1969, a rise that has evolved significantly since the early 2000s. There are two primary reasons for this increase: first, the global repercussions of the post-9/11 world and second, the radical development of information and communication technologies. The 9/11 terrorist attacks undoubtedly changed global perceptions of Islam significantly, and with increasing Internet usage, it became all the more pressing to understand its digital representations. At the same time, Internet and mobile technologies were redefining religious, social, and cultural engagements within Muslim communities, and scholars came forward to take a closer look at those dynamics with digital lenses, creating fruitful academic discourses that opened up journals and conferences such as 'Religions,' the 'Indonesian Journal of Islam and Muslim Societies,' 'Contemporary Islam,' and the 'International Conference on Information and Communication Technology for the Muslim World.'

Indeed, several stages of technological adoption in religious practices have been identified in the literature. Evolvi (2021) defined four phases of digital-religious evolution from the mid-1990s to the late 2010s: the use of religious websites, apps, and social media for religious purposes. As Bunt (2000) pointed out, the integration of the Internet into religious practice allows for remote access to sermons and the sharing of religious experiences. These efforts are reflected in the publication and citation trends of the field, with spikes in major years such as 2003, 2004, and 2016, and a fall from 2019 to 2024, indicating that research on the development of understanding of how digital technologies reshape Islamic practices and identity has continued.

The adoption of technology in Islamic contexts is shaped by a mix of historical, technological, and sociopolitical factors. While Rapoport (1983) and Robinson (1993) do not directly address Digital Islam, they offer key insights into how technology intersects with Islamic practices and communities.

Rapoport's work delves into the use of organized networks and strategic communication by the Assassins, highlighting historical precedents for how modern extremist groups might exploit digital tools. This historical context can help us to understand the current dynamics in which digital platforms are used to spread religious and ideological narratives.

Robinson, on the other hand, focused on the impact of print technology on Islamic knowledge transmission. He observed initial resistance to this new technology in Muslim societies. This resistance and subsequent adaptation reflect the broader patterns seen today as Islamic communities engage with digital innovations.

Together, these studies show that the integration of technology in Islamic contexts is influenced by historical precedents and sociopolitical dynamics, shaping the evolution of traditional practices in the digital age.

This aligns with numerous studies indicating that discussions on Islam and digital technology stretch back to the 1970s (Halevi, 2021, pp. 1975–2010). During this period, there was a significant discourse on religio-technological innovations, leading to the creation of devices tailored to meet the needs of Muslims. Over the next three decades, as highlighted by Halevi (2021), there was a remarkable surge in inventions targeting the Islamic market, such as the first Islamic electronic watch and even devices like "The Muslim Xbox."

The introduction of printing technology played a crucial role in integrating Islamic knowledge into Muslim society. This shift significantly influenced the development of concepts like "tradition" and "modernity" within these communities (Roper, 2017).

Moreover, the advancement of digital technology has had a profound impact on the spread of extremist views and the rapid rise of cyber jihad within the online Muslim community or cyber ummah (Czornik, 2024).

How has digital technology and social media evolved and affected Muslim communities?

Analyzing influential authors in the digital Islam literature using VOS Viewer highlights several key contributors whose work has had a significant impact. Norah Abokhodair, Sarah Vieweg, Marcia C. Inhorn, Eva F. Nisa, Giulia Evolvi, Morgan Clarke, Patrick Eisenlohr, and Emma Baulch stand out due to their substantial citations, showcasing their important contributions to the field.

Abokhodair's research gives us a fascinating look at how technology, privacy, and cultural norms come together in the Arabian Gulf. In 2016, she was part of a study showing that social media can predict attitudes towards Muslims, even if Islam is not directly mentioned (Magdy et al., 2016). Another study from the same year examined how cultural and religious values shape privacy views among Gulf citizens (Abokhodair & Vieweg, 2016). She also used predictive modeling to examine American attitudes towards Islam on Twitter after the Paris attack (Abokhodair et al., 2016).

In 2017, Abokhodair explored photo-sharing habits in the Arabian Gulf and found that people often prioritized the collective self over individual preferences when sharing photos (Abokhodair et al., 2017). She also looked into how socio-technical and cultural factors influence the use of matchmaking technology in Saudi Arabia, offering valuable design insights (Al-Dawood et al., 2017).

In 2020, Abokhodair's research on sharing Quranic verses on Twitter highlighted that online platforms not only extend religious life offline, but also create new ways for religious expression and community building (Abokhodair et al., 2020). Her work helps us to understand the complex relationship between digital technology, culture, and religion in the Arabian Gulf.

Marcia C. Inhorn's work interrogates the complexity of infertility and new reproductive technologies, particularly in the Middle Eastern setting. It has examined globalization and in vitro fertilization technologies, stigma, secrecy, and pronatalist societies in cases of male infertility and religious and cultural resistance to options such as gamete donation and adoption among Muslim men (Inhorn, 2003, 2004, 2006). She also investigated the role of religious authority on reproductive technology in Shia Islam, captured Dubai as an upand-coming site for medical tourism, which specializes in technologies such as ICSI, and wrote about how religiously observant women from Abrahamic traditions received elective egg-freezing. In her presentation, she shows how cultural expectations, religious beliefs, and state-of-the-art medical technologies fuse to shape attitudes toward infertility and family planning (Inhorn, 2011; Inhorn, 2017; Clarke & Inhorn, 2020).

Eva F. Nisa's research examines the ways in which Indonesian Muslim women interact with digital technology and Islamic culture, and how this shapes their religious and social identities. The 2013 study focused on an online subculture of veiled women in Indonesia who used the Internet to promote Islam and challenge perceptions of oppression. Digital platforms allow women to form subcultures and strengthen their religious communities (Nisa 2013). In 2018, Nisa conducted research on the use of Instagram by young Indonesian Muslims and demonstrated that social media can be utilized as a platform for religious education and identity expression through creative forms of da'wah (Nisa, 2018b). He also found that the One Day One Juz (ODOJ) movement, which employs WhatsApp to

promote Quran recitation, exemplifies how digital tools can enhance religious mobilization (Nisa, 2018c). In 2019, Nisa conducted research on Indonesia's inaugural congress of female Muslim scholars, examining the impact of this event on women's visibility and influence on Islamic discourse (Nisa, 2019). Nisa's most recent research in 2021 examined the broad impact of the Internet on Muslim women globally, demonstrating that digital platforms empower them to challenge traditional religious authorities and to express diverse religious and gender identities (Nisa, 2021). Nisa's research demonstrated the significant impact of the Internet and social media on religious, cultural, and social dynamics among Muslims in Indonesia and globally.

Giulia Evolvi's research explores the intersection of Islam, identity, and digital spaces. She focuses on how digital platforms serve as arenas for expressing and negotiating Muslim identities, particularly within European contexts, where Islam is often seen as conflicting with local values. In her work, Evolvi examined the narratives of young Italian Muslims on the blog "Yalla Italia," highlighting how they challenge mainstream media stereotypes and advocate social change, including quicker citizenship processes (Evolvi, 2017). She also analyzed online Islamophobia, detailing how Internet discourses enhance existing anti-Muslim sentiments by framing Muslims as incompatible with Western values (Evolvi 2018). Additionally, Evolvi discusses the materiality of Muslim women's dresses, such as the burkini, in digital narratives to counteract stereotypes and assert their rights within public spaces (Evolvi, 2019a, 2019b). Lale Mahmudova and Giulia Evolvi's (2021) study explores the impact of Instagram on young Dutch Muslim women, highlighting how the platform facilitates identity expression but also exposes users to privacy issues. Their work shows how these women navigate their religious and cultural identities in a Western context, using digital spaces. Additionally, a special issue edited by Evolvi and Maria Chiara Giorda (2021) discussed the redefinition of religious and spatial boundaries through digital platforms. This issue argues that digital spaces create "hybrid religious performances" that link local and global contexts, affecting how religious practices are performed and understood today. These studies provide insights into the complex interplay between digital environments, religious identity, and community belonging. Her studies collectively illustrate how digital environments act as "third spaces" for hybrid religious performances, challenging and reshaping traditional notions of religious identity in the contemporary digital era.

Morgan Clarke's research encompasses several key themes related to kinship, reproductive technologies, and Islamic law within the context of the Middle East, notably in Lebanon. Here, a concise paragraph summarizing his work along with the publication years is as follows: Morgan Clarke investigates the interplay between Islamic legal traditions and modern reproductive technologies, revealing how traditional concepts such as milk kinship (2007b) adapt to contemporary challenges such as donor eggs and surrogacy, thereby persisting rather than diminishing modernity. His work on kinship and biomedicine (2007a, 2007b) explores notions of 'closeness' in the context of new medical technologies and their implications for social and ethical norms in Lebanon. In another study, Clarke (2008) examined how kinship is shaped by new reproductive technologies, the overarching themes of sexual morality, and its political ramifications in the Middle East. Clarke, along with C. Marcia Inhorn examined the relationship between religious authority and assisted reproductive technologies in Shi'i Islam, focusing on the dynamics between senior clerics and their followers in the context of infertility treatments (Clarke & Inhorn, 2011). Through these studies, Clarke provides insightful analyses of how traditional practices and new technologies coalesce in the modern Islamic world.

Patrick Eisenlohr's scholarly work extensively explores the intricate relationships between religious practices, media technology, and notions of authenticity and authority within the context of Mauritian Islam. His studies detail how modern media technologies not only transform religious practices, but also challenge and redefine traditional notions of religious authority and the mediation of the sacreds.

In 2009, Eisenlohr examined the dialectics of mediation and immediacy in religious settings, showing how theological assumptions about mediation shaped the use of media technology (Eisenlohr, 2009). By 2010, he had further delved into how sound reproduction technologies impacted the transnational circulation of devotional discourse (Eisenlohr, 2010). His research emphasizes the interaction between language as a medium and other media technologies in religious life (Eisenlohr, 2011). In 2013, Eisenlohr explored how religious performances in Mauritius act as diasporic heritage, legitimizing claims on citizenship through the materiality of religious practice (Eisenlohr, 2013). Finally, in 2014, he analyzed the public and mediated aspects of religion among Mauritian Muslims, highlighting the complex relationship between media practices and religious experiences (Eisenlohr, 2014). Through these studies, Eisenlohr provides valuable insights into the dynamic interplay between religion, media, and cultural identity in a globalized world.

Emma Baulch, in collaboration with Alila Pramiyanti and Julian Millie, engages in research that combines themes of Islamic consumerism, social media, and identity within the Indonesian context. Pramiyanti and Baulch (2018) focused on how members of Indonesia's Hijabers' Community use Instagram to perform and negotiate aspects of their identity. This involves framing their presentation within the context of "dakwah" (Islamic preaching) and middle-class aesthetics, creating a unique intersection between religious duty and social media performance. This performance on Instagram is analyzed as both a variant of post-feminist empowerment and a form of electronically-mediated Muslim preaching, highlighting a complex "composite habitus" where global digital culture and Islamic communication intersect.

Millie and Baulch (2024) expand on these themes by exploring the broader implications of Islamic consumerism in Indonesia beyond the confines of the middle class. They discuss the increasing interplay between religion and consumerism facilitated by new technologies, the role of social media in shaping Islamic authority, and the need for a renewed focus on the materiality and social meaning of Islamic practices. This work suggests a dynamic and evolving landscape in which traditional boundaries within Islamic practice are reshaped by modern consumers and digital cultures.

Researchers such as Abokhodair Norah and C. Marcia Inhorn, Eva F. Nisa, Giulia Evolvi, Morgan Clarke, Patrick Eisenlohr, and Emma Baulch provide in-depth insights into the influence of digital technologies on Islamic practice and identity. Abokhodair's research focuses on the impact of digital technologies on privacy and social interaction, whereas Inhorn's work delves into the implications of reproductive technologies for social views. Nisa's research explored the digital expressions of religious and social identities. Evolvi examined representations of Muslim identity in the media, Clarke assessed the adaptation of Islamic law to biotechnology, Eisenlohr examined changes in religious authority brought about by media technology, and Baulch highlighted the impact of social media on consumerism and dawah. Collectively, these studies demonstrate how technology affects religious interpretations and practices in the modern era.

The bibliometric analysis of female authors in digital Islamic literature shows their significant impact across diverse fields, such as social sciences, medical anthropology, and geopolitics, covering topics such as environmental ethics, women's political rights, and reproductive technologies in the Middle East. This research highlights the importance of female collaboration and its high recognition in academia with Marcia C. Inhorn noted her contribution to the field of medical anthropology. The paper also explores emerging themes, such as the expression of Islamic identity through social media and the evolving gender dynamics in Muslim societies, challenging traditional perceptions of gender bias in Islamic studies and digital humanities. This highlights the crucial role female authors play in advancing discussions on Islam and digital culture.

This bibliometric analysis highlights the critical intersection between digital technologies and religious practices, particularly through the work of scholars, such as Abokhodair and Nisa. These authors document how digital platforms facilitate new forms of religious expression among Muslim women, offering them a space to negotiate and redefine their religious and social identities. This directly correlates with theoretical discussions on cultural empowerment and preservation, where digital media is seen as a catalyst for sociocultural change in Islamic societies (Buchanan & Husain, 2022). Abokhodair and Nisa's findings suggest that, while digital media enables broader expressions of identity, it also complicates traditional religious practices by introducing new modes of engagement that can both support and challenge existing religious norms (Campbell, 2012).

In addition, keyword occurrence mapping and thematic evolution techniques identified ten thematic clusters covering a range of contemporary social issues. These include the role of digital platforms in shaping cultural and religious identities, the interaction between Islamic traditions and modern challenges, and the socio-political dynamics in the Middle East after the Arab Spring. The research also highlights how digital media influence terrorism, activism, and identity politics in various regions, including West Africa and Indonesia.

Thematic map analysis categorizes these themes based on their relevance and development stage, pinpointing key topics such as terrorism and the Islamic State as central to discussions on the impact of digital technology on religious discourse. From 2008 to 2024, there has been a noticeable shift towards integrating digital technologies into Islamic practices. This period has also seen an expansion of discussions to include pressing global issues, such as globalization, Islamophobia, and digital activism. This evolution indicates a dynamic change in the field of Islamic studies, reflecting the growth and transformation of these themes over time.

Thematic analysis identifying key clusters of digital activism, terrorism, and religious tolerance provides a deeper understanding of how digital media impacts religious tolerance and extremism (Arzroomchilar, 2022). For example, the correlation between the proliferation of digital platforms and the increase in extremist content and counter-discourses promoting tolerance underscores the dual effects of digital technologies (Arzroomchilar, 2022). This reflects theoretical assertions about the risks of digital transformation, such as cyber jihad and the spread of extremist ideologies, while highlighting the potential of digital media to foster a more inclusive understanding of religious diversity (Bunt, 2003; Czornik 2024).

Moreover, the emergence of themes related to the virtualization of traditional religious practices, such as pilgrimages, correlates with changes in religious education and practices (Khairudin and Mohammad 2021). The shift from in-person religious instruction to digital forums not only democratizes access to religious knowledge but also changes the underlying dynamics of religious authority and learning. This is in line with the theoretical impact noted in the transformation of religious education, where digital media reshapes the interaction between clerics and society, potentially weakening traditional authoritative structures while expanding access (Sheikh Khairudin & Mohammad, 2021).

Bibliometric findings also suggest a significant correlation between increasing digital literacy and the evolution of religious practices and identities. As digital literacy increases, so does the engagement and reinterpretation of Islamic content online, leading to positive outcomes such as increased educational opportunities, and negative outcomes such as the potential for misinterpretation and misuse of religious texts (Araniri et al., 2021).

### What is digital islam?

This bibliometric analysis derived major findings in the form of influential authors, the most impactful articles, topic trends, evolved topics, and highly cited references among authors who have written articles on Digital Islam. The main findings described above can be the basis for developing what and how this concept of digital Islam is actually. In view of these results, I discuss digital Islam in more detail.

These two major terms often appear as the basis of writers' thoughts in the discourse of Islam in the digital age: digital religion and the term digital ummah or cyber ummah. Thus, it is imperative to first situate our understanding of these two terms.

Digital religion describes the intersection, transformation, and coexistence of religious practices with digital technology and culture. Otherwise, it means showing religious beliefs, experiences, and negotiations emanating from practices, communities, and identities within online spaces, such as social media, websites, virtual reality environments, and online forums. It investigates how online and offline religio-spatial activities are entwined and how digital technologies have traditionally shaped religious practices (Campbell and Evolvi 2020). It also considers the new spiritualities and innovative forms of religious participation that the digital world makes possible (Campbell and Evolvi 2020). The focus is also on how digital media and the Internet shape the concern of how religiously devoted people practice their religion, interact with religious communities, and integrate their religion into digital culture, thus changing the contemporary landscape of religiosity (Campbell 2017).

Cyber Ummah "Cyber Ummah" or "Virtual Ummah" refers to the Islamic community in cyberspace that resulted from the introduction of the Internet into the Muslim world. Cyber Ummah is a community that exists online, transcending geographical and other borders such as ethnicity and culture (Khamis, 2018). In this regard, the Internet presents a platform for global communication among various groups of Muslims and between different groups of Muslims and non-Muslims (Khamis 2018). It constructs an interactive egalitarian virtual community that allows the formulation of new identities and resistance to online Islamic discourse. Cyber Ummah holds implications for the creation of varied identities and resistance that set up different discourses and sites of Islam in cyberspace (Khamis, 2018). Online sites and platforms are oriented to work like virtual markets, within which exchange takes place between ideas and concepts relating to Islam and Muslims. There is recourse to different mainlines and alternative sources of Islamic doctrines and scriptures in online spaces for Muslims. All things considered, Cyber Ummah has happened to be a phenomenon denoting changes in Muslim societies on the Internet and offline, and thus participates in the process of constructing the religious, social, and cultural settings of the digital age Muslim communities.

Influential contributors to the stream of digital Islamic literature include Norah Abokhodair, Sarah Vieweg, Marcia C. Inhorn, Eva F. Nisa, Giulia Evolvi, Morgan Clarke, Patrick Eisenlohr, and Emma Baulch. A high number of citations indicates high impact. These researchers have contributed a vital element in understanding how digital technologies have affected Islamic practices and identity. Abokhodair focuses on privacy and social interaction; Inhorn on reproductive technologies; Nisa on digital articulations of religious and social identity; Evolvi on media representations of Muslim identity; Clarke on the adaptation of Islamic law regarding biotechnology; Eisenlohr deals with how media technology affects religious authority; and lastly, Baulch on social media's part in consumerism and dawah. Meta-analyses in this line demonstrate the role of technology as a reshaper of contemporary religious interpretation and practice.

In terms of Digital Islam, concerning SRA findings, a number of points came across this digital Islamic trend. First, the influence of digital technology and, in particular, social media, changed the way

religious information is transmitted and constructed as religious discourse within the world's Muslim-communities. People are able to seek religious information on their own via the Internet, thus shifting their traditional religious authority and digitally empowering them (Robinson 1993; Turner 2007). It has further opened the world to interconnectivity and created spaces for international discussion, interpretation, and understanding of Islam. This kind of expansion erodes traditional authority, while Alternative Islamic scholarship, with alternative interpretations and translations of Islām, is offered in the digital framework (Robinson, 1993).

Third, social media platforms could play a role in the maintenance of negative stereotypes about Islam and Muslims, as such discourses ultimately feed into the continuous discursive power in shaping the ecclesialspblic perception of religion (Eickelman, 2003). Moreover, the sharing of religious content in digital networks represents a contemporary adaptation in Islam, reflecting a broader tendency ushered in by the introduction of sound reproduction technologies in religious practices and, therefore, prefiguring Digital Islam.

Private and social media activities are strongly influenced by traditional values and cultural expectations of technology use. The role of a Muslim woman in the digital space is huge. Looking through the ways women use and influence the digital space—religiously, socially, and politically—it justifies the focus on gender when discussing Digital Islam (Nisa, 2018c, 2018a, 2021). Moreover, the use of, and resorting to, digital technologies in religious contexts—like in matchmaking technologies or sharing Quranic verses on Twitter—demonstrates the potential of digital technologies in the betterment of religious communities and practices (Abokhodair et al., 2020).

