Digitizing Worship: Challenges of Religious Applications and Spiritual Decline in the Digital Era

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Abstract:
This paper aims to analyze the impact of digitalization on the religious practices of Muslims through the use of religious applications, such as Muslim Pro, and to explore the challenges related to spiritual depth and community engagement. This research uses a qualitative method with data collection techniques through online observation of users' interactions with the application. The research findings show that while religious applications facilitate access to information and worship, there is a tendency for a decline in spiritual quality and community engagement, particularly in terms of social interaction and direct religious guidance. Over-reliance on these applications can reduce a deeper understanding of religion and weaken participation in collective religious activities. This research contributes by offering solutions that integrate technology with religious social interactions, involving collaboration between app developers, religious institutions, and communities to maintain a balance between digital convenience and spiritual needs.
Keywords: digitizing worship, religious applications, Muslim Pro, spirituality.

INTRODUCTION

Information and Communication Technology (ICT) has created various new industries that leverage information and the internet, including the rapidly growing industry of religion-based applications in Indonesia (Atton, 2003; Eskicumali et al., 2015; Idris, 2020; Senjaya, 2018; Setia, 2020). In 2024, around 80% of Indonesia's population owned a smartphone, and more than 212 million users accessed the internet via their mobile phones, making Indonesia one of the largest mobile markets globally, with over 7.7 billion app downloads (Riyanto, 2024). Among the downloaded applications, utility-based apps, including religious services, ranked second with a total of 519,906,440 downloads, showing the high interest of the public in applications that support various aspects of their lives, including spiritual needs (Annur, 2024). However, although the rapid development of the religion-based application industry highlights the heavy reliance of Indonesian society on technology to meet spiritual needs, it also raises several challenges, such as the commercialization of religious services and the potential shift in the meaning of traditional religious practices, which require further study.

Studies on the utilization of ICT in industries have evolved in several directions: increasing industrial competitiveness through ICT, utilizing ICT in education, and understanding the environmental impact of ICT usage. *First,* industries saw the use of ICT as a way to improve competitiveness. Sobirovna and O'rinboyevich (2019) highlighted how ICT can boost competitiveness in industrial enterprises by enhancing strategic planning, innovation, and productivity. They emphasized that high-tech production in industries grew by 9.6%, underscoring ICT's role in creating more efficient industrial processes and access to global markets. *Second,* in the context of education, Bolaji and Jimoh (2023) examined how ICT has reshaped learning environments by enabling greater accessibility and student-focused teaching, enhancing student motivation and performance, particularly in public schools. *Third,* studies like those of Hankel et al. (2018) explored the environmental implications of ICT usage, finding that while ICT enhances industrial productivity, it can also lead to increased environmental degradation unless countered by sustainable practices like green innovation. Zhang et al. (2022) corroborated this by showing that ICT can reduce CO_2 emissions when combined with investments in education and ICT infrastructure in developing countries.

These three study trends clearly show that researchers have thoroughly mapped the focus on the technical aspects, educational benefits, and environmental impacts of ICT in industries. However, research specifically exploring the role of applications like Muslim Pro within the information technology industry and their impact on religious practices in the digital era remains underexplored. Therefore, this study aims to fill that gap by conducting an in-depth analysis of how the Muslim Pro application transforms the religious practices of Muslims while also contributing to the ICT industry. This research provides new insights into the intersections between industrial studies, sociology, and digital religious practices.

This research aims to thoroughly examine three main aspects related to the Muslim Pro application, particularly in the context of the digital religious service industry and its impact on religious practices. *First,* this study will comprehensively analyze the features, functions, and popularity of the Muslim Pro application among Muslims, as well as how this app supports the spiritual needs of its users. *Second,* it will explore the industry operating within the Muslim Pro application, including monetization strategies, business models, and the financial impact generated by the commercialization of religious services. *Third,* the study will identify and analyze the changes in religious practices that occur due to the use of Muslim Pro, specifically how the app affects traditional religious practices and social interactions among Muslims. In other words, this research aims to provide a comprehensive understanding of the relationship between industry, information technology, and digital religious services through the case study of the Muslim Pro application.

This paper argues that technology-based applications, such as Muslim Pro, not only make worship easier for Muslims but also fundamentally change how they practice religion, introducing new challenges in religious practices. Muslim Pro provides easy access to various religious services, such as prayer times, the Qibla direction, and a digital Qur'an, which enhance individual spiritual experiences (positive function). However, this app also has the potential to reduce direct involvement in traditional religious practices and encourage the commercialization of religious services, where commercial and technological elements could overshadow spiritual aspects, and the intimacy of worship may diminish (negative function).

