

# **DIGITALISATION IN RELIGIOUS TOURISM TOWARDS REALISING INDUSTRY REVOLUTION 5.0: A SYSTEMATIC REVIEW**

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## **ABSTRACT**

Religious tourism is becoming an important sector within the tourism industry. The integration of digital technologies has opened up new possibilities for religious tourism businesses, allowing them to provide a variety of engaging experiences while serving as essential resources for entertainment, education, accessibility, and cultural preservation. This study offers a systematic review of existing research on religious tourism, with a particular emphasis on the role of digitalisation in line with the Industry Revolution 5.0 and SDGs agendas. Adhering to the ROSES reporting standards and drawing from prestigious databases such as Scopus, Web of Science, and Google Scholar, this research provides a thorough analysis of digitalisation's impact on religious tourism. Through methodical search techniques, 30 articles that meet the specific quality criteria were selected. The study identified three main themes (Type, Tools, Impact) and 12 sub-themes, illuminating how digitalisation contributes to the goals of Industry Revolution 5.0 and supports the achievement of the SDGs.

**Keywords:** Systematic Review; ROSES; Digitalisation; Religious Tourism; Industry Revolution 5.0.

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## **1. INTRODUCTION**

Religious tourism refers to travel and tourism activities that are motivated by religious beliefs, practices, or affiliations such as visiting cultural heritage sites, sacred locations, and pilgrimage sites, as well as observing religious celebrations and activities of religious significance. Religious tourism is driven by a range of objectives, such as participating in religious ceremonies, visiting holy sites, acquiring understanding of different faiths, or seeking personal spiritual growth (Firdaus & Rahmat, 2019). Religious pilgrims predominantly frequent mosques, churches, temples, and historical places. Religious tourism and Islamic tourism differ in their specific areas of interest. Islamic tourism strictly follows the guidelines of Shariah-compliant Muslim and halal travel, as stated in the Quran and Sunnah (Allal-Chérif, 2022; Battour, 2018). Therefore, the essential elements of religious tourism include visits to any sacred or religious sites, applicable to all travellers.

Research on religious tourism is on the rise, with various sources exploring different facets of the field, such as its opportunities and challenges, growth trends, definitions, and the increasing role of digital technology (Heydari et al., 2018; Allal-Chérif, 2022; ). These studies indicate that religious tourism, akin to regular leisure activities, has the potential to drive the development of both rural and urban areas, especially those with religious historical sites. The influx of tourists from around the world suggests that religious tourism can enhance social cohesion, provide spiritual comfort, stimulate economic activity, and improve the local environment (Lin et al., 2021).

The correlation between religious tourism and digitalisation has become more robust, since advancements in digital technology have significantly enhanced and transformed the religious tourist encounter. The integration of digitalisation in religious tourism has had a profound influence on various perspectives of the industry, including the dissemination of information, convenience of access, communication, and tourist engagement (Chatzopoulou, 2022). Through the utilisation of digitisation, religious places such as mosques, churches, and temples can be sold, managed, maintained, and constructed more efficiently, going beyond the promotion of heritage architecture. Digitalisation fosters innovation and economic expansion by stimulating creativity (Abdullah et al., 2021). Therefore, it plays a vital role in facilitating and preserving cultural property, while also serving as a strategic tool for sustaining, promoting, and attracting tourists. Moreover, digitalisation enables passengers to acquire up-to-date information and subsequently disseminate it to the wider public (Hassan et al., 2022; Wibowo & Hariadi, 2024).

The intersection of religious tourism and digitisation has led to the emergence of many online platforms and services specifically designed to meet the requirements of religious travellers. These platforms often offer a wide range of resources and tools for arranging and booking religious pilgrimages. This encompasses comprehensive information regarding the most coveted travel destinations, recommendations for accommodations and recreational pursuits, as well as guidance to fully engage with diverse religious and cultural experiences (Agustini et al., 2023). Digitalisation has made it easier for religious travellers to connect with similar folks through online forums and social media communities.