Understanding Digital Islam requires one to consider the social, cultural, and political contexts that envelop it. On digital Islam, various themes were found in the thematic analysis; specifically, "terrorism," "Islamic state," and "jihad" seem to be major foci of research interest, while "Malaysia," "technology," and "culture" have been identified as minor or less explored themes. From 2008 to 2021, there was already an increasingly visible change in issues underpinning the role of technology in religious practice, theological debate, and the quest for religious identity. Social media, especially Instagram, is rapidly becoming one of the major channels through which religious and political worldviews and views related to culture are expressed and debated, such as issues of Muslim identification and Islamophobia. More prominent now are intertwined Islam and technology, gender issues, and the representation of Muslim women. On the other hand, traditional religious themes like "Bioethics" and "Hajj" are of pivotal importance. Other sociopolitical issues being taken up for discussion relate to "Islamophobia" and "nationalism.". Drawing on these results, one can assume that digital Islam is a dynamic interaction phenomenon between Islamic doctrine and practices and advances in digital technologies. It involves applying information and communication technologies in religious contexts and permanently changing the way religious information is accessed and transmitted today, having a substantial impact on the social and cultural fabric of global Muslims.

The following aspects form the definition of Digital Islam:

- 1. Digital-Religious Interaction: Digital Islam is defined as the interaction between digital tools and Islamic religious activities, for instance, reading, worshiping, or even preaching. This also comprises reading the Quran through applications, discussing religion on Internet forums, and using social platforms to spread Islamic knowledge.
- 2. Online Religious Authority and Identity: The increase in online scholars and preachers is just a symptom of the change of religious authority from traditional to digital. These figures can influence religious thought widely, thereby exerting an immense religious authority without

- any geographical boundaries, hence changing the power dynamics within the Islamic community.
- 3. Virtual Community (Cyber Ummah): This concept of Cyber Ummah, or Virtual Ummah, brings out the issue of emerging Muslim identities and communities in cyberspace. Spanning across nations and cultures, it creates new settings for interchange and discourse among various groups within nations that constitute Muslims.
- 4. Technology and its Effects on the Practice and Interpreting of Religious Activities: The role of technology is not only to support religious practice, but it can also challenge the traditionalist's interpretation and open windows for new ones. Social media can be used to discuss religious issues that can influence recent norms and views.
- 5. Response to Social and Cultural Issues: Digital Islam also summarizes the response of the Muslim community to social and cultural issues inside digital media. This may comprise online campaigns against Islamophobia or details of how Muslims are integrated into non-Muslim societies. Moreover, it facilitates online dialogues for tolerance and understanding.

Digital Islam is, therefore, multi-disciplined into theology, sociology, information technology, and cultural studies. This contribution reflects how digital technologies have changed not only the forms of communication and interaction but also fundamentally intervened in how Muslims understand, practice, and promote their religion within the global and digital age.

# Theoretical frameworks in digital islam

This study aimed to understand the key theories and concepts that have shaped the field by identifying and analyzing the most cited documents and references in the literature. It also evaluates these theoretical frameworks to gain insights into how they explain the relationships between Islamic religious practices and the use and impact of digital technology. This study critically assesses the effectiveness and relevance of these theoretical approaches and suggests new directions for future research in this area.

As previously found, this study identified each of the 15 most-cited references, their sources, and authors. Some of the key concepts from these 15 references are as follows:

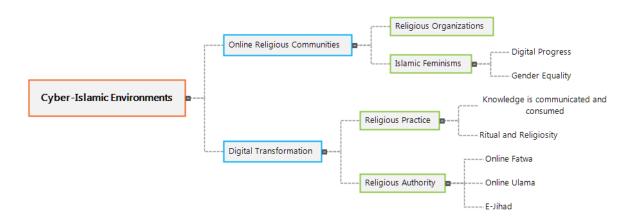


Figure 17. "Islam in the Digital Age" and "Hashtag Islam" by Gary R. Bunt

As shown in <u>Figure 17</u>, Bunt (2003, 2018) examined the transformative role of technology in Muslim religious practices, especially on the Internet. This work introduces the concept of the Cyber Islamic Environment, which has facilitated new forms of religious expression, such as E-jihad and online

fatwas. These developments allow for the wider dissemination of Islamic views and decision-making processes. The book also addresses the complexities of cultural mixing within online discourse, which presents opportunities for broadening the reach of traditional teachings and challenges to preserving religious authenticity. Furthermore, Bunt discussed the impact of technology on the expansion of Arabic culture and language, alongside concerns about online radicalization and identity formation. The author advocates constructive engagement with technology, emphasizing that innovation and adaptation are crucial for maintaining the essence of religious practices in the digital era. Bunt (2018) discussed the development of cyber-Islamic environments (CIES) and the relationship between technology and Islamic practices. The book reviews several key themes and perspectives, including the evolution of CIES as influenced by developments in Internet technology and how it is changing religious discourse and authority in Islam. The author uses an interdisciplinary approach by drawing on insights from fields such as sociology, anthropology, religious studies, and political science, to understand the complex interactions between technology and Islam. One important theme addressed in this book is the impact of technology on Islamic religious authority online, including the challenges faced by traditional authorities in the digital age, and the role of online platforms in shaping contemporary understandings of religious leadership. The book also explores the role of social media in shaping Muslim networks and influencing relationships between Muslim individuals and communities in various contexts.

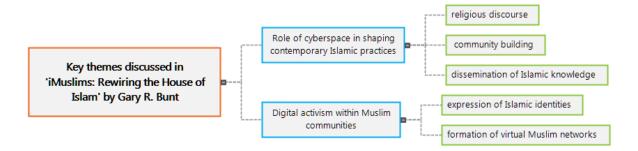


Figure 18. iMuslims: Rewiring the House of Islam by Gary R. Bunt

As shown In Figure 18, Bunt (2009) provides a comprehensive examination of the impact of online platforms on Islamic activism, jihadi networks, Muslim identity, and the spread of religious teaching. The book "iMuslims: Rewiring the House of Islam" by Gary R. Bunt explored the impact of digital technologies on Islamic practices and communities, discussing the intersection of technology, religion, and society. Bunt's work is informed by his previous research in books such as "Virtually Islamic" and "Islam in the Digital Age" (El-Nawawy, 2009). The book delves into themes such as the role of cyberspace in shaping contemporary Islamic practices, the emergence of digital activism within Muslim communities, and the reconfiguration of religious authority in online spaces (Weimann, 2010). Bunt's analysis highlights how the Internet serves as a platform for religious discourse, community building, and dissemination of Islamic knowledge. Additionally, the book examines how digital technologies influence the expression of Islamic identities and the formation of virtual Muslim networks (Weimann 2010).

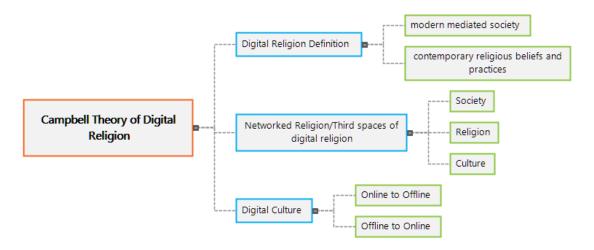


Figure 19. Campbell Theory of Digital Religion

The next expert who was also frequently cited by the authors in the analyzed articles was Heidi Campbell (2016). As Figure 19 shows, the concept often taken from Campbell is a digital religion. Exploration of the phenomenon of "Digital Religion" includes the study of how religion and new information communication technologies, especially the Internet, interact with each other. It examines how religious beliefs, practices, and communities manifest and transform in digital spaces, including online religious communities, virtual worship spaces, and religious rituals performed online (Campbell & Vitullo, 2016). Campbell's theory of Digital Religion studies the intersection of modern, highly digitized societies with contemporary religious beliefs and practices (Campbell & Vitullo, 2016; Helland, 2016). Digital religion is not only concerned with the existence of religion in digital media but also involves the interaction between social and cultural components and elements of digital society. Within this theory, there is the concept of "networked religion" which focuses on official religious activity in the digital world, as well as the "third space of digital religion," which addresses everyday or lived religion in a digital context (Campbell & Connelly, 2020). Campbell's theory also studies how divine revelation is presented and negotiated in digital culture, as well as how material religious practices and artifacts are packaged in online form (Sheldon & Campbell, 2021).

Researchers have explored the interconnections between online and offline religious realms, highlighting how traditional religious contexts blend with new digital contexts (Campbell 2012). In the Western context, "Digital Religion" has emerged as a way to discuss and study online religious practices that influence offline religious communities and institutions. The concept recognizes the unique influence of the Internet and digital technologies in shaping religious practices and beliefs as well as changing perceptions of religiosity in society. Digital Religious Studies is considered a subfield of broader disciplines, such as Internet Studies and Media, Culture and Religion Studies.

Research in this field was rooted in the mid-1990s, focusing on the use of the Internet by religious groups and its potential implications for religious beliefs and practices (Rapoport, 1983; Robinson, 1993). It also examines how religious groups move religious practices to the Internet, creating online communities and houses of worship, and conducting rituals online (Tsuria et al., 2017). Helland (2005; 2005) distinguishes between "religion online" versus "online religion," with "religion online" referring to information presented and controlled by traditionasl religious organizations or leaders, while "online religion" relates to religious innovation and collaboration that creates new understandings of religion through online environments.

Subsequent studies frequently cited in 1060 were spread across multiple authors. In contrast, the authors cited the work of Bunt and Campbell. Therefore, a focused summary of the most cited studies is presented in <u>Table 11</u>.

Table 10. Insight from other most cited references in Digital Islam

No.	Paper Title	Insight
1	The Ethical Soundscape: Cassette Sermons and Islamic Counterpublics	This book examines how cassette sermons became a powerful medium in Egypt for shaping public discussions on morality, demonstrating the role of new media in forming Islamic counterpublics.
2	Politics of Piety: The Islamic Revival and the Feminist Subject	Mahmood's work is a critical analysis of the Islamic revival movement in Egypt, focusing on women's participation. It challenges Western perceptions of agency and subjectivity, providing insights into the complex interplay between religion and gender.
3	Formations of the Secular: Christianity, Islam, Modernity	Asad explores the concept of secularism as it has evolved in Christian and Islamic contexts, questioning the assumptions of modernity and its impact on religious practices.
4	New Media in the Muslim World: The Emerging Public Sphere	This book discusses the transformative role of new media technologies in Islamic societies, highlighting how they have contributed to the emergence of a public sphere where traditional and modern values intersect.
5	Transnational Muslim Politics: Reimagining the Umma	Mandaville examines how Muslim politics transcends national boundaries, exploring the concept of the Umma (the global Muslim community) in the context of globalization and technological advances.
6	Do Muslim Women Need Saving?	Abu-Lughod critiques the Western narrative of rescuing Muslim women, arguing for a deeper understanding of cultural practices and the diverse experiences of women within Islamic societies.
7	Imagined Communities: Reflections on the Origin and Spread of Nationalism	Though not exclusively about the Islamic world, Anderson's seminal work on nationalism offers critical insights into how national identities are constructed, which is relevant to understanding Muslim identity and solidarity.
8	Globalized Islam: The Search for a New Ummah	Roy discusses the challenges and transformations within Islam in the context of globalization, focusing on the search for a new form of Muslim community that transcends traditional geographic and cultural boundaries.

Table 11 explores the dynamic role of digital platforms in shaping contemporary Islamic identities, practices, and communities, emphasizing their function as transformative public spaces. It highlights how digital spaces facilitate discussions of morality and ethics, challenge traditional boundaries, and enable the formation of new counterpublics within Islamic communities. Notably, this study addresses the impact of digital engagement on gender dynamics, offering perspectives on the resistance and reaffirmation of societal norms. It also delves into the intersection of secularism, modernity, and religion in digital contexts, enriching the discourse on Muslim societies' navigation of traditions and modernity. Furthermore, this study examines the concept of the Ummah in the digital age, focusing on how digital platforms redefine community boundaries and facilitate transnational connections. This collection of scholarly works provides a comprehensive overview of digital Islam, presenting it as a field in which traditional and modern elements intersect, highlighting the active role of digital spaces in reshaping Islamic identity, authority, and community in the 21st century.

Furthermore, with respect to the methods used in the study of digital Islam, It has been mentioned before that digital Islam is a sub-study of digital religion (Campbell, 2012, 2017; Campbell & Connelly,

2020; Helland, 2016; Sheldon & Campbell, 2021). Therefore, from the perspective of methods, the author agrees with what has been concluded by Tsuria et al. (2017) that textual analysis, interviews, and ethnography are the dominant research methods employed in the study of digital religion. The textual analysis method is divided into textual analysis in digital environments, textual analysis with digital tools, and textual analysis with a digital approach/frame. The interview method was divided into interviews in digital environments, interviews with digital tools, and interviews with digital approachs/frames. Ethnography is divided into digital, virtual, and online ethnography.

Furthermore, based on the analysis of the study and the main insights from most references, including the theories used and taken in digital Islam references, the following theoretical framework is formulated in this research:

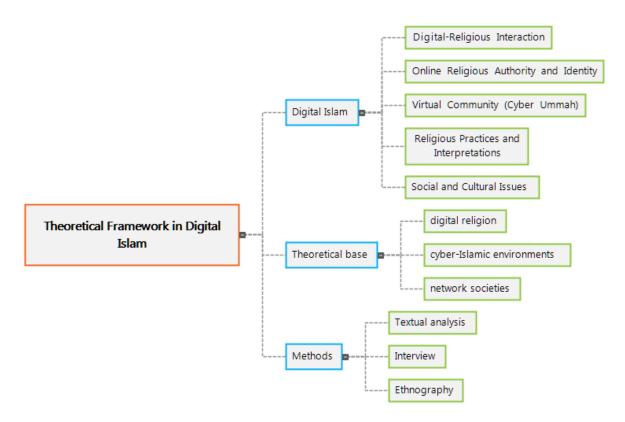


Figure 20. Theoretical Frameworks in Digital Islam

<u>Figure 20</u> presents a theoretical framework for the study of Digital Islam, in which the concept of interaction between religion and digital technology is the main focus. Within this framework, the study of digital Islam includes how religious authority and identity are explored and represented in online environments through practices such as the establishment of virtual communities or Cyber Ummahs that digitally connect global Muslims. Another important aspect is how religious practices and interpretations are adapted and interpreted in digital contexts, highlighting the social and cultural issues arising from these interactions.

Furthermore, a frequently used theoretical foundation is the concept of digital religion and the theory of the Cyber Islamic environment, which is an incarnation of the interaction between information technology and religion in a networked society. This approach opens a new perspective for understanding the dynamics of religious change in the context of modernity and globalization.

The most frequently used methods in this field include text analysis to understand narratives and discourses in digital content, interviews to gain an in-depth understanding of individuals engaged in

these activities, and ethnography, which allows direct observation of religious practices in digital environments. Through this approach, this research aims to provide a comprehensive picture of how Islam is interpreted and practiced in the digital age.

#### Conclusion

The discourse on Islam and digital technology began to gain significant academic attention in the early 2000s, catalyzed by the global impact of the post-9/11 world and the swift advancements in digital communication technologies. This period marked a pivotal shift in how Islamic practices and communities engaged with the digital world, leading to an increase in scholarly interest, as demonstrated by academic publications and citations. Studies have explored the integration of digital technologies into traditional Islamic practices and the emergence of online platforms as new venues for religious expression and community building.

A bibliometric analysis of digital Islamic literature identified several key contributors in the field. Norah Abokhodair, Sarah Vieweg, Marcia C. Inhorn, Eva F. Nisa, Giulia Evolvi, Morgan Clarke, Patrick Eisenlohr, and Emma Baulch are among the prominent researchers who have explored a wide range of topics related to digital Islamic literature. These themes encompass privacy and social interactions, reproductive technologies, digital expressions of religious and social identity, media representations of Muslim identity, adaptations of Islamic law to biotechnology, the impact of media technologies on religious authority, and the influence of social media on consumerism and da'wah (Islamic outreach). This analysis suggests that digital technologies have significantly shaped Islamic religious interpretations and practices in the modern era.

Research on digital Islam has progressively uncovered the complex layers of how technology influences religious practices, community dynamics, and identity within Muslim societies. The academic contributions from Authors such as Norah Abokhodair and Francis Robinson have highlighted the nuanced ways in which digital platforms facilitate both the continuity and transformation of Islamic practices. This evolution is evidenced in the growing body of literature examining digital religious practices, the shifting roles of religious authority, and the broader sociopolitical implications of technology on Islamic communities.

This study presents three foundational insights into digital Islamic studies, addressing key questions regarding the nature of digital Islam, its theoretical framework, and the significant role of women. First, it positions digital Islam as a critical subfield of digital religion, highlighting the intersection of Islamic traditions and digital technologies. This intersection catalyzes transformative shifts in religious practices, community formations, and identity reconstructions in the digital sphere, challenging conventional paradigms and forging a new understanding of Islam in the digital age.

Moreover, the research articulates the concepts of 'digital Muslim' and 'digital ummah' as central to this field. The 'digital Muslim' refers to individuals whose Islamic practice and community engagement take place in digital environments, and embodies the broader concept of the 'digital Ummah' - a global online Muslim community that transcends traditional geographic and cultural boundaries. This global community exemplifies significant changes in how religious information is disseminated and how Muslims worldwide connect, share, and interact in the digital age. The synonymous use of digital Muslims and ummah in this study underscores the seamless integration of individual and collective Islamic identities in digital spaces, demonstrating the expansive reach and communal solidarity of Islam across the digital landscape.

This study delves into the theoretical frameworks that frame digital Islam, drawing on disciplines such as digital religious studies, sociology, and anthropology to construct a comprehensive analytical lens.

By engaging with theories such as Heidi Campbell's "digital religion," Gary R. Bunt's "cyber-Islamic environments," and discussions of digital and social identity by Henri Tajfel, John Turner, and Manuel Castells' concept of "network societies," the research enriches our understanding of the socio-cultural and technological forces that shape the digital Muslim experience.

Significantly, women's empowerment and active participation in digital Islamic spaces have emerged as key findings that challenge traditional gender narratives. Women writers and scholars enrich the discourse, navigate, and influence the digital religious landscape through their contributions. The strategic use of digital platforms for education, socialization, and activism not only challenges established gender roles but also underscores women's empowerment and self-representation in the context of digital Islam.

In sum, the findings of this study highlight the transformative impact of digital Islam, characterized by the integration of tradition and digital innovation, the elucidation of multidisciplinary theoretical frameworks, and the dynamic engagement of women. By exploring the nature of digital Islam, the synonymous relationship between digital Muslims and Ummah, and the empowering role of women, this research significantly advances the field of action studies.

This study had some limitations that should be considered in future research. The use of the Scopus database may lead to missing important publications that are not indexed on this platform, such as Google Scholar, WoS, and other databases; thus, important data or developing trends may be missed. This study also had limitations in the timeframe of the study, as some studies were still in the process of being published or had not been published at the time of analysis. Nonetheless, the study achieved significant findings, including mapping key developments and trends in the incorporation of digital technologies in Islamic practices. These findings also emphasize the important role of digital platforms in education and religious engagement. This research provides a rich understanding of digital Islamic studies and demonstrates the evolving relationship between technology and religious practices, which can serve as a basis for further research.

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# Reviewer #3: I have provided my remarks in the attached file. It is aimed to assist authors to amend the manuscript accordingly.

- 1. You should write it in paragraph form and include prior research on Islam and technology.