These changes in religious practices influence how Muslims understand and experience their faith, with the risk that technology may replace the role of the community and religious scholars in guiding religious life. The cause of this change is the growing dependence on technology and the easy access to digital services, which significantly alter religious behavior. Thus, there is an urgent need to reevaluate the role of technology in religious life and how applications like Muslim Pro transform the way Muslims engage in spiritual practices so that these changes can be adapted while preserving the deeper essence of religion.

METHOD

Our study on the impact of digital religious applications in the religious app industry on worship practices and spiritual motivation used a qualitative approach involving online observation and app analysis (Lune & Berg, 2017; Rahim & Dilawati, 2022). We collected data from digital religious applications used by believers, focusing primarily on the Muslim Pro app. We obtained data through online observations of Muslim Pro's features and user reviews on the Google Play Store to gain insights into user responses to the app. Additionally, we gathered data from websites discussing the digital religious app industry and its impact. Thus, this study is qualitative, involving online observation, app reviews, and data analysis related to the digital religious app industry to understand its effects on worship practices and spiritual motivation. The study covers an examination of apps like Muslim Pro, the industrialization within Muslim Pro, and the impact of changes in religious practices caused by Muslim Pro.

We conducted the research through online observation techniques (Hine, 2020). This technique involved direct observation of activities within digital religious apps, particularly the Muslim Pro app. We observed the features provided by the app, including prayer schedules, religious content, and educational materials. We also analyzed user reviews on the Google Play Store and responses to the app across various online platforms to understand how the app influenced worship practices and spiritual motivation. With a focus on Muslim Pro and the digital religious app industry's response, the online observation technique allowed us to evaluate the impact and user engagement more deeply. Thus, online observation became an effective tool for collecting data and understanding the influence of digital religious apps on worship practices and spiritual motivation within the religious app industry context.

From January to August 2024, the study focused on the Muslim Pro app, which users have downloaded more than 100 million times. As the data collection technique involved online observation, we continuously monitored activities within the Muslim Pro app throughout this period. The first step was to determine Muslim Pro as the primary focus of the study, considering its popularity and widespread influence. Next, we accessed the app, evaluated the features provided, and used the app to experience its direct impact and benefits, both positive and negative. This process involved assessing content such as prayer schedules, religious, and educational materials, and user interactions within the app. We concluded the research with observations of experiences or results related to the use of digital apps following industrialization, such as Muslim Pro. By systematically and continuously conducting online observations during the study period, we obtained representative and accurate data on the impact of the Muslim Pro digital religious app on worship practices and spiritual motivation.

We classified data from digital religious apps, specifically Muslim Pro, thematically to understand their impact on worship practices and spiritual motivation. We categorized the data according to the study's scope, including app features, app impact, and user interactions. We analyzed the data in three stages: restatement (reduction) of data, data description, and data interpretation (Miles & Huberman, 2013). We conducted restatement by selecting the key features of the Muslim Pro app identified during online observation, such as prayer schedules and religious educational materials. We described the data to show the trends in the app's impact on worship motivation and the quality of the users' religious experience, both positive and negative. We interpreted the data by considering the social and cultural context of the app's users within the digital religious app industry to understand how the app influenced worship practices more deeply. These three stages of analysis formed the basis for concluding the effectiveness of digital religious apps in enhancing or diminishing worship motivation and engagement in religious practices.

RESULTS AND DISCUSSION
The Information Technology Industry and Religious Applications

In the development of information and communication technology (ICT), the use of technology-based applications has become increasingly important in various aspects of life, including religious practices (Eskicumali et al., 2015). One prominent application in this context is Muslim Pro, which has transformed how Muslims interact with their religion. The concept of the information and communication technology industry becomes relevant when discussing how applications like Muslim Pro can influence daily religious practices. For example, this application provides not only religious information, such as prayer schedules and the Qibla direction but also shapes new habits in worship that were previously only performed traditionally. Therefore, discussing concepts such as information technology and changes in religious practices provides deeper insights into how modern society, especially Muslims, adapts to technological developments in practicing their faith.

The information and communication technology (ICT) industry refers to a sector that utilizes technology to manage, process, and disseminate information and communication (Suryaningtyas, 2019). ICT encompasses computer hardware, software, communication networks, and the internet (Chien et al., 2021). This sector plays a vital role in enhancing productivity, operational efficiency, and innovation through the digitalization of business processes and services (David & Grobler, 2020). According to Manuel Castells (1996b), ICT is an essential component in the "network society," where information technology forms new social and economic structures through the rapid flow of information. Therefore, ICT not only affects how information is gathered and processed but also redefines social interactions and business practices, influencing how society, including Muslims, conducts daily life, particularly in religious activities.