  I have compiled in paragraphs and made sure that only research related to Islam and technology,
  I also added 3 other studies as I highlighted in yellow on pages 3-4. The added studies are:
  - "Wildman (2022) conducted a bibliometric analysis focusing on social scientific publications within the North American Association for the Study of Religion (NAASR). The study utilized bibliometric methods to explore scholarly communication dynamics and highlighted the benefits of online academic conferences in broadening the audience reach. Wildman discussed the use of computational modeling and simulations by Schults to examine religious phenomena and Miller's framework of "queer democracy" to historicize Christian nationalist politics. However, this study's limitation lies in its narrow focus on NAASR publications, which may not fully capture the global scope of religious studies.

Bukhari et al. (2023) used VOS Viewer to map research on the impact of digital media on the conventional da'wah in Padang City. A qualitative phenomenological study found that digital media significantly influences people's behavior more than traditional da'wah messages. Conventional preachers who lack digital skills face challenges in message transmission, emphasizing the need for digital competencies. The study's limitation is its focus on a single city, which potentially does not represent broader trends. Judijanto et al. (2024) conducted a systematic literature review to examine digital freedom and Islamic ethics. They highlighted that while digital freedom allows unrestricted information access, it presents challenges, such as privacy concerns and cybersecurity threats. The study emphasized the adaptability of Islamic ethics in addressing these issues, but noted limitations due to interpretative variations and the fast-evolving nature of technology."

- Wildman, W. J. (2022). The Academic Study of Religion in Bibliometric Perspective. *Bulletin for the Study of Religion*, *50*(3), 88–98. <a href="https://doi.org/10.1558/bsor.21127">https://doi.org/10.1558/bsor.21127</a>
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- Judijanto, L., Nasar, I., Muhammadong, M., Khaerunnisa, K., & Amer, M. A. B. (2024).
  DISMANTLING THE NOTION OF DIGITAL FREEDOM IN THE CONTEMPORARY ERA:
  ANALYSING THE ISLAMIC DISCOURSE ON ETHICS, RESPONSIBILITY, AND ITS DYNAMIC
  INFLUENCE ON TECHNOLOGICAL ADVANCEMENTS. INTERNATIONAL JOURNAL OF SOCIETY
  REVIEWS, 2(1), 1–12. <a href="https://injoser.joln.org/index.php/123/article/view/35">https://injoser.joln.org/index.php/123/article/view/35</a>
- 2. We recommend adding this theory to support the number of documents you find.
  - Rogers, G., Szomszor, M. & Adams, J. (2020). Sample size in bibliometric analysis.
     Scientometrics, 125(1), 777-794. https://doi.org/10.1007/s11192-020-03647-7
  - Donthu, N., Kumar, S., Mukherjee, D., Pandey, N. & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. Journal of Business Research, 133, 285-296. https://doi.org/10.1016/j.jbusres.2021.04.070

I have added it on page 6 as follows:

"The subsequent screening process involved evaluating the remaining documents to determine their eligibility based on predefined inclusion and exclusion criteria. According to Rogers et al. (2020), a sample size of at least 1000 papers can provide a reliable estimate of citation performance across institutions. Donthu et al. (2021) asserted that a larger sample size helps achieve more accurate and stable results in bibliometric analysis, thus ensuring the reliability of the conclusions drawn from this study.

Based on these arguments, I decided to use an appropriate sample size for this study. A total of 569 documents were excluded by restricting the subject area to the social sciences, arts, humanities, psychology, and multidisciplinary studies. In addition, 239 documents were excluded by restricting the document type to articles, book chapters, or conference papers, and 11 documents were excluded by selecting only the finalized publications. Furthermore, 40 documents were excluded based on specific keyword criteria, such as Christian, Jewish, Hindu, Buddhist and Catholic. In contrast, 89 English-only articles were included. After rigorous screening process, 1060 studies were deemed eligible and included in the subsequent bibliometric analysis, as shown in Figure 1."

Reviewer #4: The paper addresses a very interesting topic. It uses innovative research methods. The data is extensive and the results are good. However, the paper is too descriptive and does not extract more intelligence from the data. I understand that the findings are substantial enough for the paper to be accepted for publication as is. My other concern is the excessive use of ChatGPT, especially in the discussion section. If you would please paraphrase some of the text to make it sound more human, that would be great.

1. However, the paper is too descriptive and does not extract more intelligence from the data.

I have revised several aspects to make it more meaningful, firstly that there is no single definition of digital Islam, instead through this description I try to strengthen and look for more comprehensive characteristics related to digital Islam so that I can conclude that digital Islam corresponds to the characteristics that I described on pages 34-35. I think this long description is necessary because it is to get a comprehensive overview and strong arguments so that the characteristics I mentioned have a basis. Here are the results:

#### The following aspects form the definition of Digital Islam:

- 1. Digital-Religious Interaction: Digital Islam is defined as the interaction between digital tools and Islamic religious activities, for instance, reading, worshiping, or even preaching. This also comprises reading the Quran through applications, discussing religion on Internet forums, and using social platforms to spread Islamic knowledge.
- 2. Online Religious Authority and Identity: The increase in online scholars and preachers is just a symptom of the change of religious authority from traditional to digital. These figures can influence religious thought widely, thereby exerting an immense religious authority without any geographical boundaries, hence changing the power dynamics within the Islamic community.
- 3. Virtual Community (Cyber Ummah): This concept of Cyber Ummah, or Virtual Ummah, brings out the issue of emerging Muslim identities and communities in cyberspace. Spanning across nations and cultures, it creates new settings for interchange and discourse among various groups within nations that constitute Muslims.

- 4. Technology and its Effects on the Practice and Interpreting of Religious Activities: The role of technology is not only to support religious practice, but it can also challenge the traditionalist's interpretation and open windows for new ones. Social media can be used to discuss religious issues that can influence recent norms and views.
- 5. Response to Social and Cultural Issues: Digital Islam also summarizes the response of the Muslim community to social and cultural issues inside digital media. This may comprise online campaigns against Islamophobia or details of how Muslims are integrated into non-Muslim societies. Moreover, it facilitates online dialogues for tolerance and understanding.

Regarding the overly descriptive nature of my explanation, especially in the **THEORETICAL FRAMEWORK SECTION**, I disagree, because I have made a mind map, which was derived from reading books by each expert, which I then analyzed and arranged in a mind map of the main thoughts. The explanation below the mind map is the result of elaboration, not just description.

My other concern is the excessive use of ChatGPT, especially in the discussion section. If you would please paraphrase some of the text to make it sound more human, that would be great.

Furthermore, I have drafted especially the discussion section to humanize it and not seem entirely ChatGPT, but there are some paragraphs that I need to keep because the grammar is good and revising them will redefine the meaning. I highlighted in yellow all the revisions in my paper.

# Exploring the Intersection of Islam and Digital Technology: A Bibliometric Analysis

This study aims to identify key developments and trends in digital Islamic studies, including influential authors and their contributions, patterns of collaboration, and the evolution of themes in the literature of the 1060 Scopus database from to 1969-2024. This study also examines the representation of women and the main theoretical frameworks in the field. Biblioshiny, R-Studio, VOSViewer, and N-Vivo were used for bibliometric and sentiment analyses. This study found that academic attention to Islam and digital technologies has increased since the early 2000s with a shift towards online platforms for religious expression and community building. The study also examines the role of key authors, such as Norah Abokhodair, Sarah Vieweg, Marcia C. Inhorn, Eva F. Nisa, Giulia Evolvi, Morgan Clarke, Patrick Eisenlohr and Emma Baulch. The analysis of trends in the digital Islamic literature shows an increasing integration of digital technologies in Islamic practice from 2008 to 2021, with a focus on social media and mobile applications for religious education and engagement. Since 2021, Instagram has become an important space for the expression and discussion of Islamic identity. The research examines digital Islam as a major area of digital religion, exploring the role of the 'digital Muslim' in the 'digital Ummah.' This study reveals how digital Islam blends conventional and modern techniques, employs a cross-disciplinary theoretical approach, and significantly includes women. These findings demonstrate that women are more visible in highly cited studies.

Keywowds: Islam, digital religion, digital Islam, bibliometric analysis, women in digital Islam

#### Introduction

The significance of digital Islam in Muslim societies is rapidly growing as digital technologies become more prevalent. It is imperative to understand how Islam adapts and is represented in this new medium. Fortunately, despite a lack of consensus on the definition of "digital Islam," it is clear that it represents a unique manifestation of Islam in the digital context, with new identities, practices, and emerging communities (Campbell, 2012; el-Nawawy & Khamis, 2010; Zaid et al., 2022). Some view it as the use of digital tools to practice Islam (Al-Farizi et al., 2022; Arifin et al., 2022; Mustafa et al., 2020), whereas others argue that it extends it (al-Mutairi, 2022; el-Nawawy & Khamis, 2010; Lengauer, 2018; Olson, 2017).

According to Gary R. Bunt (2009), the term "digital Islam," lacks a single clear definition and admits that it is unable to provide a precise explanation. Bunt acknowledges that the term can have varied interpretations, depending on an individual's perspective. He noted that there is no universally accepted definition of the term.

"It depends in part on one defines Islam, and whether elements within that definitionhave a digital edge. Digital Islam may be explicitly online, on a website, blog, YouTube Video, or, more recently, an entry on Twitter. It may be explicitly 'religious' in orientation, relating to specific practices and concepts associated with core Islamic values and precepts. However, the articulation of digital Islam may also relate to specific cultural and political causes, which may be implicitly 'Islamic' in orientation".

Gary Bunt's (2009) approach categorizes digital Islam into different aspects based on how it integrates with Islamic practices. These aspects include using digital platforms to disseminate religious teachings and information, utilizing social media and online forums for discussions related to Islam, and employing mobile applications for religious activities, such as prayer times and Quran recitation.

Additionally, digital Islam is seen as a means of activism, in which digital platforms are utilized for political or social issues from an Islamic perspective. Finally, digital Islam in culture is classified as the integration of Islamic elements into the digital media. Bunt's approach demonstrates the adaptability of digital Islam to technology and its impact on the daily lives of Muslims worldwide, presenting opportunities for further investigation into the intersection of religion and technology (Bunt, 2009). Therefore, a strong theoretical foundation in digital Islamic studies is crucial for a deeper understanding of the implications of digital tools and platforms on Islamic practices and beliefs. Campbell (2017) and Chaudhary (2020) have addressed this issue by highlighting the importance of a theoretical approach to studying digital Islam and the significance of digital ethics in Islam. Both contributions emphasize the need for a blend of theoretical rigor and practical flexibility in the study of digital Islam, and the importance of ongoing research and dialogue in understanding digital transformation in Islam.

Another term related to the concept of digital Islam, also known as digital Muslims or digital Ummah, refers to individuals who actively use digital platforms and technology to express and practice their faith, connect with other Muslims globally, and engage in religious activities (Spalek & Imtoual, 2007). It is becoming increasingly common because of increasing digital literacy among Muslims, especially the younger generation, who use digital devices to strengthen their Islamic identity, access religious content, and participate in online religious discussions (Akmaliah & Burhani, 2021). The concept of e-Ummah, or virtual Ummah, has also emerged, where Muslims gather online to build a sense of brotherhood and unity (Jamil et al., 2020). The Internet also gives young Muslims the option to join digital communities, where they can interact through thoughts, attitudes, and discussions, rather than limited by geographical location or social and family ties (Kirmayer et al. 2013).

A variety of research on digital Islam has arisen from the lack of a single definition of this concept. The investigation of Islam and the Internet commenced in the late 1990s as academics-initiated research on how religious individuals and organizations employed the Internet to disseminate religious content and messages (Eickelman, 2003; Ibahrine, 2020). Scholars argue that the advent of digital media in the Arab and Islamic realms could facilitate religious authorities to propagate their standardized and unaltered perspectives (Sisler, 2011). On the other hand, others contend that these ideas appear ineffective and oversimplified because of digital media's minimal influence on the culture of Arab and Islamic realms (el-Nawawy & Khamis, 2010). Additionally, the digitalization of Islam is viewed as a test of the conventional understanding of Muslim identity (Ibahrine, 2014; Martin, 2004).

Research indicates that new media and digital technology impact religious hierarchies, challenge established societal structures, and offer a platform for religious groups that were previously underrepresented (Bunt, 2018; Ibahrine, 2020). The construction of Islam as a social and cultural entity continues to evolve in response to societal advancements and technological innovations (Sorgenfrei, 2021).

Studies in Muslim societies have investigated the relationship between Islam and digital technology, focusing on topics such as religiosity and consumer attitudes (Souiden & Rani, 2015), Islamic education among youth (Alkouatli et al., 2023), media representation and Islamophobia (Saeed, 2007), the impact of Muslim communities on Islamophobia (Bowe & Makki, 2016), the emergence of hybrid Muslim identities in the digital realm (Evolvi, 2017), and women's empowerment in the Islamic context (Gökhan, 2019; Nisa, 2021). These findings demonstrate the intricate interplay among technology, culture, digital Islam, and societal norms.

When discussing digital Islam, several key aspects have yet to be fully explored. One of these is the lack of a single agreed-upon definition of digital Islam, which has led to a range of methodologies,

approaches, and theories being employed to study this phenomenon. This diversity can be difficult for those unfamiliar with the issue to comprehend, particularly the Muslim community itself, which is the focus of the discussion. Another important factor to consider is the relationship between Islam and digital platforms, which can shed light on the cultural shifts that occur in society. It is worth noting that the impact of digital technology on religious behavior may be more pronounced in conservative and traditional environments than in more inclusive and open environments (Ibahrine, 2020).

As research in this field continues to advance, bibliometric analysis is a useful method for studying the discourse of adaptation and representation of Islam in the digital realm. This method helps to identify research gaps, trends, and the state of the art, which can be valuable for developing scholarly projects (José De Oliveira et al., 2019). By analyzing the most influential authors, literature, and publishers, as well as the thematic evolution in the field of Digital Islam, this method enables a comprehensive assessment of research related to digital Islam. Additionally, it provides a theoretical framework for future research. This study is important for understanding the complex relationship between digital technology, Islam, and religious identity, and can inform the development of inclusive policies and practices for the global Muslim community by incorporating research questions about the representation of women in digital Islamic works.

Research on "digital Islam" does not explicitly use this term, but rather focuses on related themes such as religious moderation, Islamic and media studies, terrorism issues, Islamic communication, and da'wah. Hashmi et al. (2021) conducted a systematic review and thematic analysis using data from the Scopus and Web of Science databases to examine representations of Islam on social media. Their findings revealed a wide range of portrayals of Islam, from liberal to extremist views, with most empirical studies showing largely negative portrayals. Similarly, Prahesti (2022) employed bibliometric analysis with Google Scholar using tools such as Publish and Perish and VOSviewer to explore religious moderation. The study identified significant growth in articles on the topic between 2020 and 2022, indicating growing interest.

Mustofa and Mustofa (2023) focused on Islam and media studies and used bibliometric analysis with Scopus and Biblioshiny data. Their research successfully detected keyword trends and author/journal prominence, indicating a shift in research focus on issues of gender and authority in the context of Islam and the media. In the field of terrorism studies, Yumitro et al. (2023) examined the issue of terrorism in Indonesia through bibliometric analysis using data from Scopus and visualization with VOSviewer. They observed an upward trend in terrorism-related research, with Indonesia being the focal point owing to its unique demographic and geopolitical context.

In addition, Latuconsina (2023) conducted a systematic review of Islamic studies through bibliometric analysis using the R package "Bibliometrics" for data analysis and thematic analysis. This study mapped the evolution of Islamic studies from 1941 to 2022, showing the main topics, authors' contributions, and the most cited works over the decades. Izza (2023) also conducted an analysis of publication patterns and thematic clusters in Islamic communication and da'wah through scientometric analysis with VOSviewer and NVivo 12 Plus for bibliometric mapping and frequency analysis, this study focused on the media and communication methods used in da'wah activities in the digital era.

Wildman (2022) conducted a bibliometric analysis focusing on social scientific publications within the North American Association for the Study of Religion (NAASR). The study utilized bibliometric methods to explore scholarly communication dynamics and highlighted the benefits of online academic conferences in broadening the audience reach. Wildman discussed the use of computational modeling and simulations by Schults to examine religious phenomena and Miller's framework of "queer

democracy" to historicize Christian nationalist politics. However, this study's limitation lies in its narrow focus on NAASR publications, which may not fully capture the global scope of religious studies.

Bukhari et al. (2023) used VOS Viewer to map research on the impact of digital media on the conventional da'wah in Padang City. A qualitative phenomenological study found that digital media significantly influences people's behavior more than traditional da'wah messages. Conventional preachers who lack digital skills face challenges in message transmission, emphasizing the need for digital competencies. The study's limitation is its focus on a single city, which potentially does not represent broader trends. Judijanto et al. (2024) conducted a systematic literature review to examine digital freedom and Islamic ethics. They highlighted that while digital freedom allows unrestricted information access, it presents challenges, such as privacy concerns and cybersecurity threats. The study emphasized the adaptability of Islamic ethics in addressing these issues, but noted limitations due to interpretative variations and the fast-evolving nature of technology.

These studies collectively provide an understanding of how Islam interacts with technology and media, and diverse themes and methodologies have been used to explore this relationship. The results demonstrate the complex and multifaceted nature of digital Islam, revealing a broad spectrum of issues and opportunities at the intersection of religion and technology.

Studies using bibliometric methods and systematic literature reviews have made significant contributions to our understanding of how Islam is interpreted, practiced, and discussed in the digital realm. Research has revealed a wide range of portrayals of Islam on social media, often highlighting negative narratives and public perception. Studies on new media have traced the evolution of the relationship between Islam and technology, identifying shifts in focus towards issues such as gender and authority. Additionally, research has explored the impact of digital media on conventional da'wah and examined digital freedom and Islamic ethical perspectives, emphasizing the need for digital competencies and the adaptability of Islamic ethics to address challenges such as privacy concerns and cybersecurity threats.

However, despite these contributions, there remains a significant gap in the literature: there is still no comprehensive definition or theoretical framework for "Digital Islam." Existing research tends to focus on practical applications, specific cases, and thematic analyses rather than developing a broader, cohesive framework. This lack of a comprehensive theoretical foundation limits our ability to fully understand and contextualize the diverse phenomena observed in digital Islamic practices. Therefore, further research is needed to provide a more comprehensive understanding and theoretical foundation that can inform future research, policies, and practices in digital Islamic space.. Based on these objectives, the research questions of this study were as follows:

RQ1: How does a performance analysis of the 'digital Islamic literature reveal key developments and trends in this field?

RQ2: Who are the influential authors in the 'digital Islam' literature and what are their main contributions? Why have they become influential?

RQ3: How do patterns of collaboration between Islamic-majority countries affect the output and impact of 'digital Islamic research?

RQ4: How does bibliometric analysis reveal the thematic evolution of the 'digital Islam' literature and what are the major themes that have evolved over time?

RQ5: How does sentiment anysis in ' the literature reveal perceptions and attitudes towards digital technology in an Islamic context?

RQ6: What is the involvement and representation of women as the main authors in the 'digital Islam' literature, and what are the main articles that address gender issues?

RQ7: What are the main theoretical frameworks used in the study of digital Islam, and how do they help understand the interaction between Islam and digital technology?

In this study, I conducted a comprehensive analysis of the digital Islamic literature using bibliometric techniques. I began by analyzing publication rates, citations, and influential journals using Biblioshiny software in R-Studio and VOSViewer, which helped me identify key trends and developments in the field. I also used co-citation analysis and author collaboration networks to determine the impact of influential authors in the field and evaluate their h-index and total number of citations. Additionally, I used keyword co-occurrence analysis and thematic evolution maps to examine the thematic evolution of digital Islamic literature, providing a comprehensive understanding of the research focus and evolving interests in specific topics. Sentiment analysis using N-Vivo allowed us to assess the perceptions and attitudes of communities towards the integration of technology in religious practices. I also analyzed the representation and participation of women as lead authors in the literature on digital Islam and in the literature addressing gender issues. I used author gender and network analyses to explore the collaboration and influence of female authors, providing insights into the role of women in the field. This study delves into digital Islam's main theoretical framework by examining the mostcited documents and references globally. Identifying the most influential frameworks offers insights into how they shape our understanding of Islam and digital technology. My research combines theoretical rigor and empirical analysis to enhance the literature on Digital Islam, offering a comprehensive perspective of technology, religion, and society.

This study introduces two unique aspects of bibliometric analyses: sentiment analysis of 'digital Islam''s literature, and women's participation and representation in this field. By conducting sentiment analysis, this study uncovers the diverse perceptions and attitudes of Muslims towards digital technologies, providing significant insights into the integration of these technologies into religious practices and daily life. Understanding the interplay between digital Islam and technology is therefore crucial. Moreover, the research on women's participation and representation sheds light on the prominent role women play as primary authors and research subjects in 'digital Islam' literature. This challenges existing assumptions and underscores the importance of gender in this area of research. By emphasizing these aspects, this study contributes to the academic discourse on 'digital Islam' and promotes inclusivity and gender awareness. It also establishes a foundation for future research investigating the relationship between technology, digital Islam, and gender.

#### Research Design

In this study, I used the Biblioshiny software in R-Studio to conduct a bibliometric analysis and map key developments, trends, and dynamics in the field of Digital Islam literature (Aria & Cuccurullo, 2017). Bibliometrix is a open-source tool that enables comprehensive science mapping analysis and supports a recommended workflow. In addition, the VOSViewer was used in this study. This software emphasizes the visual representation of bibliometric maps (Van Eck and Waltman, 2010). Furthermore, N-Vivo was employed for sentiment analysis of digital Islamic literature. N-Vivo's sentiment analysis tool is suitable for this task because it can autocode unlabeled and unstructured text corpora against a built-in sentiment dictionary, as shown in an experiment on the IMDB dataset, where it achieved an accuracy of 87.63% (Dewi et al., 2023). Therefore, using N-Vivo for sentiment analysis in this study was the most appropriate choice.

To examine the relationship between Islamic and Muslim societies and the digital realm, a comprehensive search strategy was executed using the Scopus database (Donthu et al., 2021). The

use of Scopus was justified by its extensive collection of over 90 million documents, which represent Islamic perspectives in the literature (Elsevier Scopus blog, 2023). In addition, its user-friendly search interface and offline analysis capabilities using CSV files enable in-depth searches and analyses (Baas et al., 2020; Zainuddin, 2015). Scopus is a multidisciplinary database suitable for searching scholarly articles on a range of topics including Islam and digital media (AlRyalat et al., 2019). Therefore, Scopus' extensive database coverage, analysis features, and global reach make it an ideal choice for searching the literature related to Islam and digital media. A search string was then used TITLE-ABS-KEY (islam OR "Muslim societies" AND "digital world" OR "digital age" OR technology OR "social media" OR internet OR "online community" OR "cyber space" OR "digital culture" OR "virtual community" OR "online engagement" OR "digital engagement" OR "social networking" OR "online education" OR "elearning" OR "virtual learning" OR "digital platforms" OR "online platforms").

In this study, the initial step involved identifying pertinent records from the Scopus database, resulting in the successful identification of 2026 documents based on the STRING Criteria. Following identification, the next step entailed the removal of records prior to screening. This process led to the removal of 13 documents due to duplicates, 2 documents due to incomplete content, and 3 documents due to incomplete author information, resulting in a total of 2008 documents remaining for the subsequent screening process.

The subsequent screening process involved evaluating the remaining documents to determine their eligibility based on predefined inclusion and exclusion criteria. According to Rogers et al. (2020), a sample size of at least 1000 papers can provide a reliable estimate of citation performance across institutions. Donthu et al. (2021) asserted that a larger sample size helps achieve more accurate and stable results in bibliometric analysis, thus ensuring the reliability of the conclusions drawn from this study.

Based on these arguments, I decided to use an appropriate sample size for this study. A total of 569 documents were excluded by restricting the subject area to the social sciences, arts, humanities, psychology, and multidisciplinary studies. In addition, 239 documents were excluded by restricting the document type to articles, book chapters, or conference papers, and 11 documents were excluded by selecting only the finalized publications. Furthermore, 40 documents were excluded based on specific keyword criteria, such as Christian, Jewish, Hindu, Buddhist and Catholic. In contrast, 89 English-only articles were included. After rigorous screening process, 1060 studies were deemed eligible and included in the subsequent bibliometric analysis, as shown in Figure 1.

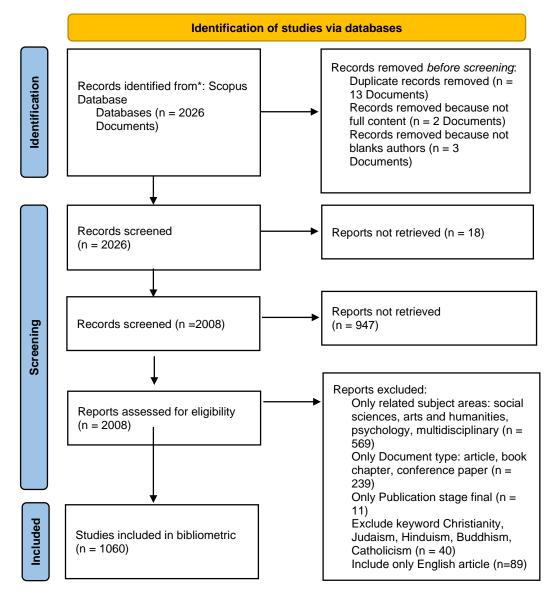


Figure 1. PRISMA Flow Diagram

The retained dataset of 1,060 documents forms the basis for bibliometric analysis, allowing for a detailed examination of publication trends, authorship patterns, thematic concentrations, and citation networks within the literature on Islam and digital engagement. This methodological approach not only highlights the breadth and depth of research in this emerging field but also provides a foundation for identifying gaps in the literature, understanding the evolution of key themes over time, and suggesting avenues for future research. Through this bibliometric analysis, this study provides a structured overview of how digital technologies intersect with Islamic practices and their broader implications for Muslim societies globally, as shown in Table 2.

Table 1. Digital Islamic Literature From Scopus (1969-2024)

Description	Results
Timespan	1969:2024
Sources (Journals, Books, etc)	656
Documents	1060

Annual Growth Rate %	4.77
Document Average Age	7.68
Average citations per doc	8.541
References	42523
DOCUMENT CONTENTS	
Keywords Plus (ID)	1442
Author's Keywords (DE)	2941
AUTHORS	
Authors	1790
Authors of single-authored docs	546
AUTHORS COLLABORATION	
Single-authored docs	622
Co-Authors per Doc	1.86
International co-authorships %	10
DOCUMENT TYPES	
article	731
book chapter	173
conference paper	89
review	67

Following the completion of the bibliometric analysis, the research design incorporated the use of N-Vivo, a qualitative data analysis software, to conduct a sentiment analysis on the same set of 1,060 documents. This phase specifically aims to understand the intricacies of the discourse in the literature. By utilizing sentiment analysis, this study seeks to uncover prevailing attitudes and perceptions regarding the integration of digital technologies in Islamic practices and Muslim societies. The sentiment analysis conducted in N-Vivo involves coding textual data from documents, identifying positive, negative, and neutral sentiments, and analyzing the context in which digital Islam is discussed. Following the bibliometric analysis, the research design incorporated the use of N-Vivo, a qualitative data analysis software, to conduct sentiment analysis on the same set of 1,060 documents. This phase particularly focuses on understanding the nuances of discourse in the literature. By applying sentiment analysis, this study aims to uncover the prevailing attitudes and perceptions regarding the integration of digital technologies in Islamic practices and Muslim societies. Sentiment analysis in N-Vivo involves coding textual data from documents, identifying positive, negative, and neutral sentiments, and analyzing the context in which digital Islam is discussed.

#### **Result and Discussion**

This study presents a comprehensive bibliometric framework for analyzing Digital Islam literature. Using Biblioshiny in R-Studio (Moral-Muñoz et al., 2020), we mapped growth dynamics, identified influential authors, analyzed international collaborations, outlined thematic evolution, explored sentiments towards digital technologies in the Islamic context, assessed the role of women, and identified theoretical frameworks for digital Islamic studies.

#### RQ1: *Growth and trends in digital islam literature*

The analysis starts by presenting the growth trend of Digital Islam literature since its inception. Based on publication and citation data, we identified time periods with significant surges in research, highlighting the topics and issues that dominate academic discourse. A performance analysis of the 'Digital Islam' literature was conducted to identify key developments and trends in the field. This included analyzing publications per year, citations, and the most prolific journals. The analysis highlighted how this literature is evolving and which areas are receiving the most attention.

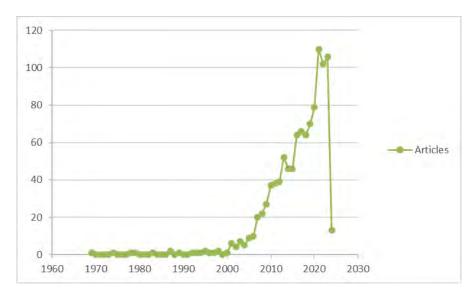


Figure 2. Annual Scientific Production for Digital Islamic Literature

<u>Figure 2</u> shows a significant and consistent increase in the number of publications on Islamic digital literature from 1969 to 2024. The number of publications per year grew slowly at first but then increased rapidly and significantly in the early 2000s. This surge in publications can be attributed to the growing interest in and recognition of the significance of research in digital Islam, particularly in the past two decades. The period between 2007 and 2024 is marked by significant annual growth in research activity. This era is considered pivotal in the development of Islamic digital literature, signifying a heightened focus on exploring and advancing this field. The data reveal the increasing importance placed on digital Islam and progress made in this area.

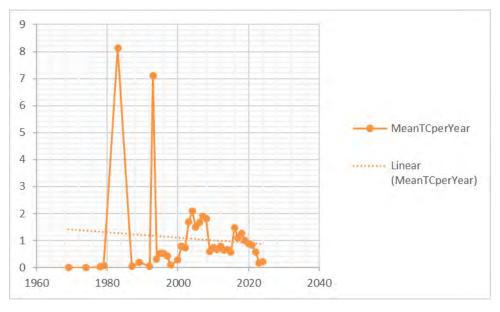


Figure 3. Average citations per year for digital Islam literature

<u>Figure 3</u> shows an analysis of the average citations per year for digital Islamic literature, revealing fluctuations in research recognition and impact over time. Initially, there was a lack of impact from the late 1960s to the early 1980s, with almost no citations per year. However, in 1983, there was a significant increase in the average citations, indicating the importance of research in the field. Since the 2000s, there has been a consistent upward trend in the average citations, albeit with some fluctuations. The years 2003 and 2004 were notable for having a higher average number of citations,

indicating increased recognition of research in Islamic digital literature. The average number of citations stabilized at a lower but still significant level, with another peak in 2016. However, from 2019 to 2024, there was a decline in the average number of citations per year, which may be due to a time lag in citation collection or an increase in less-cited publications. This analysis offers insights into the evolving dynamics of citations over time and academic recognition of Islamic digital research on a global scale.

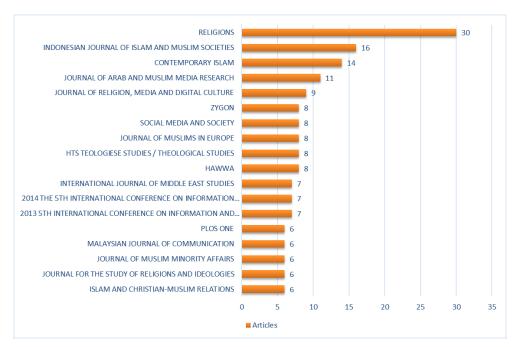


Figure 4. Most productive journals in Digital Islam literature

Figure 4 highlights that the journal 'Religions' is the most prolific, with 30 articles, followed by the 'Indonesian Journal of Islam and Muslim Societies' and 'Contemporary Islam.' The 'Journal of Arab and Muslim Media Research' and the 'Journal of Religion, Media, and Digital Culture' were also significant contributors. Furthermore, the '2013 5th International Conference on Information and Communication Technology for the Muslim World (ICT4M 2013)' and its 2014 edition contributed to the field. The analysis of publication trends from 1969 to 2024 reveals exponential growth in research output, particularly between 2007 and 2024, marking a new era of increased academic interest in digital Islamic studies. This growth was accompanied by fluctuations in citation recognition, with a noticeable increase since the early 2000s. This paper underscores the diverse platforms supporting digital Islamic research and advocates for enhanced strategies to boost the visibility and impact of these studies.

# RQ2: Influential sources and authors in digital islam literature

This includes an evaluation of their h-index and total number of citations to demonstrate their influence and contribution to the field. This study aimed to understand the basis of their influence, including the quality and impact of their research.



Figure 5. Top Authors and Sources in Digital Islam literature by VOSViewer

Table 2. Top Authors and Sources in Digital Islam literature by Biblioshiny

Author	TI	TC	ТСрҮ
ABOKHODAIR N	6	233	27.24722
INHORN MC	6	496	26.24528
NISA EF	5	148	19.88095
EVOLVI G	6	86	12.91667
CLARKE M	5	153	9.271335
EISENLOHR P	5	137	9.023647
BAULCH E	3	60	8.571429
AL-RAWI A	4	54	5.790909
LARSSON G	5	60	4.944444
ECHCHAIBI N	3	70	4.845238
AL-ZAMAN MS	3	11	3.666667
HASHMI UM	4	13	3.333333
SHABANA A	5	33	3.3
EDIS T	4	37	2.871591
ABDEL-FADIL M	3	12	2.309524
MAHMUD M	5	23	1.924242
HASHIM R	4	13	1.287879
BUNT GR	3	7	0.564103
HANEEF SSS	3	1	0.090909

<u>Figure 5</u> and <u>Table 3</u> provide an analysis of influential authors in the field of Islamic digital literature and their contributions, based on citation metrics derived from VOSviewer and Biblioshiny. This study identified seven authors. Norah Abokhodair emerges as a leading figure with 233 citations across six documents and 27 citations per year, whereas Inhorn MC, with six documents, amasses 496 citations and 26 citations per year, highlighting its significant impact. Eva F. Nisa and Evolvi G, Clarke M, Eisenlohr P, and Baulch E are also noted for their substantial citation counts, indicating their important contributions to the field.

# RQ3: Collaboration patterns in islamic-majority countries

A network analysis of collaborations between countries demonstrates the global reach of digital Islamic research. This study evaluates the intensity and characteristics of collaborations, and identifies patterns that indicate scholarly exchange and joint contributions to global knowledge.

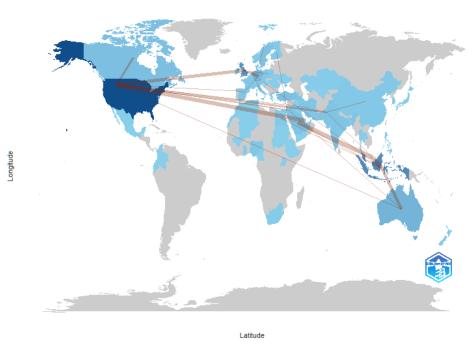


Figure 6. Digital Islam literature collaboration world map

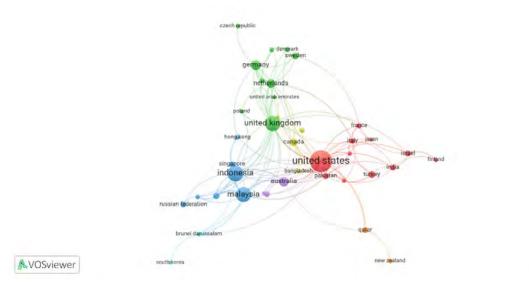


Figure 7. Digital Islam literature co-authorship by Country

In this analysis, I also present the ten countries with the highest number of collaborations in digital Islamic literature research, as well as the ten pairs of countries with the most frequent collaborations.

Table 3. 10 Most Collaborated Countries

Country	Total Collaborations
United States	44
United Kingdom	35

Malaysia	28	
Indonesia	26	
Australia	18	
Netherlands	18	
Saudi Arabia	17	
Germany	16	
Pakistan	14	
Italy	12	

Table 4. 10 Countries' Most Collaborated Couples

Country 1	Country 2	Collaborations	
Indonesia	Malaysia	7	
Malaysia	Saudi Arabia	7	
United Kingdom	United States	7	
Germany	Netherlands	6	
Qatar	United States	5	
Australia	Indonesia	4	
Netherlands	United Kingdom	4	
Australia	Malaysia	3	
Australia	United States	3	
Canada	United States	3	

The analysis of international collaboration networks in the field of digital Islamic literature, as depicted in Figure 6 and 7 and Tables 4 and 5, reveals significant patterns and relationships among the countries. The analysis of international collaboration in the digital Islamic literature identifies key patterns and relationships among countries, highlighting the central roles of the United States and the United Kingdom as academic hubs. Malaysia and Indonesia also emerged as significant contributors, with these countries demonstrating a high level of participation and strong bilateral collaboration, especially between Indonesia and Malaysia. The study showcases the global nature of research collaboration, with notable connections such as Malaysia-Saudi Arabia and UK-US each recording seven collaborations, and a notable trans-European link between Germany and the Netherlands. This underscores the importance of international cooperation to enhance the understanding of Islam in the digital era, reflecting a complex, interconnected global network of knowledge exchange.

Table 5 shows the analyses of intercountry collaborations in Digital Islam research, focusing on how countries with varied interests and capacities collaborate to understand and apply digital technologies in Islamic contexts. It highlights significant partnerships, such as between Indonesia and Malaysia and Malaysia and Saudi Arabia, which reflect shared cultural and religious backgrounds and the integration of technology with Islamic values. Additionally, collaborations between Western and Muslim-majority countries, such as the US, UK, Qatar, and Germany, underscore the importance of cross-cultural research in this field. The findings emphasize that international cooperation is crucial for a comprehensive understanding of Digital Islam, covering the technological, social, and religious dimensions. Such collaborations facilitate enriched dialogue and innovation within Muslim communities globally, showcasing the global relevance and interdisciplinary nature of digital Islamic research.

# RQ4: Thematic evolution in digital islam literature

Using keyword co-occurrence and thematic evolution mapping techniques, we explored how the research focus has shifted and evolved. These findings offer insights into research dynamics, highlighting new areas and emerging topics in academic dialogue.

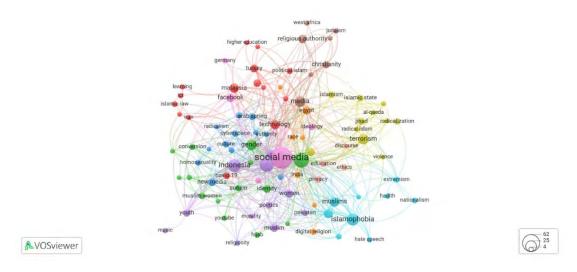


Figure 8. Digital Islam Vos Viewer Co-Occurence Analysis

<u>Figure 8</u> presents a comprehensive analysis of ten thematic clusters identified through specific keywords, each exploring various facets of contemporary societal issues through the lens of digital media, religious identity, and socio-political dynamics.

The first cluster delves into the role of digital platforms, such as Facebook and YouTube, in shaping cultural and religious identities, emphasizing the negotiation of gender politics and social activism within diverse cultural landscapes. This finding highlights the impact of digital media on contemporary discourse and identity formation.

The second cluster examines the interaction between Islamic traditions and modern challenges, such as globalization and the COVID-19 pandemic, focusing on the implications for education, technology, and societal change. This underscores Islamic societies' adaptation to technological advancements and global dynamics.

In the third cluster, the focus shifted to the Middle East, exploring sociopolitical and cultural transformations after the Arab Spring. The role of new media in influencing political activism, religious identity, and cultural values is analyzed, offering insights into the complexities of governance and freedom of expression in the region.

The fourth cluster addresses terrorism, radicalization, and extremism within the context of Islamism, highlighting the influence of jihadist movements and propaganda on global security. It provides a critical view of the sociopolitical challenges posed by radical ideologies.