Religious applications, such as Muslim Pro, have become an integral part of how Muslims practice their faith in the digital era. These technology-based religious applications introduce new ways to access religious information and perform worship. Technology-based religious applications provide various services, such as prayer schedules, Qibla directions, and a digital Qur'an, which make it easier for Muslims to perform religious duties more efficiently. However, the use of these applications may reduce direct involvement with religious communities and potentially replace the traditional role of scholars in offering spiritual guidance. According to Castells, this kind of information technology enables the creation of a "virtual reality," where social and religious interactions occur in digital space, replacing physical interactions (Castells, 1996a). Therefore, technology-based religious applications not only facilitate digital worship but also change the way Muslims understand and practice their religion, which may impact their relationships with communities and traditional values in the faith.

The ICT industry has undergone a significant shift from a production-based sector to one centered around information and technology, marked by the dominance of multinational companies such as Apple and Microsoft (Al-Rahmi et al., 2020). This shift reflects a profound change in industrial operations, which now adopt advanced technologies and e-commerce. Key factors driving this development include technological advancements, increased internet access, and globalization, all of which accelerate the widespread adoption of ICT (Ahmed et al., 2021). The Fourth Industrial Revolution has integrated ICT, big data, AI, and IoT, creating a more efficient and innovative digital industrial ecosystem. These developments signify a paradigm shift in how industries operate and adapt, with technology and information at the core of economic power and global influence (Pathak et al., 2019).

The changes in business models and consumer behavior demonstrate the significant impact of ICT and the digital industry. The shift from traditional business models to e-commerce enables companies to reach global markets more efficiently, while digital technology increases production flexibility and efficiency through automation (Capece et al., 2013). Consumer behavior has also changed with easier access to information and online transactions, where digital platforms facilitate smarter purchasing decisions (Karimi, 2021). Moreover, the ICT industry spans various sectors, including e-commerce, cybersecurity, and religious applications, which are increasingly digitalizing life and business (Paterson, 2019). These developments illustrate how ICT has transformed interactions between companies and consumers, creating new opportunities and challenges across multiple industries. The theory of religious change due to the ICT industry examines how the development of information and communication technology has influenced how people practice and understand their religion, especially through digitalization.

Manuel Castells, in his theory of the network society, explains that ICT has created a "virtual reality" where social interactions, including religious activities, occur in digital space. Castells emphasizes that information technology allows religious followers to practice religion online, replacing physical interaction and direct teaching from scholars (Castells, 1996b). Daniel Bell (1972) also made a significant contribution with his theory of post-industrial society, highlighting the shift from production-based industries to the information and technology sector. Bell noted that this change affects various aspects of life, including how people practice religion, where digitalization and e-commerce influence religious engagement and experiences.

With the presence of religious applications, such as digital prayer schedules or online Qur'an, religious followers can now access information and perform worship more easily, but this may also reduce direct involvement with the community and scholars. Therefore, the changes brought about by the ICT industry not only modify how religious followers perform worship but also redefine their relationship with religious communities and traditional values, creating new dynamics in religious practices in the digital era.

The Muslim Pro Application

Muslim Pro is a multifunctional application designed to help Muslims perform their religious duties more easily and accurately. The application offers various features such as prayer schedules, a Qibla compass, a complete digital Qur'an with translation and commentary, and fasting reminders during Ramadan (Muslim Pro, 2024). Since its initial launch in 2010, Muslim Pro has rapidly grown and become one of the most popular religious applications worldwide.

Figure 1. Muslim Pro Application Display on Playstore

Source: Playstore, 2024.

The history of Muslim Pro began when its developer, Bitsmedia, a technology company based in Singapore, identified the need for an application that could meet the spiritual needs of Muslims in the digital era. Over time, the application received updates and new features that further facilitated users in performing their religious activities (UAI, 2019). The current primary owner of the Muslim Pro application is Bitsmedia, which is also responsible for the development and maintenance of the application.

Muslim Pro offers various services that benefit Muslims worldwide and contribute to increasing religious literacy through technology. The application, which has more than 100 million downloads on Playstore as of 2024, demonstrates how users can utilize digital technology to support religious practices in daily life. Muslim Pro's success in reaching a global user base also reflects the dynamics of the ever-evolving ICT industry, particularly in the realm of religious applications, which play an important role in fulfilling the spiritual needs of modern society.

Industry in the Muslim Pro Application

The industry in Muslim Pro encompasses various aspects, from the use of internet data to monetization through advertisements and premium subscriptions. One of the main drivers of the application's success is the global growth of smartphone users, allowing millions of people in different countries to access the application. Muslim Pro leverages the internet and data to provide fast and reliable services, such as accurate prayer schedules based on the user's location and continuously updated digital Qur'an content. By effectively utilizing technology, Muslim Pro has successfully become one of the leading religious applications serving the spiritual needs of Muslims worldwide.