The fifth cluster explores the intersections of digital culture, activism, and identity politics, particularly the role of social media in advocating for social justice issues, such as Islamophobia and racism. This illustrates how digital platforms facilitate activism and discussions of discrimination.

The sixth cluster looks at Pakistan, focusing on the interplay between digital media, education, ethics, and sociopolitical dynamics concerning Islam, nationalism, and gender. The significance of religious discourse and educational initiatives in shaping societal norms has been emphasized.

The seventh cluster analyzes the religious and cultural dynamics of Christianity, Hinduism, and Judaism in West Africa, exploring the impact of the diaspora, media, and religious authority on community identities and practices.

The eighth cluster investigated the influence of religion, social media, and youth culture in Indonesia, highlighting the role of Instagram and music in shaping moral values and religious expressions among youth.

The ninth cluster considers geopolitical, cultural, and social dynamics in regions such as Egypt, India, and Nigeria, addressing broader themes such as orientalism, race, and secularism. It offers a critical examination of cultural representation and power dynamics.

Finally, the tenth cluster focuses on the intersection of bioethics and Islamic science, examining ethical considerations in scientific advancements guided by Islamic principles. This reflects an interdisciplinary field that merges scientific inquiry with ethical and religious reflections.

Overall, this study elucidates the intricate relationships between digital media, religious identity, and socio-political issues across different cultural and geographical contexts, providing a nuanced understanding of contemporary societal challenges and transformations.

Having identified the various themes in the ten clusters of Vos-Viewer. I then identified how these clusters were thematically interconnected.

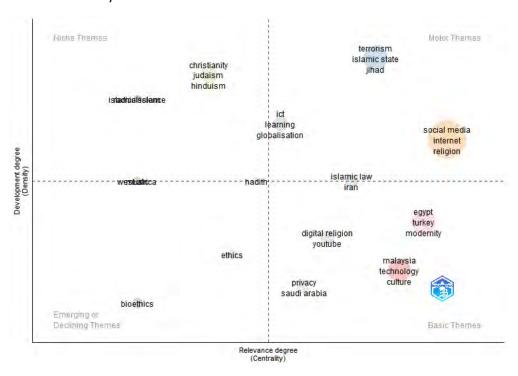


Figure 9. Digital Islam thematic Map analysis Biblioshiny

Figure 9 presents a thematic analysis focused on "Digital Islam," which encompasses the practice, interpretation, and communication of Islam within digital environments. The analysis utilized a thematic map to categorize research themes based on their relevance and level of development, employing axes to represent theme importance and density. Key themes were organized into quadrants, illustrating their relationships and significance. Central themes, identified as Motor Themes, include 'terrorism,' 'Islamic state,' and 'jihad,' highlighting their prominence in discussions about the digital impact on these subjects. Basic Themes, such as 'malaysia,' 'technology,' and 'culture,' though fundamental, are recognized as less explored areas. Emerging or Declining Themes like 'bioethics' and 'ethics' suggest new or waning interests, while Niche Themes mention religions like Christianity, Judaism, and Hinduism, indicating specialized but less connected topics. This analysis

helps pinpoint research priorities and potential gaps within the field of digital Islamic studies, suggesting areas for further investigation.

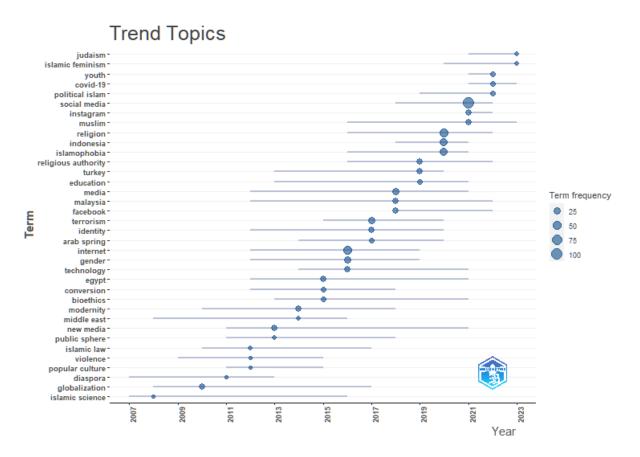


Figure 10. Digital Islam Topic Trends

Figure 10 shows the evolution of topics related to Digital Islam from 2008 to 2021, illustrating a shift towards integrating digital technology within Islamic discourse and practices. Initially, discussions focused on Islamic science and explored the relationship between religion and technology. By 2013, the emphasis had shifted towards the use of new media and communication technologies, such as social media and mobile applications, for education and religious engagement. The year 2016 marked notable interest in the impact of technology on Islamic practices, including the use of digital applications for religious observance and virtual reality for immersive religious experiences. The study highlights a significant trend towards digital platforms that enhance religious practice, accessibility, and community engagement within the Muslim community. By 2021, social media, particularly Instagram, has emerged as a vital space for expressing and debating Islamic identity, showcasing the growing importance of digital spaces for religious dialogue and community development.

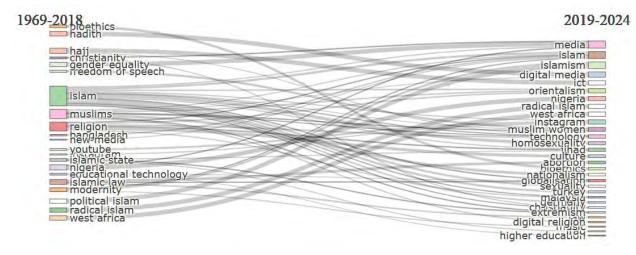


Figure 11. Thematic evolution in Digital Islam literature

Figure 11 illustrates the thematic evolution of Islamic studies from 1969 to 2024, highlighting the emergence of new themes such as digital media, ICT, Instagram, and technology. It notes an increased focus on gender and representation, particularly regarding Muslim women, alongside traditional themes such as hadith and Islamic law. The period also saw a rise in discussions on socio-political issues, such as Islamophobia, nationalism, and homosexuality, indicating a broader inclusion of social and political analysis within Islamic studies. The study underscores a shift towards integrating Islam with technology and contemporary debates, expanding the scope of discussion to include global issues such as globalization and radical Islam. This reflects a dynamic and expanding field of study that adapts to contemporary societal changes and technological advancements.

# RQ5: Sentiments analysis towards digital islam

We analyzed the sentiments of the authors of the articles using N-Vivo for a sentiment analysis. The discussions revealed both positive and negative nuances,

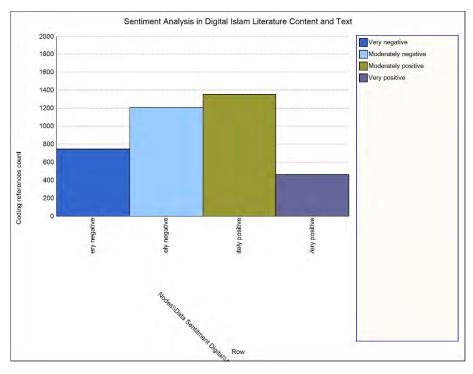


Figure 12. Sentiment Analysis in Digital Islam based on Text

When conducting sentiment analysis on articles using N-Vivo, it is important to note that the results obtained do not reflect the personal sentiments or viewpoints of the authors. The analysis focuses on extracting information and nuances regarding discussions on digital technology, regardless of whether they are positive or negative. The objective of this analysis is to identify themes, patterns, and nuances that emerge from the content, without making any assumptions about the author's attitude towards the subject. Therefore, when stating that 'the discussion reveals both positive and negative nuances, showing complex perceptions of digital technology,' it refers to the range of opinions and views presented in the articles rather than the authors' sentiments. This interpretation clarifies that sentiment analysis is a tool for extracting information and trends from text and that the results reflect the content being analyzed rather than the subjective perceptions of the authors.

Figure 12 presents a sentiment analysis focusing on the interaction between Islam and digital technology, analyzing 748 negative and 1359 positive sentiments from various entries. It reveals a complex and multifaceted discourse, with a dominant, moderately negative sentiment reflecting concerns and criticisms, alongside a significant presence of positive viewpoints that acknowledge the beneficial impact of digital technology on Islam. The analysis underscores the diverse perceptions within the discourse, highlighting both the challenges and opportunities of digital technologies present in contemporary Islamic practice and understanding. This suggests a nuanced landscape of views, balancing skepticism and optimism in the context of the role of digital technology in Islam.

# *RQ6: The role of women in digital islam literature*

This study investigates gender dynamics in the digital Islamic literature by focusing on the participation of female authors. It employs a two-stage methodology to analyze gender representation, beginning with the identification of 100 highly cited authors from a corpus of 1060 articles, leading to the recognition of 59 female authors based on citation frequency. The second stage zeroes in on the most prolific among these female authors, narrowing down to 18 individuals recognized for their significant contributions. This study meticulously examines the gender of authors and their distribution across publications, paying particular attention to the positions held by female authors in the authorship order, which serves as an indicator of their leadership and influence within the field. This approach sheds light on collaboration patterns and leadership roles, aiming to offer a comprehensive understanding of women's roles and contributions in the digital Islamic literature. Furthermore, it explores the broader discourse on gender issues within digital Islamic research, highlighting the acknowledgment and valuation of women's contributions in this scholarly domain.

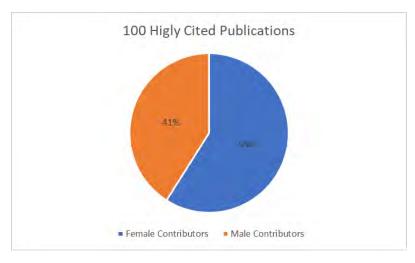


Figure 13. Women's representation in the top 100 most cited papers

Table 5. Top 59 Female Authors by Number of Citations

Authors Fe	emale Authors T		ear So	urce title	Cited by
Wersal L. (1995)	Wersal, Lisa	ISLAM AND ENVIRONMENTAL ETHICS: TRADITION RESPONDS TO CONTEMPORARY CHALLENGES	1995	Zygon®	31
Stowasser B. (2001)	Stowasser, Barbara	Old shaykhs, young women, and the internet: The rewriting of women's political rights in Islam	2001	Muslim World	21
Inhorn M.C. (2003)	Inhorn, Marcia C.	Global infertility and the globalization of new reproductive technologies: Illustrations from Egypt	2003	Social Science and Medicine	206
Mamadouh V. (2003)	Mamadouh, Virginie	11 September and popular geopolitics: A study of websites run for and by Dutch Morrocans Middle Eastern masculinities in	2003	Geopolitics	27
Inhorn M.C. (2004)	Inhorn, Marcia C.	the age of new reproductive technologies: Male infertility and stigma in Egypt and Lebanon	2004	Medical Anthropology Quarterly	136
Kosnick K. (2004)	Kosnick, Kira	'Speaking in one's own voice': Representational strategies of Alevi Turkish migrants on open- access television in Berlin	2004	Journal of Ethnic and Migration Studies	37
Fullwiley D. (2004)	Fullwiley, Duana	Discriminate biopower and everyday biopolitics: Views on sickle cell testing in Dakar The motivational bases of right-	2004	Medical Anthropology Cross Cultural Studies in Health and Illness	29
Cohrs J.C.; Moschner B.; Macs J.; Kielmann S. (Cohrs et al., 2005)	Moschner, Barbara	wing authoritarianism and social dominance orientation: Relations to values and attitudes in the aftermath of September 11, 2001	2005	Personality and Social Psychology Bulletin	187
Abdul Karim N.S.; Hazmi N.R. (2005)	Abdul Karim, Nor Shahriza; Hazmi, Norzelatun Rodhiah	Assessing Islamic information quality on the internet: A case of information about Hadith	2005	Malaysian Journal of Library and Informatio Science	n 27
Inhorn M.C. (2006)	Inhorn, Marcia C.	"He won't be my son": Middle Eastern Muslim men's discourses of adoption and gamete donation	2006	Medical Anthropology Quarterly	112
Schulz D.E. (2006)	Schulz, Dorothea E.	Promises of (im)mediate salvation: Islam, broadcast media, and the remaking of religious experience in Mali	2006	American Ethnologist	109
Newcomb R. (2006)	Newcomb, Rachel	Gendering the city, gendering the nation: Contesting urban space in Fes, Morocco	2006	City and Society	27
Toft M.D. (2007)	Toft, Monica Duffy	Getting religion? The puzzling case of Islam and civil war	2007	International Security	259
Hashim N.H.; Murphy J.; Hashim N.M. (Hashim et al., 2007)	Hashim, Noor Hazarina; Hashim, Nazlida Muhamad	Islam and online imagery on malaysian tourist destination websites	2007	Journal of Computer- Mediated Communication	73
Akou H.M. (2007)	Akou, Heather Marie	Building a new "world fashion": Islamic dress in the twenty-first century	2007	Fashion Theory - Journal of Dress Body and Culture	38
Raiya H.A.; Pargament K.; Mahoney A.; Stein	Mahoney, Annette; Stein, Catherine	A psychological measure of islamic religiousness:	2008	International Journal for the Psychology of Religion	212

C. (Abu Raiya et al., 2008)		Development and evidence for reliability and validity			
Ho S.S.; Lee W.; Hameed S.S. (Ho et al., 2008)	Ho, Shirley S.; Lee, Waipeng; Hameed, Shahiraa Sahul	Muslim surfers on the internet: Using the theory of planned behaviour to examine the factors influencing engagement in online religious activities	2008	New Media and Society	51
Wyche S.P.; Caine K.E.; Davison B.; Arteaga M.; Grinter R.E. (Wyche et al., 2008)	Wyche, Susan P.; Caine, Kelly E.; Grinter, Rebecca E.	Sun dial: Exploring technospiritual design through a mobile islamic call to prayer application	2008	Conference on Human Factors in Computing Systems - Proceedings	34
van Zoonen L.; Vis F.; Mihelj S.(Van Zoonen et al., 2010)	van Zoonen, Liesbet; Vis, Farida; Mihelj, Sabina	Performing citizenship on YouTube: Activism, satire and online debate around the anti-Islam video Fitna	2010	Critical Discourse Studies	104
Akou H.M. (Akou, 2010)	Akou, Heather Marie	Interpreting Islam through the Internet: Making sense of hijab	2010	Contemporary Islam	28
Piela A. (Piela, 2010)	Piela, Anna	Muslim women's online discussions of gender relations in Islam	2010	Journal of Muslim Minority Affairs	25
Bryant L.D.; Ahmed S.; Ahmed M.; Jafri H.; Raashid Y. (Bryant et al., 2011)	Ahmed, Shenaz	'All is done by Allah'. Understandings of Down syndrome and prenatal testing in Pakistan	2011	Social Science and Medicine	36
Clarke M.; Inhorn M.C. (Clarke & Inhorn, 2011)	Inhorn, Marcia C.	Mutuality and immediacy between marja and muqallid: Evidence from male in vitro fertilization patients in shii lebanon	2011	International Journal of Middle East Studies	25
Akhter W.; Abassi A.S.; Umar S. (Akhter et al., 2011)	Umar, Sadia	Ethical issues in advertising in pakistan: An islamic perspective	2011	World Applied Sciences Journal	23
Mihelj S.; van Zoonen L.; Vis F. (Mihelj et al., 2011)	Mihelj, Sabina; van Zoonen, Liesbet; Vis, Farida	Cosmopolitan communication online: YouTube responses to the anti-Islam film Fitna	2011	British Journal of Sociology	21
Fekete L. (Fekete, 2012)	Fekete, Liz	The muslim conspiracy theory and the oslo massacre	2012	Race and Class	62
Salamandra C. (Salamandra, 2012)	Salamandra, Christa	The Muhannad effect: Media panic, melodrama, and the Arab female gaze	2012	Anthropological Quarterly	32
Afrianty D. (Afrianty, 2012)	Afrianty, Dina	Islamic education and youth extremism in Indonesia	2012	Journal of Policing, Intelligence and Counter Terrorism	29
Halverson J.R.; Way A.K. (Halverson & Way, 2012)	Way, Amy K.	The curious case of Colleen LaRose: Social margins, new media, and online radicalization The Limits of Civil Society in	2012	Media, War and Conflict	23
Hamayotsu K. (Hamayotsu, 2013)	Hamayotsu, Kikue	Democratic Indonesia: Media Freedom and Religious	2013	Journal of Contemporary Asia	31
Nisa E.F. (Nisa, 2013)	Nisa, Eva F.	Intolerance The internet subculture of Indonesian face-veiled women	2013	International Journal of Cultural Studies 2013 5th International Conference on	30
Lubis M.; Kartiwi M. (Lubis & Kartiwi, 2013)	Kartiwi, Mira	Privacy and trust in the Islamic perspective: Implication of the digital age	2013	Information and Communication Technology for the Muslim World, ICT4M 2013	23
Sreberny A. (Sreberny, 2015)	Sreberny, Annabelle	Women's Digital Activism in a Changing Middle East	2015	International Journal of Middle East Studies	24

Lewis R. (Lewis, 2015)	Lewis, Reina	Uncovering modesty: Dejabis and dewigies expanding the parameters of the modest fashion blogosphere	2015	Fashion Theory - Journal of Dress Body and Culture	24
Abokhodair N.; Vieweg S. (Abokhodair & Vieweg, 2016)	Abokhodair, Norah; Vieweg, Sarah	Privacy & social media in the context of the Arab Gulf	2016	DIS 2016 - Proceedings of the 2016 ACM Conference on Designing Interactive Systems: Fuse	98
Johnson N.F.; Zheng M.; Vorobyeva Y.; Gabriel A.; Qi H.; Velasquez N.; Manrique P.; Johnson D.; Restrepo E.; Song C.; Wuchty S. (Johnson et al., 2016)	Vorobyeva, Y.	New online ecology of adversarial aggregates: ISIS and beyond	2016	Science	84
Afriana J.; Permanasari A.; Fitriani A. (Afriana et al., 2016)	Afriana, J.; Permanasari, A.; Fitriani, A.	Project based learning integrated to stem to enhance elementary school's students' scientific literacy	2016	Jurnal Pendidikan IPA Indonesia	70
Magdy W.; Darwish K.; Abokhodair N.; Rahimi A.; Baldwin T. (Magdy et al., 2016)	Abokhodair, Norah	#ISISisNotIslam or #DeportAllMuslims? Predicting unspoken views	2016	WebSci 2016 - Proceedings of the 2016 ACM Web Science Conference	49
Aguilera-Carnerero C.; Azeez A.H. (Aguilera-Carnerero & Azeez, 2016)	Aguilera- Carnerero, Carmen	Islamonausea, not islamophobia: The many faces of cyber hate speech	2016	Journal of Arab and Muslim Media Research	34
Abokhodair N.; Abbar S.; Vieweg S.; Mejova Y. (Abokhodair et al., 2016)	Abokhodair, Norah; Abbar, Sofiane; Vieweg, Sarah; Mejova, Yelena	Privacy and twitter in Qatar: Traditional values in the digital world	2016	WebSci 2016 - Proceedings of the 2016 ACM Web Science Conference	26
Benigni M.C.; Joseph K.; Carley K.M. (Benigni et al., 2017)	Carley, Kathleen M.	Online extremism and the communities that sustain it: Detecting the ISIS supporting community on Twitter Digital Islamophobia: The	2017	PLoS ONE	82
Horsti K. (Horsti, 2017)	Horsti, Karina	Swedish woman as a figure of pure and dangerous whiteness	2017	New Media and Society	51
Walter B.F. (Walter, 2017)	Walter, Barbara F.	The New New Civil Wars	2017	Annual Review of Political Science	50
Abokhodair N.; Hodges A.; Vieweg S. (Abokhodair et al., 2017)	Abokhodair, Norah; Vieweg, Sarah	Photo sharing in the Arab gulf: Expressing the collective and autonomous selves	2017	Proceedings of the ACM Conference on Computer Supported Cooperative Work, CSCW	33
da Silva R.; Crilley R. (Da Silva & Crilley, 2017)	da Silva, Raquel	"Talk about terror in our back gardens": an analysis of online comments about British foreign fighters in Syria	2017	Critical Studies on Terrorism	25
Evolvi G. (Evolvi, 2017)	Evolvi, Giulia	Hybrid Muslim identities in digital space: The Italian blog Yalla	2017	Social Compass	22
Nisa E.F. (Nisa, 2018a)	Nisa, Eva F.	Creative and Lucrative Dawa: The Visual Culture of Instagram amongst Female Muslim Youth in Indonesia	2018	Asiascape: Digital Asia	61