The industry generates significant profits. By 2024, users had downloaded Muslim Pro more than 100 million times, producing billions of rupiah annually, mostly from in-app advertisements (UAI, 2019). In addition, premium subscriptions, which offer additional features like exclusive content and an ad-free experience, also contribute to Muslim Pro's revenue. While 90 percent of Muslim Pro's income comes from advertisements, the rest is derived from premium subscriptions and e-commerce, further strengthening the application's position as a leader in the religious app industry.

People choose to use Muslim Pro for various reasons, including the large number of other users and positive reviews on social media, which enhance the application's reputation. Muslim Pro's popularity among the global Muslim community demonstrates how an application can build a large and loyal user base, which in turn strengthens its market position.

Figure 2. Muslim Pro Application Reviews from Users
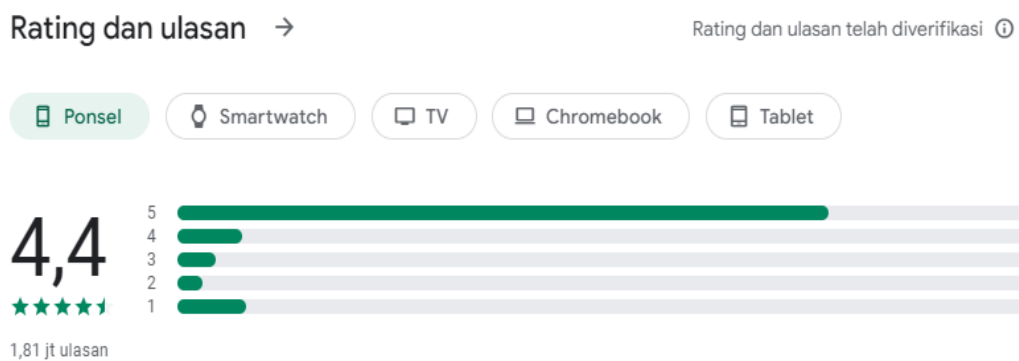
Source: Playstore, 2024.

Figure 2 shows a rating score of 4.4. A high score and categorized as satisfactory by Google Play Store standards. Ratings between 3.0 and 5.0 are considered satisfactory on the Play Store. A good reputation and a strong community are the main keys to maintaining and improving Muslim Pro's position in the religious app market.

Other factors, such as optimization in the App Store, word-of-mouth, and careful marketing strategies, also support Muslim Pro's success. With an increasing number of downloads, Muslim Pro has set new standards for other religious applications, and Bitsmedia is committed to continuing to develop the app to meet the diverse spiritual and lifestyle needs of Muslims around the world. This success illustrates how the industrialization of religious services through technology is not only financially beneficial but also has a broad social impact, providing easier and more practical access for Muslims to practice their faith in the digital era.

Changes in Religious Practices Due to Muslim Pro

Muslim Pro exemplifies the industrialization of religious services in the era of post-industrial society, where services previously offered only by religious leaders and authorities, such as mosques and Islamic boarding schools, have now transformed into a profitable industry. In the past, religious services such as prayer time reminders, Quran readings, and information on the Qibla were provided for free by communities or religious institutions (Azra et al., 2010).

However, with the development of information and communication technology (ICT), these services have been industrialized. Companies like Bitsmedia, which developed Muslim Pro, have successfully monetized the spiritual needs of Muslims through paid apps and advertisements. This transformation demonstrates that technology has changed how Muslims perform their worship, merging religious aspects with commercialization.

The rapid growth of religious service applications like Muslim Pro signifies an increasing dependence on technology for spiritual needs. However, it also presents challenges related to commercialization and the changing meanings of traditional religious practices. While applications like Muslim Pro provide unprecedented convenience and accessibility in religious practices, reliance on technology also poses significant challenges. One major challenge is the commercialization of religious services, which can alter how Muslims engage in worship. According to Shelton et al. (2023), an increasing number of religious applications incorporate advertisements or subscription options, which potentially shift the focus from a purely spiritual experience to a more commercialized experience.

Figure 3. User review of Muslim Pro feeling disturbed by the presence of ads in the app

Source: Play Store, 2024

User reviews of Muslim Pro confirm Shelton's findings. In Image 3, a user expressed disturbance due to the presence of ads, stating that they preferred the earlier version of the app. Moreover, researchers must consider the potential shift in the meaning of traditional religious practices. A study by Tsuria & Yadlin-Segal (2021) indicates that the use of religious applications can alter worship dynamics, with many users reporting feelings of disconnection from their religious community and a decline in deeper religious practices. For instance, practices such as attending the mosque for congregational prayers or participating in local religious studies have decreased due to the convenience offered by the application, allowing individual practices at home.

Figure 4. User review related to changes in religious practices due to Muslim Pro
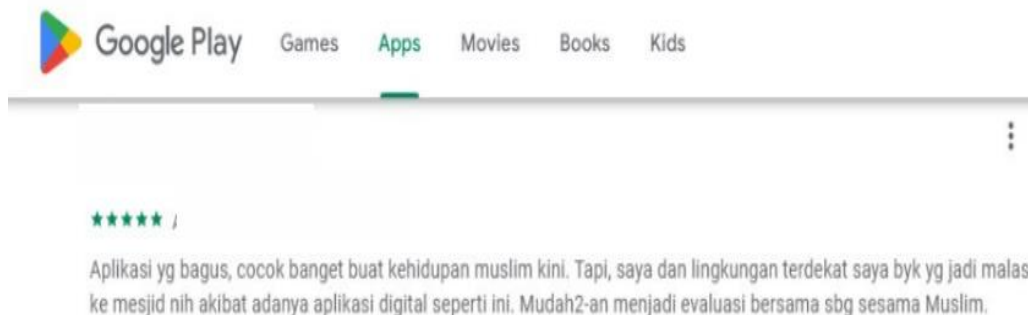
Source: Play Store, 2024

This research also confirms the study by Tsuria & Yadlin-Segal, as a Muslim Pro user, reviewed how the app changed their religious activities. The user in Image 4 shared that they became "lazy" to worship at the mosque due to the existence of the application.

Thus, there is an urgent need to reevaluate the role of technology in religious life, particularly how applications like Muslim Pro influence the ways Muslims practice their spirituality. This evaluation is essential to ensure that changes in religious practices driven by technology do not compromise the profound essence of religion and the important community interactions.

The use of applications like Muslim Pro in worship has significant negative impacts, especially on the depth of spiritual practices. A study by Evolvi (2021) noted that while religious applications provide convenience, some users feel that their spiritual experiences become shallower compared to traditional practices. This shallowness occurs because the aspects of worship that typically foster intimacy and deep reflection often receive less attention in digital formats. For example, rituals such as t*adabbur* (Quranic meditation) and *tafakur* (reflection) often do not

receive the same focus in application use, as attention frequently shifts to practical features like prayer time reminders or daily prayer readings.

Therefore, the challenges and negative impacts of using applications in worship highlight the importance of balancing technological convenience with deep spiritual values and social interactions in religious practices. A careful evaluation is necessary to ensure that application use does not compromise critical aspects of spiritual and community experiences.

The Impact of Digitalization on Worship: Challenges in the Era of Religious Applications

This research shows that industrialization in the Muslim Pro application not only enhances accessibility for Muslims to perform worship but also brings challenges in maintaining the meaning and spiritual depth of traditional religious practices. Muslim Pro changes how Muslims engage in worship by offering various digital services, such as prayer schedules, digital Quran access, and Qibla directions, which they can access anytime and anywhere. Although many users recognize this convenience, the research finds that dependence on this application can diminish direct interaction with religious communities and lower the spiritual quality typically gained through traditional worship practices. For example, some users report a decline in their attendance at mosques or participation in community religious activities due to the comfort provided by the application. Thus, while Muslim Pro significantly contributes to technological advancements in religious services, this research emphasizes the importance of evaluating and balancing technological convenience with deep spiritual values in the worship practices of Muslims.

The findings of this research reflect how the development of information and communication technology (ICT) has changed how religious people practice and understand their religion in the context of digitalization (Plepys, 2002). The theory of religious change due to ICT industrialization, as outlined by Manuel Castells in his theory of the networked society, demonstrates that digitalization has created a virtual reality where social interactions, including religious activities, occur in digital spaces. Castells emphasizes that information technology enables religious people to perform religious practices online, which aligns with this research's findings regarding the increased use of religious applications, such as digital prayer schedules and online Quran access. Daniel Bell, through his theory of post-industrial society, highlights the shift towards the information and technology sectors, which significantly impacts how people interact and perform religious activities.

The findings of this research also support Bell's view, showing that digitalization has transformed religious engagement from direct physical interactions with scholars and communities to interactions that center more on digital devices and online platforms. This transformation illustrates how technological changes not only modify how worship practices occur but also introduce new challenges for maintaining connections with religious communities. This dynamic creates new challenges for religious individuals, where worship practices become more individualistic and detached from physical communities, thereby redefining their relationships with religious communities and traditional values in the digital era.