Evolvi G. (Nisa, 2018a) Nisa E.F. (Nisa, 2018c)	Evolvi, Giulia Nisa, Eva F.	Hate in a tweet: Exploring internet-based islamophobic discourses Social media and the birth of an Islamic social movement: ODOJ (One Day One Juz) in contemporary Indonesia	2018	Religions Indonesia and the Malay World	42 35
Baulch E.; Pramiyanti A. (Pramiyanti & Baulch, 2018)	Baulch, Emma; Pramiyanti, Alila	Hijabers on instagram: Using visual social media to construct the ideal muslim woman	2018	Social Media and Society	33
Husein F.; Slama M. (Husein & Slama, 2018)	Husein, Fatimah; Slama, Martin	Indonesian social media In tragoedia risus: Analysis of	2018	Indonesia and the Malay World	27
Dynel M.; Poppi F.I.M. (Dynel & Poppi, 2018)	Dynel, Marta		2018	Discourse and Communication	25
Klein O.; Muis J. (Klein & Muis, 2019)	Online discontent: comparing Klein, Ofra Western European far-right groups on Facebook	Western European far-right groups on Facebook	2019	European Societies	56
Asongu S.A.; Nwachukwu J.C.; Pyke C. (Asongu et al., 2019)	Nwachukwu, Jacinta C.	The Comparative Economics of ICT, Environmental Degradation and Inclusive Human Development in Sub-Saharan Africa	2019	Social Indicators Research	46
Ibtasam S.; Razaq L.; Ayub M.; Webster J.R.; Ahmed S.I.; Anderson R. (Ibtasam et al., 2019)	Ibtasam, Samia; Razaq, Lubna; Ayub, Maryam; Webster, Jennifer R.	"My cousin bought the phone for me. I never go to mobile shops.": The role of family in women's technological inclusion in Islamic culture	2019	Proceedings of the ACM on Human- Computer Interaction	35
Nisa E.F. (Nisa, 2019)	Nisa, Eva F.	Muslim Women in Contemporary Indonesia: Online Conflicting Narratives behind the Women Ulama Congress	2019	Asian Studies Review	22
Salinas E.; Pradell T.; Molera J. (Salinas et al., 2019) Aljarah I.; Habib M.;	Salinas, Elena; Pradell, Trinitat ; Molera, Judit	Glaze production at an early Islamic workshop in al-Andalus	2019	Archaeological and Anthropological Sciences	21
Hijazi N.; Faris H.; Qaddoura R.; Hammo B.; Abushariah M.; Alfawareh M. (Aljarah et al., 2021)	Habib, Maria; Qaddoura, Raneem	Intelligent detection of hate speech in Arabic social network: A machine learning approach	2021	Journal of Information Science	51

Table 6. 18 Top Female Authors by Productivity and Citation

Female Author	Title	Year	Source title	Cited	T. Article
	Global infertility and the globalization of new reproductive technologies: Illustrations from Egypt	2003	Social Science and Medicine	206	
Inhorn, Marcia C.	Middle Eastern masculinities in the age of new reproductive technologies: Male infertility and stigma in Egypt and Lebanon	2004	Medical Anthropology Quarterly	136	6
	"He won't be my son": Middle Eastern Muslim men's discourses of adoption and gamete donation	2006	Medical Anthropology Quarterly	112	

	Mutuality and immediacy between marja and muqallid: Evidence from male in vitro fertilization patients in shii lebanon	2011	International Journal of Middle East Studies	25	
	Medical Cosmopolitanism in Global Dubai: A Twenty-first-century Transnational Intracytoplasmic Sperm Injection (ICSI) Depot	2017	Medical Anthropology Quarterly	9	
	Abrahamic traditions and egg freezing: Religious Women's experiences in local moral worlds	2020	Social Science and Medicine	8	
	Performing citizenship on YouTube: Activism, satire and online debate around the anti-Islam video Fitna	2010	Critical Discourse Studies	104	
van Zoonen, Liesbet	Cosmopolitan communication online: YouTube responses to the anti-Islam film Fitna	2011	British Journal of Sociology	21	3
	How funny can Islam controversies be? Comedians defending their faiths on YouTube	2013	Television and New Media	7	
	Performing citizenship on YouTube: Activism, satire and online debate around the anti-Islam video Fitna	2010	Critical Discourse Studies	104	
Vis, Farida	Cosmopolitan communication online: YouTube responses to the anti-Islam film Fitna	2011	British Journal of Sociology	21	2
	Performing citizenship on YouTube: Activism, satire and online debate around the anti-Islam video Fitna	2010	Critical Discourse Studies	104	
Mihelj, Sabina	Cosmopolitan communication online: YouTube responses to the anti-Islam film Fitna	2011	British Journal of Sociology	21	2
	Privacy & social media in the context of the Arab Gulf	2016	DIS 2016 - Proceedings of the 2016 ACM Conference on Designing Interactive Systems: Fuse	98	
	#ISISisNotIslam or #DeportAllMuslims? Predicting unspoken views	2016	WebSci 2016 - Proceedings of the 2016 ACM Web Science Conference	49	
Abokhodair, Norah	Photo sharing in the Arab gulf: Expressing the collective and autonomous selves	2017	Proceedings of the ACM Conference on Computer Supported Cooperative Work, CSCW	33	6
TVOI G.I.	Privacy and twitter in Qatar: Traditional values in the digital world	2016	WebSci 2016 - Proceedings of the 2016 ACM Web Science Conference	26	
	"Against marrying a stranger:" Marital matchmaking technologies in Saudi Arabia	2017	DIS 2017 - Proceedings of the 2017 ACM Conference on Designing Interactive Systems	20	
	Holy Tweets: Exploring the Sharing of Quran on Twitter	2020	Proceedings of the ACM on Human-Computer Interaction	7	
Vieweg, Sarah	Privacy & social media in the context of the Arab Gulf	2016	DIS 2016 - Proceedings of the 2016 ACM Conference on Designing Interactive Systems: Fuse	98	3

	Photo sharing in the Arab gulf: Expressing the collective and autonomous selves	2017	Proceedings of the ACM Conference on Computer Supported Cooperative Work, CSCW	33	
	Privacy and twitter in Qatar: Traditional values in the digital world	2016	WebSci 2016 - Proceedings of the 2016 ACM Web Science Conference	26	
	Creative and Lucrative Dawa: The Visual Culture of Instagram amongst Female Muslim Youth in Indonesia	2018	Asiascape: Digital Asia	61	
	Social media and the birth of an Islamic social movement: ODOJ (One Day One Juz) in contemporary Indonesia	2018	Indonesia and the Malay World	35	
Nisa, Eva F.	The internet subculture of Indonesian face-veiled women	2013	International Journal of Cultural Studies	30	5
	Muslim Women in Contemporary Indonesia: Online Conflicting Narratives behind the Women Ulama Congress	2019	Asian Studies Review	22	
	Internet and Muslim Women	2021	Handbook of Contemporary Islam and Muslim Lives	0	
	Hate in a tweet: Exploring internet-based islamophobic discourses	2018	Religions	42	
	Hybrid Muslim identities in digital space: The Italian blog Yalla	2017	Social Compass	22	
	Emotional politics, islamophobic tweets: The hashtags #Brexit and #chiudiamoiporti	2019	Partecipazione e Conflitto	8	
Evolvi, Giulia	The veil and its materiality: Muslim women's digital narratives about the burkini ban	2019	Journal of Contemporary Religion	8	6
	Introduction: Islam, space, and the internet	2021	Journal of Religion, Media and Digital Culture	4	
	Likes, comments, and follow requests: The instagram user experiences of young Muslim women in the Netherlands	2021	Journal of Religion, Media and Digital Culture	2	
Akou, Heather Marie	Building a new "world fashion": Islamic dress in the twenty-first century	2007	Fashion Theory - Journal of Dress Body and Culture	38	2
	Interpreting Islam through the Internet: Making sense of hijab	2010	Contemporary Islam	28	
Ibtasam, Samia	"My cousin bought the phone for me. I never go to mobile shops.": The role of family in women's technological inclusion in Islamic culture	2019	Proceedings of the ACM on Human-Computer Interaction	35	2
	For God's sake! Considering Religious Beliefs in HCI Research: A Case of Islamic HCI	2021	Conference on Human Factors in Computing Systems - Proceedings	9	
Baulch, Emma	Hijabers on instagram: Using visual social media to construct the ideal muslim woman	2018	Social Media and Society	33	
	Beyond the Middle Classes, Beyond New Media: The Politics of Islamic Consumerism in Indonesia	2024	Asian Studies Review	0	2
	Hijabers on instagram: Using visual social media to construct the ideal muslim woman	2018	Social Media and Society	33	
Pramiyanti, Alila	Hijabers on Instagram: Using Visual Social Media to Construct the Ideal Muslim Woman	2018	Social Media and Society	27	2

	Accelerating Islamic charities in Indonesia: zakat, sedekah and the immediacy of social media	2020	South East Asia Research	28	
Slama, Martin	Online piety and its discontent: revisiting Islamic anxieties on Indonesian social media	2018	Indonesia and the Malay World	27	3
	Imagining indonesian islam as a center: New mediations and old concepts of power	2020	Archiv Orientalni	4	
	Muslim women's online discussions of gender relations in Islam	2010	Journal of Muslim Minority Affairs	25	
Piela, Anna	How do Muslim women who wear the niqab interact with others online? A case study of a profile on a photo-sharing website	2017	New Media and Society	7	3
	Online Islamic Spaces as Communities of Practice for Female Muslim Converts Who Wear the Niqab	2015	Hawwa	4	
	Women's Digital Activism in a Changing Middle East	2015	International Journal of Middle East Studies	24	
Sreberny, Annabelle	The internet in Iran: The battle over an emerging virtual public sphere	2010	Internationalizing Internet Studies: Beyond Anglophone Paradigms	3	2
	Glaze production at an early Islamic workshop in al-Andalus	2019	Archaeological and Anthropological Sciences	21	
Salinas, Elena	An early example of glaze technology diffusion in North Africa: The Islamic workshop of Tahert (central Maghreb, Algeria)	2023	Journal of Archaeological Science: Reports	0	2
Pradell, Trinitat	Glaze production at an early Islamic workshop in al-Andalus	2019	Archaeological and Anthropological Sciences	21	
	An early example of glaze technology diffusion in North Africa: The Islamic workshop of Tahert (central Maghreb, Algeria)	2023	Journal of Archaeological Science: Reports	0	2
Mihelj, Sabina	Performing citizenship on YouTube: Activism, satire and online debate around the anti-Islam video Fitna	2010	Critical Discourse Studies	104	2
	Cosmopolitan communication online: YouTube responses to the anti-Islam film Fitna	2011	British Journal of Sociology	21	

Figure 13, Table 6, and Table 7 present a comprehensive analysis of the role and contributions of female authors in digital Islamic literature, highlighting their significant impact across various disciplines, such as social sciences, medical anthropology, and geopolitics. It shows the diversity of topics covered by these authors, including environmental ethics, women's political rights, and the implications of new reproductive technologies in Middle Eastern societies. This research emphasizes the importance of collaboration among female scholars and the high level of recognition they receive, as evidenced by citations. Notably, Marcia C. Inhorn stands out for her contribution to medical anthropology and reproductive technology. This paper also identifies emerging themes in digital Islamic literature, such as the expression of Islamic identity through social media (Abokhodair & Vieweg, 2016), the intersection of technology with religious practice, and evolving gender dynamics in Muslim societies (Clarke & Inhorn, 2011; Inhorn, 2003, 2004, 2006; Stowasser, 2001). This analysis challenges existing perceptions of gender bias in Islamic studies and the digital humanities, underscoring the vital role female authors play in advancing the discourse on Islam and digital culture (Clarke & Inhorn, 2011; Inhorn, 2003, 2004, 2006).

An analysis of the most prolific female writers in the digital Islamic literature reveals a dynamic and diverse field. Their contributions not only enrich the academic world but also provide deep insights into the complexities of digital Islam and gender dynamics.

# *RQ7:* Most cited references in digital islam literature

This study uses bibliometric indicators, such as the most cited references by the author and the most cited sources and references, to analyze the theoretical framework that dominates studies on the interaction between Islam and digital technology.

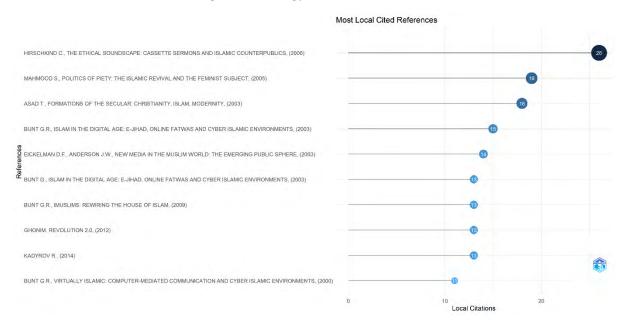


Figure 14. Most cited Reference by Author in Digital Islam

<u>Figure 14</u> shows the names of the authors of the documents referenced in the 1060 articles analyzed in this study. The table below provides a detailed summary of the 15 most influential authors.

Table 7. 15 Most Influental References Authors

Authors	Citation
Bunt G.R.	91
Foucault M.	71
Roy O.	71
Campbell H.	66
Mandaville P.	66
Eickelman D.F.	64
Anderson J.W.	63
Hirschkind C.	60
Asad T.	55
Inhorn M.C.	55
Bunt G.	53
Campbell H.A.	53
Slama M.	50
Mahmood S.	48
Ahmed S.	42

<u>Table 8</u> shows the authors who made the most significant contributions to the 1060 pieces of literature examining the relationship between Islam and digital technology, based on the number of citations to their work in the documents analyzed.

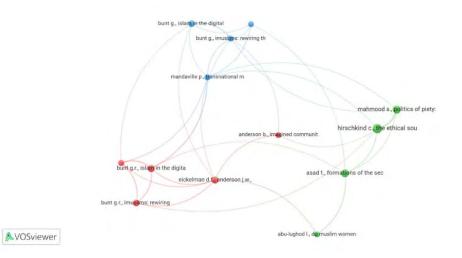


Figure 15. Most Cited References in Digital Islam

Table 8. 15 Most Cited References in Digital Islam

Authors	Article	Citations
	The Ethical Soundscape: Cassette Sermons and Islamic	
Hirschkind C. (2009)	Counterpublics	26
Mahmood S. (2012)	Politics of Piety: The Islamic Revival and the Feminist Subject	19
Asad T. (2010)	Formations of the Secular: Christianity, Islam, Modernity Islam in the Digital Age: E-Jihad, Online Fatwas and Cyber	18
Bunt G.R. (2003) Eickelman D.F.,	Islamic Environments	28
Anderson J.W. (2003)	New Media in the Muslim World: The Emerging Public Sphere	14
Bunt G.R. (2009)	iMuslims: Rewiring the House of Islam Virtually Islamic: Computer-Mediated Communication and	23
Bunt G.R. (2000)	Cyber Islamic Environments	11
Mandaville P. (2006)	Transnational Muslim Politics: Reimagining the Umma	11
Abu-Lughod L. (2015)	Do Muslim Women Need Saving? Imagined Communities: Reflections on the Origin and Spread of	10
Anderson B. (1991)	Nationalism	10
Roy O. (2004)	Globalized Islam: The Search for a New Ummah	10

<u>Figure 15</u> and <u>Table 9</u> show the significant works frequently cited in the literature on the correlation between Islam and technology, emphasizing their impact on shaping academic comprehension of the topic.

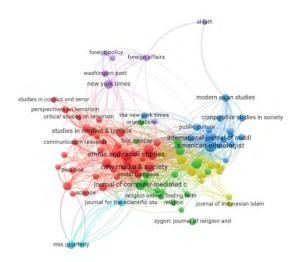






Figure 16. Most Cited Sources

Table 9. 15 most cited sources

Sources	Citation
American Ethnologist	94
Ethnic and Racial Studies	93
New Media & Society	103
Contemporary Islam	62
Journal of Communication	73
Journal of Computer-Mediated Communication	64
Journal of Ethnic and Migration Studies	63
New Media in the Muslim World: The Emerging Public Sphere	63
The New York Times	56
Information, Communication & Society	56
Social media + Society	46
International Journal of Communication	46
Computers in Human Behavior	47
The Muslim World	49
Indonesia and the Malay World	49

The interaction between Islam and digital technology is a dynamic and interdisciplinary field of study, as observed from the analysis of various data sources in Figure 16 and Table 10. Multiple disciplines such as anthropology, sociology, and media studies contribute to this research by offering diverse perspectives on the topic. The most-cited references indicate a significant focus on the influence of new media and communication technologies on Muslim life. Scholars such as Bunt and Hirschkind are recognized for their influential contributions to the field. Several journals, including "American Ethnologist," "New Media & Society," and "Contemporary Islam," Contemporary Islam, are important sources for publishing current and influential studies on this subject. Research in this area considers both global and local contexts, recognizing the unique social, cultural, and political dynamics at play. Critical topics that are frequently explored include identity, online Muslim communities, religious practices in the digital age, and debates on religious authority in digital spaces. Overall, this study combines theoretical analysis with empirical case studies to understand the impact of technology on the social and spiritual dimensions of Muslims' lives.

#### **Discussion**

When did the discourse on Islam and digital technology begin?

In this regard, bibliometric analysis indicates that digital Islam has gained growing academic interest since 1969, a rise that has evolved significantly since the early 2000s. There are two primary reasons for this increase: first, the global repercussions of the post-9/11 world and second, the radical development of information and communication technologies. The 9/11 terrorist attacks undoubtedly changed global perceptions of Islam significantly, and with increasing Internet usage, it became all the more pressing to understand its digital representations. At the same time, Internet and mobile technologies were redefining religious, social, and cultural engagements within Muslim communities, and scholars came forward to take a closer look at those dynamics with digital lenses, creating fruitful academic discourses that opened up journals and conferences such as 'Religions,' the 'Indonesian Journal of Islam and Muslim Societies,' 'Contemporary Islam,' and the 'International Conference on Information and Communication Technology for the Muslim World.'

Indeed, several stages of technological adoption in religious practices have been identified in the literature. Evolvi (2021) defined four phases of digital-religious evolution from the mid-1990s to the late 2010s: the use of religious websites, apps, and social media for religious purposes. As Bunt (2000) pointed out, the integration of the Internet into religious practice allows for remote access to sermons and the sharing of religious experiences. These efforts are reflected in the publication and citation trends of the field, with spikes in major years such as 2003, 2004, and 2016, and a fall from 2019 to 2024, indicating that research on the development of understanding of how digital technologies reshape Islamic practices and identity has continued.

The adoption of technology in Islamic contexts is shaped by a mix of historical, technological, and sociopolitical factors. While Rapoport (1983) and Robinson (1993) do not directly address Digital Islam, they offer key insights into how technology intersects with Islamic practices and communities.

Rapoport's work delves into the use of organized networks and strategic communication by the Assassins, highlighting historical precedents for how modern extremist groups might exploit digital tools. This historical context can help us to understand the current dynamics in which digital platforms are used to spread religious and ideological narratives.

Robinson, on the other hand, focused on the impact of print technology on Islamic knowledge transmission. He observed initial resistance to this new technology in Muslim societies. This resistance and subsequent adaptation reflect the broader patterns seen today as Islamic communities engage with digital innovations.