Previous research regarding the impact of the information and communication technology (ICT) industry on religious practices has largely focused on how digitalization facilitates access to religious information but has less discussed its negative implications for social relationships and community engagement (Bolaji & Jimoh, 2023; Pathak et al., 2019; Suleiman et al., 2020). This research presents a different perspective by highlighting that while digitalization offers convenience, it can also reduce direct interaction with communities and scholars, ultimately weakening social cohesion within religious communities. Thus, this research demonstrates that technological changes not only bring convenience but also serious challenges in maintaining the integrity and solidarity of religious communities in the digital era.

Given the findings of this research, which indicate the negative impacts of digitalization on community engagement, strategic actions are necessary to preserve integrity and social connectivity in religious practices in the digital era. Religious institutions, governments, and educational institutions play essential roles in formulating policies that support the strengthening of religious communities both offline and online. Religious institutions can develop programs that integrate technology with intensive social interaction, such as online religious discussion forums followed by face-to-face meetings. Governments can facilitate digital infrastructure that supports religious activities without diminishing the importance of direct interaction, such as providing safe platforms for religious discussions. Educational institutions, in turn, can teach balanced digital literacy, emphasizing the importance of physical community roles in supporting spiritual experiences. Therefore, collaboration among institutions becomes crucial to ensuring that religious digitalization enriches, rather than weakens, social engagement and religious values in society.

The following are examples of solutions implemented through institutional approaches to address the negative impacts of digitalization on religious practices. The Indonesian Ulema Council (MUI) has launched several important initiatives, such as the program "Standardizing MUI Preachers Equipped with Up-to-Date Dawah Insights in the Digital Era" to strengthen preachers' capacities in facing challenges in digital dawah (Junaidi, 2024). Additionally, MUI has established an institution focused on overseeing Islamic content in print, electronic, and gadget media, temporarily named the Islamic Content Analysis and Advocacy Agency in Print and Electronic Media (Niam, 2022).

They take this step to ensure that Islamic content circulating in various media remains consistent with religious teachings and does not mislead. Nahdlatul Ulama (NU) has developed the "NU Mobile" application as an alternative to ensure that religious learning through digital platforms adheres to correct teachings (Fauziyah, 2020). This application provides access to various trusted religious learning resources that align with NU traditions, helping the faithful maintain the quality of worship and understanding of religion amid the onslaught of digital information. Muhammadiyah has also taken concrete steps by developing a more structured digital architecture through the "Consolidation of Muhammadiyah Media Work" (Ulinuha, 2024). Haidar Nasir, the Chairperson of Muhammadiyah, emphasizes the importance of intensifying digital dawah to reach the faithful in this technological era. Muhammadiyah focuses on creating applications that support Da'wah and religious education to remain relevant and effective in the digital era (Nashir, 2021).

However, no solutions specifically address negative impacts such as decreased motivation to worship at mosques or diminished focus on religious practices due to the use of religious applications. These challenges require further approaches from religious institutions to understand and holistically address these impacts. Through these institutional efforts, religious leaders and institutions can overcome the challenges of digitalization in religious practices, allowing the faithful to worship with sincerity and maintain spiritual connections in an increasingly complex digital era. However, no specific solutions currently exist to tackle traditional worship challenges arising from the digital religious application industry.

CONCLUSION

Digitalization in the religious application industry, which has long been considered a solution for expanding access and enhancing religious practices, has actually created new problems in how believers perform worship and interact with their communities. This research reveals that digitalization in the religious application industry faces serious challenges. One major issue is the decline in the quality of interactions and concentration during worship due to the uncontrolled use of religious applications. The study shows that religious applications often do not replace direct engagement with the community and religious leaders; instead, they create emotional distance and a lack of depth in religious practices. Furthermore, these applications often fail to adequately consider the contextualization of religious teachings, which can lead to deviations from traditional doctrines.

The findings also identify two main issues causing these negative impacts: first, the rapid digitalization in the religious application industry has occurred without sufficient oversight and education regarding its use; second, there is a low awareness of how technology can affect spiritual quality and relationships with religious communities. These impacts include a decrease in motivation to worship in physical places of worship and a reduction in concentration during religious practices, ultimately leading to a lack of connection and participation in religious communities.

Therefore, this research indicates that although digitalization in the religious application industry offers many conveniences, it also poses significant challenges to religious practices that require attention and solutions from religious institutions and society to ensure that technology does not diminish the quality and depth of religious experiences.

However, this study has limitations regarding data scope, as it focuses solely on analyzing digital religious applications without considering the direct experiences of users in everyday religious practices. Direct experiences from users of religious applications are crucial to understanding the actual impact of these applications on their motivation and involvement in worship practices. Data derived only from application studies without integrating user perspectives may provide an incomplete picture of how these applications affect the quality of religious experiences. Therefore, it is important to combine quantitative data on application usage with in-depth interviews or surveys from users to obtain a more holistic view of the applications' influence on religious practices.

In line with this, future research should focus on solutions to address the decline in religious motivation due to the digitalization of religious applications. Research that involves direct user experiences and a thorough evaluation of the impact of applications on worship motivation will provide more comprehensive insights. With this approach, researchers hope to discover more effective strategies to maintain the quality and concentration of religious practices in the digital age.

REFERENCES

Ahmed, Z., Nathaniel, S. P., & Shahbaz, M. (2021). The criticality of information and communication technology and human capital in environmental sustainability: evidence from Latin American and Caribbean countries. *Journal of Cleaner Production*, *286*, 125529.

Al-Rahmi, W. M., Alzahrani, A. I., Yahaya, N., Alalwan, N., & Kamin, Y. Bin. (2020). Digital communication: Information and communication technology (ICT) usage for education sustainability. *Sustainability*, *12*(12), 5052.

Annur, C. M. (2024). Ini Media Sosial Paling Banyak Digunakan di Indonesia Awal 2024. *Databoks. Katadata. Co. Id.* https://databoks.katadata.co.id/datapublish/2024/03/01/ini-media-sosial-paling-banyak-digunakan-di-indonesia-awal-2024

Atton, C. (2003). Reshaping Social Movement Media for a New Millennium. *Social Movement Studies*, *2*(1), 3–15. https://doi.org/10.1080/1474283032000062530

Azra, A., Afrianty, D., & Hefner, R. W. (2010). Pesantren and madrasa: Muslim schools and national ideals in Indonesia. In *Schooling Islam* (pp. 172–198). Princeton University Press.

Bell, D. (1972). The cultural contradictions of capitalism. *Journal of Aesthetic Education*, *6*(1/2), 11–38.

Bolaji, H. O., & Jimoh, H. A. (2023). Usability and utilization of ICT among educational administrators in secondary students in public school. *Indonesian Journal of Educational Research and Technology*, *3*(2), 97–104.

Capece, G., Calabrese, A., Di Pillo, F., Costa, R., & Crisciotti, V. (2013). The impact of national culture on e-commerce acceptance: The Italian case. *Knowledge and Process Management*, *20*(2), 102–112.

Castells, M. (1996a). *Economy, Society, and Culture The Information Age The Rise of the Network Society Table of Contents for Volumes II and III of Manuel Castells ' The 5 Globalization, Identification, and the State : A Powerless State or a 6 Informational Politics and th: Vol. I.* https://doi.org/10.1002/9781444318234.ch5

Castells, M. (1996b). *The Information Age* (Vol. 98). Oxford Blackwell Publishers.

Chien, F., Pantamee, A. A., Hussain, M. S., Chupradit, S., Nawaz, M. A., & Mohsin, M. (2021). Nexus between financial innovation and bankruptcy: evidence from information, communication and technology (ICT) sector. *The Singapore Economic Review*, 1–22.

David, O. O., & Grobler, W. (2020). Information and communication technology penetration level as an impetus for economic growth and development in Africa. *Economic Research-Ekonomska Istraživanja*, *33*(1), 1394–1418.

Eskicumali, A., Arslan, S., & Demirtas, Z. (2015). Utilization of Information and Communication Technologies as a Predictor of Educational Stress on Secondary School Students. *Turkish Online Journal of Educational Technology-TOJET*, *14*(2), 241–246.

Evolvi, G. (2021). Religion, new media, and digital culture. In *Oxford research encyclopedia of religion*.

Fauziyah, A. (2020). NU Luncurkan Aplikasi NU Mobile. *Digination.Id/*. https://www.digination.id/read/01522/nu-luncurkan-aplikasi-nu-mobile

Hankel, A., Heimeriks, G., & Lago, P. (2018). A systematic literature review of the factors of influence on the environmental impact of ICT. *Technologies*, *6*(3), 85.

Hine, C. (2020). *Ethnography for the internet: Embedded, embodied and every day*. Routledge.

Idris, M. (2020). Peace resolution in education and application of information and communication technology. *International Journal of Advanced Science and Technology*, *29*(6), 3349–3358. https://api.elsevier.com/content/abstract/scopus_id/85084478761

Junaidi. (2024). Peserta Standardisasi Dai MUI Dibekali Wawasan Dakwah Terkini di Era Digital. *MUI or Id*. https://mui.or.id/baca/berita/peserta-standardisasi-dai-mui-dibekali-wawasan-dakwah-terkini-di-era-digital

Karimi, J. (2021). The role of entrepreneurial agility in digital entrepreneurship and creating value in response to digital disruption in the newspaper industry. *Sustainability (Switzerland)*, *13*(5), 1–26. https://doi.org/10.3390/su13052741

Lune, H., & Berg, B. L. (2017). *Qualitative research methods for the social sciences*. Pearson.