Together, these studies show that the integration of technology in Islamic contexts is influenced by historical precedents and sociopolitical dynamics, shaping the evolution of traditional practices in the digital age.

This aligns with numerous studies indicating that discussions on Islam and digital technology stretch back to the 1970s (Halevi, 2021, pp. 1975–2010). During this period, there was a significant discourse on religio-technological innovations, leading to the creation of devices tailored to meet the needs of Muslims. Over the next three decades, as highlighted by Halevi (2021), there was a remarkable surge in inventions targeting the Islamic market, such as the first Islamic electronic watch and even devices like "The Muslim Xbox."

The introduction of printing technology played a crucial role in integrating Islamic knowledge into Muslim society. This shift significantly influenced the development of concepts like "tradition" and "modernity" within these communities (Roper, 2017).

Moreover, the advancement of digital technology has had a profound impact on the spread of extremist views and the rapid rise of cyber jihad within the online Muslim community or cyber ummah (Czornik, 2024).

How has digital technology and social media evolved and affected Muslim communities?

Analyzing influential authors in the digital Islam literature using VOS Viewer highlights several key contributors whose work has had a significant impact. Norah Abokhodair, Sarah Vieweg, Marcia C. Inhorn, Eva F. Nisa, Giulia Evolvi, Morgan Clarke, Patrick Eisenlohr, and Emma Baulch stand out due to their substantial citations, showcasing their important contributions to the field.

Abokhodair's research gives us a fascinating look at how technology, privacy, and cultural norms come together in the Arabian Gulf. In 2016, she was part of a study showing that social media can predict attitudes towards Muslims, even if Islam is not directly mentioned (Magdy et al., 2016). Another study from the same year examined how cultural and religious values shape privacy views among Gulf citizens (Abokhodair & Vieweg, 2016). She also used predictive modeling to examine American attitudes towards Islam on Twitter after the Paris attack (Abokhodair et al., 2016).

In 2017, Abokhodair explored photo-sharing habits in the Arabian Gulf and found that people often prioritized the collective self over individual preferences when sharing photos (Abokhodair et al., 2017). She also looked into how socio-technical and cultural factors influence the use of matchmaking technology in Saudi Arabia, offering valuable design insights (Al-Dawood et al., 2017).

In 2020, Abokhodair's research on sharing Quranic verses on Twitter highlighted that online platforms not only extend religious life offline, but also create new ways for religious expression and community building (Abokhodair et al., 2020). Her work helps us to understand the complex relationship between digital technology, culture, and religion in the Arabian Gulf.

Marcia C. Inhorn's work interrogates the complexity of infertility and new reproductive technologies, particularly in the Middle Eastern setting. It has examined globalization and in vitro fertilization technologies, stigma, secrecy, and pronatalist societies in cases of male infertility and religious and cultural resistance to options such as gamete donation and adoption among Muslim men (Inhorn, 2003, 2004, 2006). She also investigated the role of religious authority on reproductive technology in Shia Islam, captured Dubai as an upand-coming site for medical tourism, which specializes in technologies such as ICSI, and wrote about how religiously observant women from Abrahamic traditions received elective egg-freezing. In her presentation, she shows how cultural expectations, religious beliefs, and state-of-the-art medical technologies fuse to shape attitudes toward infertility and family planning (Inhorn, 2011; Inhorn, 2017; Clarke & Inhorn, 2020).

Eva F. Nisa's research examines the ways in which Indonesian Muslim women interact with digital technology and Islamic culture, and how this shapes their religious and social identities. The 2013 study focused on an online subculture of veiled women in Indonesia who used the Internet to promote Islam and challenge perceptions of oppression. Digital platforms allow women to form subcultures and strengthen their religious communities (Nisa 2013). In 2018, Nisa conducted research on the use of Instagram by young Indonesian Muslims and demonstrated that social media can be utilized as a platform for religious education and identity expression through creative forms of da'wah (Nisa, 2018b). He also found that the One Day One Juz (ODOJ) movement, which employs WhatsApp to

promote Quran recitation, exemplifies how digital tools can enhance religious mobilization (Nisa, 2018c). In 2019, Nisa conducted research on Indonesia's inaugural congress of female Muslim scholars, examining the impact of this event on women's visibility and influence on Islamic discourse (Nisa, 2019). Nisa's most recent research in 2021 examined the broad impact of the Internet on Muslim women globally, demonstrating that digital platforms empower them to challenge traditional religious authorities and to express diverse religious and gender identities (Nisa, 2021). Nisa's research demonstrated the significant impact of the Internet and social media on religious, cultural, and social dynamics among Muslims in Indonesia and globally.

Giulia Evolvi's research explores the intersection of Islam, identity, and digital spaces. She focuses on how digital platforms serve as arenas for expressing and negotiating Muslim identities, particularly within European contexts, where Islam is often seen as conflicting with local values. In her work, Evolvi examined the narratives of young Italian Muslims on the blog "Yalla Italia," highlighting how they challenge mainstream media stereotypes and advocate social change, including quicker citizenship processes (Evolvi, 2017). She also analyzed online Islamophobia, detailing how Internet discourses enhance existing anti-Muslim sentiments by framing Muslims as incompatible with Western values (Evolvi 2018). Additionally, Evolvi discusses the materiality of Muslim women's dresses, such as the burkini, in digital narratives to counteract stereotypes and assert their rights within public spaces (Evolvi, 2019a, 2019b). Lale Mahmudova and Giulia Evolvi's (2021) study explores the impact of Instagram on young Dutch Muslim women, highlighting how the platform facilitates identity expression but also exposes users to privacy issues. Their work shows how these women navigate their religious and cultural identities in a Western context, using digital spaces. Additionally, a special issue edited by Evolvi and Maria Chiara Giorda (2021) discussed the redefinition of religious and spatial boundaries through digital platforms. This issue argues that digital spaces create "hybrid religious performances" that link local and global contexts, affecting how religious practices are performed and understood today. These studies provide insights into the complex interplay between digital environments, religious identity, and community belonging. Her studies collectively illustrate how digital environments act as "third spaces" for hybrid religious performances, challenging and reshaping traditional notions of religious identity in the contemporary digital era.

Morgan Clarke's research encompasses several key themes related to kinship, reproductive technologies, and Islamic law within the context of the Middle East, notably in Lebanon. Here, a concise paragraph summarizing his work along with the publication years is as follows: Morgan Clarke investigates the interplay between Islamic legal traditions and modern reproductive technologies, revealing how traditional concepts such as milk kinship (2007b) adapt to contemporary challenges such as donor eggs and surrogacy, thereby persisting rather than diminishing modernity. His work on kinship and biomedicine (2007a, 2007b) explores notions of 'closeness' in the context of new medical technologies and their implications for social and ethical norms in Lebanon. In another study, Clarke (2008) examined how kinship is shaped by new reproductive technologies, the overarching themes of sexual morality, and its political ramifications in the Middle East. Clarke, along with C. Marcia Inhorn examined the relationship between religious authority and assisted reproductive technologies in Shi'i Islam, focusing on the dynamics between senior clerics and their followers in the context of infertility treatments (Clarke & Inhorn, 2011). Through these studies, Clarke provides insightful analyses of how traditional practices and new technologies coalesce in the modern Islamic world.

Patrick Eisenlohr's scholarly work extensively explores the intricate relationships between religious practices, media technology, and notions of authenticity and authority within the context of Mauritian Islam. His studies detail how modern media technologies not only transform religious practices, but also challenge and redefine traditional notions of religious authority and the mediation of the sacreds.

In 2009, Eisenlohr examined the dialectics of mediation and immediacy in religious settings, showing how theological assumptions about mediation shaped the use of media technology (Eisenlohr, 2009). By 2010, he had further delved into how sound reproduction technologies impacted the transnational circulation of devotional discourse (Eisenlohr, 2010). His research emphasizes the interaction between language as a medium and other media technologies in religious life (Eisenlohr, 2011). In 2013, Eisenlohr explored how religious performances in Mauritius act as diasporic heritage, legitimizing claims on citizenship through the materiality of religious practice (Eisenlohr, 2013). Finally, in 2014, he analyzed the public and mediated aspects of religion among Mauritian Muslims, highlighting the complex relationship between media practices and religious experiences (Eisenlohr, 2014). Through these studies, Eisenlohr provides valuable insights into the dynamic interplay between religion, media, and cultural identity in a globalized world.

Emma Baulch, in collaboration with Alila Pramiyanti and Julian Millie, engages in research that combines themes of Islamic consumerism, social media, and identity within the Indonesian context. Pramiyanti and Baulch (2018) focused on how members of Indonesia's Hijabers' Community use Instagram to perform and negotiate aspects of their identity. This involves framing their presentation within the context of "dakwah" (Islamic preaching) and middle-class aesthetics, creating a unique intersection between religious duty and social media performance. This performance on Instagram is analyzed as both a variant of post-feminist empowerment and a form of electronically-mediated Muslim preaching, highlighting a complex "composite habitus" where global digital culture and Islamic communication intersect.

Millie and Baulch (2024) expand on these themes by exploring the broader implications of Islamic consumerism in Indonesia beyond the confines of the middle class. They discuss the increasing interplay between religion and consumerism facilitated by new technologies, the role of social media in shaping Islamic authority, and the need for a renewed focus on the materiality and social meaning of Islamic practices. This work suggests a dynamic and evolving landscape in which traditional boundaries within Islamic practice are reshaped by modern consumers and digital cultures.

Researchers such as Abokhodair Norah and C. Marcia Inhorn, Eva F. Nisa, Giulia Evolvi, Morgan Clarke, Patrick Eisenlohr, and Emma Baulch provide in-depth insights into the influence of digital technologies on Islamic practice and identity. Abokhodair's research focuses on the impact of digital technologies on privacy and social interaction, whereas Inhorn's work delves into the implications of reproductive technologies for social views. Nisa's research explored the digital expressions of religious and social identities. Evolvi examined representations of Muslim identity in the media, Clarke assessed the adaptation of Islamic law to biotechnology, Eisenlohr examined changes in religious authority brought about by media technology, and Baulch highlighted the impact of social media on consumerism and dawah. Collectively, these studies demonstrate how technology affects religious interpretations and practices in the modern era.

The bibliometric analysis of female authors in digital Islamic literature shows their significant impact across diverse fields, such as social sciences, medical anthropology, and geopolitics, covering topics such as environmental ethics, women's political rights, and reproductive technologies in the Middle East. This research highlights the importance of female collaboration and its high recognition in academia with Marcia C. Inhorn noted her contribution to the field of medical anthropology. The paper also explores emerging themes, such as the expression of Islamic identity through social media and the evolving gender dynamics in Muslim societies, challenging traditional perceptions of gender bias in Islamic studies and digital humanities. This highlights the crucial role female authors play in advancing discussions on Islam and digital culture.

This bibliometric analysis highlights the critical intersection between digital technologies and religious practices, particularly through the work of scholars, such as Abokhodair and Nisa. These authors document how digital platforms facilitate new forms of religious expression among Muslim women, offering them a space to negotiate and redefine their religious and social identities. This directly correlates with theoretical discussions on cultural empowerment and preservation, where digital media is seen as a catalyst for sociocultural change in Islamic societies (Buchanan & Husain, 2022). Abokhodair and Nisa's findings suggest that, while digital media enables broader expressions of identity, it also complicates traditional religious practices by introducing new modes of engagement that can both support and challenge existing religious norms (Campbell, 2012).

In addition, keyword occurrence mapping and thematic evolution techniques identified ten thematic clusters covering a range of contemporary social issues. These include the role of digital platforms in shaping cultural and religious identities, the interaction between Islamic traditions and modern challenges, and the socio-political dynamics in the Middle East after the Arab Spring. The research also highlights how digital media influence terrorism, activism, and identity politics in various regions, including West Africa and Indonesia.

Thematic map analysis categorizes these themes based on their relevance and development stage, pinpointing key topics such as terrorism and the Islamic State as central to discussions on the impact of digital technology on religious discourse. From 2008 to 2024, there has been a noticeable shift towards integrating digital technologies into Islamic practices. This period has also seen an expansion of discussions to include pressing global issues, such as globalization, Islamophobia, and digital activism. This evolution indicates a dynamic change in the field of Islamic studies, reflecting the growth and transformation of these themes over time.

Thematic analysis identifying key clusters of digital activism, terrorism, and religious tolerance provides a deeper understanding of how digital media impacts religious tolerance and extremism (Arzroomchilar, 2022). For example, the correlation between the proliferation of digital platforms and the increase in extremist content and counter-discourses promoting tolerance underscores the dual effects of digital technologies (Arzroomchilar, 2022). This reflects theoretical assertions about the risks of digital transformation, such as cyber jihad and the spread of extremist ideologies, while highlighting the potential of digital media to foster a more inclusive understanding of religious diversity (Bunt, 2003; Czornik 2024).

Moreover, the emergence of themes related to the virtualization of traditional religious practices, such as pilgrimages, correlates with changes in religious education and practices (Khairudin and Mohammad 2021). The shift from in-person religious instruction to digital forums not only democratizes access to religious knowledge but also changes the underlying dynamics of religious authority and learning. This is in line with the theoretical impact noted in the transformation of religious education, where digital media reshapes the interaction between clerics and society, potentially weakening traditional authoritative structures while expanding access (Sheikh Khairudin & Mohammad, 2021).

Bibliometric findings also suggest a significant correlation between increasing digital literacy and the evolution of religious practices and identities. As digital literacy increases, so does the engagement and reinterpretation of Islamic content online, leading to positive outcomes such as increased educational opportunities, and negative outcomes such as the potential for misinterpretation and misuse of religious texts (Araniri et al., 2021).

#### What is digital islam?

This bibliometric analysis derived major findings in the form of influential authors, the most impactful articles, topic trends, evolved topics, and highly cited references among authors who have written articles on Digital Islam. The main findings described above can be the basis for developing what and how this concept of digital Islam is actually. In view of these results, I discuss digital Islam in more detail.

These two major terms often appear as the basis of writers' thoughts in the discourse of Islam in the digital age: digital religion and the term digital ummah or cyber ummah. Thus, it is imperative to first situate our understanding of these two terms.

Digital religion describes the intersection, transformation, and coexistence of religious practices with digital technology and culture. Otherwise, it means showing religious beliefs, experiences, and negotiations emanating from practices, communities, and identities within online spaces, such as social media, websites, virtual reality environments, and online forums. It investigates how online and offline religio-spatial activities are entwined and how digital technologies have traditionally shaped religious practices (Campbell and Evolvi 2020). It also considers the new spiritualities and innovative forms of religious participation that the digital world makes possible (Campbell and Evolvi 2020). The focus is also on how digital media and the Internet shape the concern of how religiously devoted people practice their religion, interact with religious communities, and integrate their religion into digital culture, thus changing the contemporary landscape of religiosity (Campbell 2017).

Cyber Ummah "Cyber Ummah" or "Virtual Ummah" refers to the Islamic community in cyberspace that resulted from the introduction of the Internet into the Muslim world. Cyber Ummah is a community that exists online, transcending geographical and other borders such as ethnicity and culture (Khamis, 2018). In this regard, the Internet presents a platform for global communication among various groups of Muslims and between different groups of Muslims and non-Muslims (Khamis 2018). It constructs an interactive egalitarian virtual community that allows the formulation of new identities and resistance to online Islamic discourse. Cyber Ummah holds implications for the creation of varied identities and resistance that set up different discourses and sites of Islam in cyberspace (Khamis, 2018). Online sites and platforms are oriented to work like virtual markets, within which exchange takes place between ideas and concepts relating to Islam and Muslims. There is recourse to different mainlines and alternative sources of Islamic doctrines and scriptures in online spaces for Muslims. All things considered, Cyber Ummah has happened to be a phenomenon denoting changes in Muslim societies on the Internet and offline, and thus participates in the process of constructing the religious, social, and cultural settings of the digital age Muslim communities.

Influential contributors to the stream of digital Islamic literature include Norah Abokhodair, Sarah Vieweg, Marcia C. Inhorn, Eva F. Nisa, Giulia Evolvi, Morgan Clarke, Patrick Eisenlohr, and Emma Baulch. A high number of citations indicates high impact. These researchers have contributed a vital element in understanding how digital technologies have affected Islamic practices and identity. Abokhodair focuses on privacy and social interaction; Inhorn on reproductive technologies; Nisa on digital articulations of religious and social identity; Evolvi on media representations of Muslim identity; Clarke on the adaptation of Islamic law regarding biotechnology; Eisenlohr deals with how media technology affects religious authority; and lastly, Baulch on social media's part in consumerism and dawah. Meta-analyses in this line demonstrate the role of technology as a reshaper of contemporary religious interpretation and practice.

In terms of Digital Islam, concerning SRA findings, a number of points came across this digital Islamic trend. First, the influence of digital technology and, in particular, social media, changed the way

religious information is transmitted and constructed as religious discourse within the world's Muslim-communities. People are able to seek religious information on their own via the Internet, thus shifting their traditional religious authority and digitally empowering them (Robinson 1993; Turner 2007). It has further opened the world to interconnectivity and created spaces for international discussion, interpretation, and understanding of Islam. This kind of expansion erodes traditional authority, while Alternative Islamic scholarship, with alternative interpretations and translations of Islām, is offered in the digital framework (Robinson, 1993).

Third, social media platforms could play a role in the maintenance of negative stereotypes about Islam and Muslims, as such discourses ultimately feed into the continuous discursive power in shaping the ecclesialspblic perception of religion (Eickelman, 2003). Moreover, the sharing of religious content in digital networks represents a contemporary adaptation in Islam, reflecting a broader tendency ushered in by the introduction of sound reproduction technologies in religious practices and, therefore, prefiguring Digital Islam.

Private and social media activities are strongly influenced by traditional values and cultural expectations of technology use. The role of a Muslim woman in the digital space is huge. Looking through the ways women use and influence the digital space—religiously, socially, and politically—it justifies the focus on gender when discussing Digital Islam (Nisa, 2018c, 2018a, 2021). Moreover, the use of, and resorting to, digital technologies in religious contexts—like in matchmaking technologies or sharing Quranic verses on Twitter—demonstrates the potential of digital technologies in the betterment of religious communities and practices (Abokhodair et al., 2020).

Understanding Digital Islam requires one to consider the social, cultural, and political contexts that envelop it. On digital Islam, various themes were found in the thematic analysis; specifically, "terrorism," "Islamic state," and "jihad" seem to be major foci of research interest, while "Malaysia," "technology," and "culture" have been identified as minor or less explored themes. From 2008 to 2021, there was already an increasingly visible change in issues underpinning the role of technology in religious practice, theological debate, and the quest for religious identity. Social media, especially Instagram, is rapidly becoming one of the major channels through which religious and political worldviews and views related to culture are expressed and debated, such as issues of Muslim identification and Islamophobia. More prominent now are intertwined Islam and technology, gender issues, and the representation of Muslim women. On the other hand, traditional religious themes like "Bioethics" and "Hajj" are of pivotal importance. Other sociopolitical issues being taken up for discussion relate to "Islamophobia" and "nationalism.". Drawing on these results, one can assume that digital Islam is a dynamic interaction phenomenon between Islamic doctrine and practices and advances in digital technologies. It involves applying information and communication technologies in religious contexts and permanently changing the way religious information is accessed and transmitted today, having a substantial impact on the social and cultural fabric of global Muslims.