Miles, M. B., & Huberman, A. M. (2013). *Qualitative Data Analysis: An Expanded Sourcebook*. Sage Publications, Inc.

Muslim Pro. (2024). About Muslim Pro. *Muslim Pro*. https://www.muslimpro.com/en/about-us

Nashir, H. (2021). Mengintensifkan Dakwah Digital. *Suara Muhammadiyah*. https://web.suaramuhammadiyah.id/2021/08/26/mengintensifkan-dakwah-digital/

Niam, M. (2022). MUI akan Awasi Aplikasi Konten Islami. *NU Online*. https://nu.or.id/nasional/mui-akan-awasi-aplikasi-konten-islami-0AiT7

Paterson, T. (2019). Indonesian cyberspace expansion: a double-edged sword. *Journal of Cyber Policy*, *4*(2), 216–234. https://doi.org/10.1080/23738871.2019.1627476

Pathak, S., Raja, R., Sharma, V., & Ambala, S. (2019). ICT utilization and improving student performance in higher education. *International Journal of Recent Technology and Engineering*, *8*(2), 5120–5124.

Pepys, A. (2002). The grey side of ICT. *Environmental Impact Assessment Review*, *22*(5), 509–523.

Rahim, R. A. A., & Dilawati, R. (2022). Causes and Impacts of Early Marriage: A Phenomenological Study in the Cimarel Hamlet Community, West Bandung Regency. *TEMALI: Jurnal Pembangunan Sosial*, *5*(1), 29–44.

Riyanto, A. D. (2024). Hootsuite (We are Social): Data Digital Indonesia 2024. *We Are Social*. https://andi.link/hootsuite-we-are-social-data-digital-indonesia-2024/

Senjaya, W. (2018). Information and communication technology awareness of Indonesian high school students. In *Global Journal of Engineering Education* (Vol. 20, Issue 3, pp. 217–223). https://api.elsevier.com/content/abstract/scopus_id/85056750118

Setia, P. (2020). Islamic-Buzzer dan Hoaks: Propaganda Kilafah Oleh Eks HTI Kota Bandung Di Jawa Barat. *Skripsi*. http://digilib.uinsgd.ac.id/33053/

Shelton, T., Zook, M., & Graham, M. (2023). The technology of religion: Mapping religious cyberscapes. *The Professional Geographer*, *64*(4), 602–617.

Sobirovna, D. K., & O'rinboyevich, A. A. (2019). Directions for increasing product competitiveness in industrial enterprises. *Asian Journal of Multidimensional Research (AJMR)*, *8*(7), 29–35.

Suleiman, M. M., Yahya, A. T., & Tukur, M. (2020). Effective utilization of ICT tools in higher education. *Development*, *2*(5).

Suryaningtyas, V. W. (2019). Translation Learning Enrichment Using Smart Application Creator 3.0: An Attempt to Design a Mobile Application in Translation for Tourism Purpose Course. In *Proceedings - 2019 International Seminar on Application for Technology of Information and Communication: Industry 4.0: Retrospect, Prospect, and Challenges, iSemantic 2019* (pp. 542–547). https://doi.org/10.1109/ISEMANTIC.2019.8884273

Tsuria, R., & Yadlin-Segal, A. (2021). Digital religion and global media: Flows, communities, and radicalizations. *Handbook of Global Media Ethics*, 157–175.

UAI. (2019). Kisah Muslim Pro Jadi Aplikasi Favorit Umat Islam dengan Biaya Pemasaran Nol. *Universitas AL-Azhar Indonesia*. https://entrepreneur.uai.ac.id/kisah-muslim-pro-jadi-aplikasi-favorit-umat-islam-dengan-biaya-pemasaran-nol/

Ulinuha, M. T. (2024). Arsitektur Digitalisasi dan Konsolidasi Kerja Media Muhammadiyah. *Muhammadiyah Jawa Tengah*. https://pwmjateng.com/arsitektur-digitalisasi-dan-konsolidasi-kerja-media-muhammadiyah/

Zhang, C., Khan, I., Dagar, V., Saeed, A., & Zafar, M. W. (2022). Environmental impact of information and communication technology: Unveiling the role of education in developing countries. *Technological Forecasting and Social Change*, *178*, 121570.