# The following aspects form the definition of Digital Islam:

- 1. Digital-Religious Interaction: Digital Islam is defined as the interaction between digital tools and Islamic religious activities, for instance, reading, worshiping, or even preaching. This also comprises reading the Quran through applications, discussing religion on Internet forums, and using social platforms to spread Islamic knowledge.
- Online Religious Authority and Identity: The increase in online scholars and preachers is just a symptom of the change of religious authority from traditional to digital. These figures can influence religious thought widely, thereby exerting an immense religious authority without

- any geographical boundaries, hence changing the power dynamics within the Islamic community.
- 3. Virtual Community (Cyber Ummah): This concept of Cyber Ummah, or Virtual Ummah, brings out the issue of emerging Muslim identities and communities in cyberspace. Spanning across nations and cultures, it creates new settings for interchange and discourse among various groups within nations that constitute Muslims.
- 4. Technology and its Effects on the Practice and Interpreting of Religious Activities: The role of technology is not only to support religious practice, but it can also challenge the traditionalist's interpretation and open windows for new ones. Social media can be used to discuss religious issues that can influence recent norms and views.
- 5. Response to Social and Cultural Issues: Digital Islam also summarizes the response of the Muslim community to social and cultural issues inside digital media. This may comprise online campaigns against Islamophobia or details of how Muslims are integrated into non-Muslim societies. Moreover, it facilitates online dialogues for tolerance and understanding.

Digital Islam is, therefore, multi-disciplined into theology, sociology, information technology, and cultural studies. This contribution reflects how digital technologies have changed not only the forms of communication and interaction but also fundamentally intervened in how Muslims understand, practice, and promote their religion within the global and digital age.

#### Theoretical frameworks in digital islam

This study aimed to understand the key theories and concepts that have shaped the field by identifying and analyzing the most cited documents and references in the literature. It also evaluates these theoretical frameworks to gain insights into how they explain the relationships between Islamic religious practices and the use and impact of digital technology. This study critically assesses the effectiveness and relevance of these theoretical approaches and suggests new directions for future research in this area.

As previously found, this study identified each of the 15 most-cited references, their sources, and authors. Some of the key concepts from these 15 references are as follows:

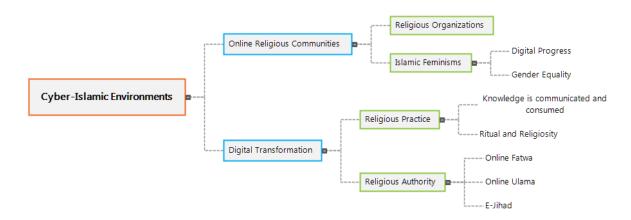


Figure 17. "Islam in the Digital Age" and "Hashtag Islam" by Gary R. Bunt

As shown in <u>Figure 17</u>, Bunt (2003, 2018) examined the transformative role of technology in Muslim religious practices, especially on the Internet. This work introduces the concept of the Cyber Islamic Environment, which has facilitated new forms of religious expression, such as E-jihad and online

fatwas. These developments allow for the wider dissemination of Islamic views and decision-making processes. The book also addresses the complexities of cultural mixing within online discourse, which presents opportunities for broadening the reach of traditional teachings and challenges to preserving religious authenticity. Furthermore, Bunt discussed the impact of technology on the expansion of Arabic culture and language, alongside concerns about online radicalization and identity formation. The author advocates constructive engagement with technology, emphasizing that innovation and adaptation are crucial for maintaining the essence of religious practices in the digital era. Bunt (2018) discussed the development of cyber-Islamic environments (CIES) and the relationship between technology and Islamic practices. The book reviews several key themes and perspectives, including the evolution of CIES as influenced by developments in Internet technology and how it is changing religious discourse and authority in Islam. The author uses an interdisciplinary approach by drawing on insights from fields such as sociology, anthropology, religious studies, and political science, to understand the complex interactions between technology and Islam. One important theme addressed in this book is the impact of technology on Islamic religious authority online, including the challenges faced by traditional authorities in the digital age, and the role of online platforms in shaping contemporary understandings of religious leadership. The book also explores the role of social media in shaping Muslim networks and influencing relationships between Muslim individuals and communities in various contexts.

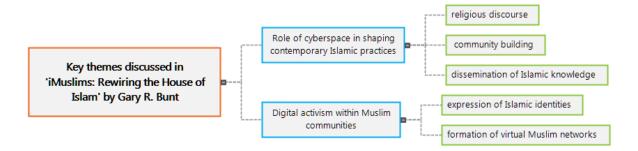


Figure 18. iMuslims: Rewiring the House of Islam by Gary R. Bunt

As shown In Figure 18, Bunt (2009) provides a comprehensive examination of the impact of online platforms on Islamic activism, jihadi networks, Muslim identity, and the spread of religious teaching. The book "iMuslims: Rewiring the House of Islam" by Gary R. Bunt explored the impact of digital technologies on Islamic practices and communities, discussing the intersection of technology, religion, and society. Bunt's work is informed by his previous research in books such as "Virtually Islamic" and "Islam in the Digital Age" (El-Nawawy, 2009). The book delves into themes such as the role of cyberspace in shaping contemporary Islamic practices, the emergence of digital activism within Muslim communities, and the reconfiguration of religious authority in online spaces (Weimann, 2010). Bunt's analysis highlights how the Internet serves as a platform for religious discourse, community building, and dissemination of Islamic knowledge. Additionally, the book examines how digital technologies influence the expression of Islamic identities and the formation of virtual Muslim networks (Weimann 2010).

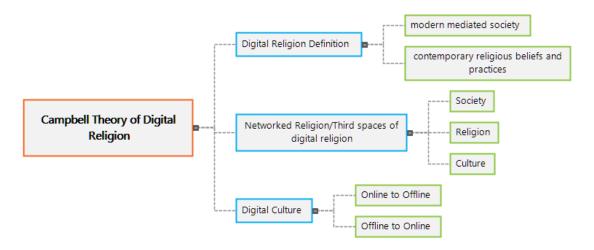


Figure 19. Campbell Theory of Digital Religion

The next expert who was also frequently cited by the authors in the analyzed articles was Heidi Campbell (2016). As Figure 19 shows, the concept often taken from Campbell is a digital religion. Exploration of the phenomenon of "Digital Religion" includes the study of how religion and new information communication technologies, especially the Internet, interact with each other. It examines how religious beliefs, practices, and communities manifest and transform in digital spaces, including online religious communities, virtual worship spaces, and religious rituals performed online (Campbell & Vitullo, 2016). Campbell's theory of Digital Religion studies the intersection of modern, highly digitized societies with contemporary religious beliefs and practices (Campbell & Vitullo, 2016; Helland, 2016). Digital religion is not only concerned with the existence of religion in digital media but also involves the interaction between social and cultural components and elements of digital society. Within this theory, there is the concept of "networked religion" which focuses on official religious activity in the digital world, as well as the "third space of digital religion," which addresses everyday or lived religion in a digital context (Campbell & Connelly, 2020). Campbell's theory also studies how divine revelation is presented and negotiated in digital culture, as well as how material religious practices and artifacts are packaged in online form (Sheldon & Campbell, 2021).

Researchers have explored the interconnections between online and offline religious realms, highlighting how traditional religious contexts blend with new digital contexts (Campbell 2012). In the Western context, "Digital Religion" has emerged as a way to discuss and study online religious practices that influence offline religious communities and institutions. The concept recognizes the unique influence of the Internet and digital technologies in shaping religious practices and beliefs as well as changing perceptions of religiosity in society. Digital Religious Studies is considered a subfield of broader disciplines, such as Internet Studies and Media, Culture and Religion Studies.

Research in this field was rooted in the mid-1990s, focusing on the use of the Internet by religious groups and its potential implications for religious beliefs and practices (Rapoport, 1983; Robinson, 1993). It also examines how religious groups move religious practices to the Internet, creating online communities and houses of worship, and conducting rituals online (Tsuria et al., 2017). Helland (2005; 2005) distinguishes between "religion online" versus "online religion," with "religion online" referring to information presented and controlled by traditionasl religious organizations or leaders, while "online religion" relates to religious innovation and collaboration that creates new understandings of religion through online environments.

Subsequent studies frequently cited in 1060 were spread across multiple authors. In contrast, the authors cited the work of Bunt and Campbell. Therefore, a focused summary of the most cited studies is presented in <u>Table 11</u>.

Table 10. Insight from other most cited references in Digital Islam

No.	Paper Title	Insight
1	The Ethical Soundscape: Cassette Sermons and Islamic Counterpublics	This book examines how cassette sermons became a powerful medium in Egypt for shaping public discussions on morality, demonstrating the role of new media in forming Islamic counterpublics.
2	Politics of Piety: The Islamic Revival and the Feminist Subject	Mahmood's work is a critical analysis of the Islamic revival movement in Egypt, focusing on women's participation. It challenges Western perceptions of agency and subjectivity, providing insights into the complex interplay between religion and gender.
3	Formations of the Secular: Christianity, Islam, Modernity	Asad explores the concept of secularism as it has evolved in Christian and Islamic contexts, questioning the assumptions of modernity and its impact on religious practices.
4	New Media in the Muslim World: The Emerging Public Sphere	This book discusses the transformative role of new media technologies in Islamic societies, highlighting how they have contributed to the emergence of a public sphere where traditional and modern values intersect.
5	Transnational Muslim Politics: Reimagining the Umma	Mandaville examines how Muslim politics transcends national boundaries, exploring the concept of the Umma (the global Muslim community) in the context of globalization and technological advances.
6	Do Muslim Women Need Saving?	Abu-Lughod critiques the Western narrative of rescuing Muslim women, arguing for a deeper understanding of cultural practices and the diverse experiences of women within Islamic societies.
7	Imagined Communities: Reflections on the Origin and Spread of Nationalism	Though not exclusively about the Islamic world, Anderson's seminal work on nationalism offers critical insights into how national identities are constructed, which is relevant to understanding Muslim identity and solidarity.
8	Globalized Islam: The Search for a New Ummah	Roy discusses the challenges and transformations within Islam in the context of globalization, focusing on the search for a new form of Muslim community that transcends traditional geographic and cultural boundaries.

Table 11 explores the dynamic role of digital platforms in shaping contemporary Islamic identities, practices, and communities, emphasizing their function as transformative public spaces. It highlights how digital spaces facilitate discussions of morality and ethics, challenge traditional boundaries, and enable the formation of new counterpublics within Islamic communities. Notably, this study addresses the impact of digital engagement on gender dynamics, offering perspectives on the resistance and reaffirmation of societal norms. It also delves into the intersection of secularism, modernity, and religion in digital contexts, enriching the discourse on Muslim societies' navigation of traditions and modernity. Furthermore, this study examines the concept of the Ummah in the digital age, focusing on how digital platforms redefine community boundaries and facilitate transnational connections. This collection of scholarly works provides a comprehensive overview of digital Islam, presenting it as a field in which traditional and modern elements intersect, highlighting the active role of digital spaces in reshaping Islamic identity, authority, and community in the 21st century.

Furthermore, with respect to the methods used in the study of digital Islam, It has been mentioned before that digital Islam is a sub-study of digital religion (Campbell, 2012, 2017; Campbell & Connelly,

2020; Helland, 2016; Sheldon & Campbell, 2021). Therefore, from the perspective of methods, the author agrees with what has been concluded by Tsuria et al. (2017) that textual analysis, interviews, and ethnography are the dominant research methods employed in the study of digital religion. The textual analysis method is divided into textual analysis in digital environments, textual analysis with digital tools, and textual analysis with a digital approach/frame. The interview method was divided into interviews in digital environments, interviews with digital tools, and interviews with digital approachs/frames. Ethnography is divided into digital, virtual, and online ethnography.

Furthermore, based on the analysis of the study and the main insights from most references, including the theories used and taken in digital Islam references, the following theoretical framework is formulated in this research:

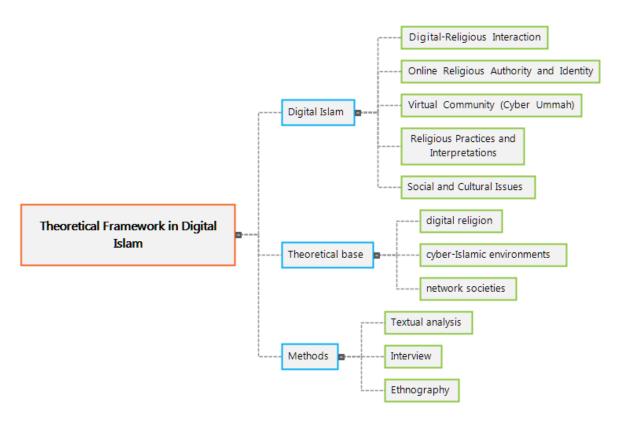


Figure 20. Theoretical Frameworks in Digital Islam

<u>Figure 20</u> presents a theoretical framework for the study of Digital Islam, in which the concept of interaction between religion and digital technology is the main focus. Within this framework, the study of digital Islam includes how religious authority and identity are explored and represented in online environments through practices such as the establishment of virtual communities or Cyber Ummahs that digitally connect global Muslims. Another important aspect is how religious practices and interpretations are adapted and interpreted in digital contexts, highlighting the social and cultural issues arising from these interactions.

Furthermore, a frequently used theoretical foundation is the concept of digital religion and the theory of the Cyber Islamic environment, which is an incarnation of the interaction between information technology and religion in a networked society. This approach opens a new perspective for understanding the dynamics of religious change in the context of modernity and globalization.

The most frequently used methods in this field include text analysis to understand narratives and discourses in digital content, interviews to gain an in-depth understanding of individuals engaged in

these activities, and ethnography, which allows direct observation of religious practices in digital environments. Through this approach, this research aims to provide a comprehensive picture of how Islam is interpreted and practiced in the digital age.

#### Conclusion

The discourse on Islam and digital technology began to gain significant academic attention in the early 2000s, catalyzed by the global impact of the post-9/11 world and the swift advancements in digital communication technologies. This period marked a pivotal shift in how Islamic practices and communities engaged with the digital world, leading to an increase in scholarly interest, as demonstrated by academic publications and citations. Studies have explored the integration of digital technologies into traditional Islamic practices and the emergence of online platforms as new venues for religious expression and community building.

A bibliometric analysis of digital Islamic literature identified several key contributors in the field. Norah Abokhodair, Sarah Vieweg, Marcia C. Inhorn, Eva F. Nisa, Giulia Evolvi, Morgan Clarke, Patrick Eisenlohr, and Emma Baulch are among the prominent researchers who have explored a wide range of topics related to digital Islamic literature. These themes encompass privacy and social interactions, reproductive technologies, digital expressions of religious and social identity, media representations of Muslim identity, adaptations of Islamic law to biotechnology, the impact of media technologies on religious authority, and the influence of social media on consumerism and da'wah (Islamic outreach). This analysis suggests that digital technologies have significantly shaped Islamic religious interpretations and practices in the modern era.

Research on digital Islam has progressively uncovered the complex layers of how technology influences religious practices, community dynamics, and identity within Muslim societies. The academic contributions from Authors such as Norah Abokhodair and Francis Robinson have highlighted the nuanced ways in which digital platforms facilitate both the continuity and transformation of Islamic practices. This evolution is evidenced in the growing body of literature examining digital religious practices, the shifting roles of religious authority, and the broader sociopolitical implications of technology on Islamic communities.

This study presents three foundational insights into digital Islamic studies, addressing key questions regarding the nature of digital Islam, its theoretical framework, and the significant role of women. First, it positions digital Islam as a critical subfield of digital religion, highlighting the intersection of Islamic traditions and digital technologies. This intersection catalyzes transformative shifts in religious practices, community formations, and identity reconstructions in the digital sphere, challenging conventional paradigms and forging a new understanding of Islam in the digital age.

Moreover, the research articulates the concepts of 'digital Muslim' and 'digital ummah' as central to this field. The 'digital Muslim' refers to individuals whose Islamic practice and community engagement take place in digital environments, and embodies the broader concept of the 'digital Ummah' - a global online Muslim community that transcends traditional geographic and cultural boundaries. This global community exemplifies significant changes in how religious information is disseminated and how Muslims worldwide connect, share, and interact in the digital age. The synonymous use of digital Muslims and ummah in this study underscores the seamless integration of individual and collective Islamic identities in digital spaces, demonstrating the expansive reach and communal solidarity of Islam across the digital landscape.

This study delves into the theoretical frameworks that frame digital Islam, drawing on disciplines such as digital religious studies, sociology, and anthropology to construct a comprehensive analytical lens.

By engaging with theories such as Heidi Campbell's "digital religion," Gary R. Bunt's "cyber-Islamic environments," and discussions of digital and social identity by Henri Tajfel, John Turner, and Manuel Castells' concept of "network societies," the research enriches our understanding of the socio-cultural and technological forces that shape the digital Muslim experience.

Significantly, women's empowerment and active participation in digital Islamic spaces have emerged as key findings that challenge traditional gender narratives. Women writers and scholars enrich the discourse, navigate, and influence the digital religious landscape through their contributions. The strategic use of digital platforms for education, socialization, and activism not only challenges established gender roles but also underscores women's empowerment and self-representation in the context of digital Islam.

In sum, the findings of this study highlight the transformative impact of digital Islam, characterized by the integration of tradition and digital innovation, the elucidation of multidisciplinary theoretical frameworks, and the dynamic engagement of women. By exploring the nature of digital Islam, the synonymous relationship between digital Muslims and Ummah, and the empowering role of women, this research significantly advances the field of action studies.

This study had some limitations that should be considered in future research. The use of the Scopus database may lead to missing important publications that are not indexed on this platform, such as Google Scholar, WoS, and other databases; thus, important data or developing trends may be missed. This study also had limitations in the timeframe of the study, as some studies were still in the process of being published or had not been published at the time of analysis. Nonetheless, the study achieved significant findings, including mapping key developments and trends in the incorporation of digital technologies in Islamic practices. These findings also emphasize the important role of digital platforms in education and religious engagement. This research provides a rich understanding of digital Islamic studies and demonstrates the evolving relationship between technology and religious practices, which can serve as a basis for further research.

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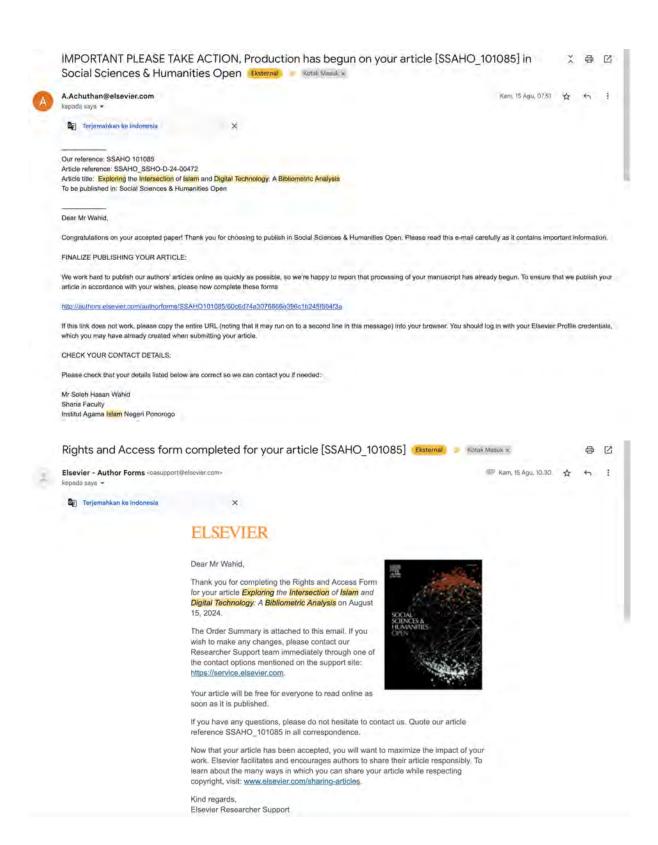
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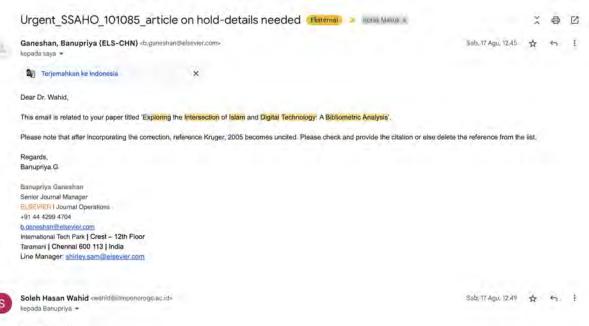
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