Using technology in the tourism business is beneficial for sharing information about tourism activities in today's technological era, as well as for utilising new advanced tools for the

humanities and social sciences (Allal-Chérif, 2022). The current technologies used today include 3D augmented reality, virtual reality, chatbots, social media, mobile applications, websites, smart sensors, software, Global Positioning Systems (GPS), and Geographic Information Systems (GIS). These technologies have been proven useful in making travel easier and improving our understanding of historical objects, with the purpose of achieving the objectives of Industrial Revolution 5.0 (IR5.0).

IR5.0 is a novel manufacturing model that emphasises the interaction between humans and machines. It envisions the integration of robotics, particularly industrial robots, with advanced artificial intelligence and cognitive computing technologies to enhance organisational efficiency (Maddikunta et al., 2022). The advent of IR5.0 is marked by the use of AI-driven technologies that automate monotonous tasks, allowing individuals to allocate their time towards more fruitful and value-enhancing endeavours (Maddikunta et al., 2022).

The IR5.0 presents new opportunities for enriching religious tourism by fostering a more human-centric integration between advanced technologies and spiritual experiences. IR5.0 emphasizes meaningful collaboration between humans and intelligent systems such as artificial intelligence, virtual and augmented reality, and smart applications (Allal-Chérif, 2022). These technologies enhance accessibility to sacred sites through virtual tours, facilitate efficient management of religious destinations, and enable real-time dissemination of culturally and spiritually relevant information (Hajirasouli et al., 2021; Chatzopoulou, 2022). For many, especially those unable to travel physically due to financial or physical constraints, these innovations offer alternative pathways to connect with spiritual heritage (Subawa et al., 2021; Agustini et al., 2023).

The convergence of religious tourism and digitalisation (i.e.- IR5.0) has created several opportunities for engaging, illuminating, and forming connections with travellers. As a result, the way people view religious sites has undergone significant changes, making it easier for them to access, communicate with, and engage with these sites virtually (Hajirasouli et al, 2021; Sawari et al., 2024; Subawa et al., 2021). With the ongoing advancement of digital technologies, it is expected that the incorporation of digitalisation into religious tourism will continue to develop, creating new possibilities for religious institutions and tourists to form significant connections and engage in meaningful ways.

Therefore, it is crucial to thoroughly examine the type of digitalisation implemented in religious tourism and its potential future development as described in the current literature. Given this, the main goal of this research project is to conduct a thorough systematic evaluation of studies focused on religious tourism, with a specific focus on digitalisation—a recognised strategy in line with the pursuit of IR 5.0 and the SDGs agenda. This study seeks to provide significant insights into the current forms of digitalisation used in religious tourism, including its implications and future potential in this field.

## **2. METHODOLOGY**

## **2.1. Research Design**

A systematic review was performed utilising the Scopus, Web of Science, and Google Scholar databases, employing the ROSES approach. The systematic review was conducted using the PICO technique, involving the Systematic Literature Review (SLR) which identified, screened, assessed the eligibility of, appraised the quality of, and analysed the selected publications.

## **2.2. ROSES**

The SLR was influenced by the ROSES framework developed by Gusenbauer and Haddaway (2020). ROSES served as a guiding tool during the SLR process, commencing with the formulation of research inquiries utilizing the PICO technique (problem or population, interest, and context). The subsequent procedure entailed formulating and implementing a methodical approach for retrieving documents, which consisted of three distinct stages: identification, screening, and eligibility assessment. Subsequently, a thorough assessment was carried out utilizing the revised criteria established by Hong et al. (2018) to guarantee the excellence of each chosen article prior to its inclusion. Subsequently, the chosen papers underwent data extraction and analysis. The data extraction method was in accordance with the main research topic, and the gathered data was evaluated using thematic synthesis, i.e., a qualitative way of synthesising data. In order to ensure alignment with the aims of the review, the writers followed the guidelines of the review and thoroughly assessed several methodologies as deemed suitable.

## **2.3. Formulation of Research Questions**

In this study, the PICO mnemonic was used, focusing on three main elements: (i) Religious tourism (Population): Type and Tools, (ii) Impact (Interest) and (iii) Digitalisation (Context). These elements were used to develop the primary research question: “What are the types, tools, and impacts of digitalisation in religious tourism in relation to achieving the goals of Industry Revolution 5.0?” This approach helped in identifying contributions related to the themes and sub-themes based on the stated objectives.

### **2.3.1. Resource**

This study utilised three primary journal databases—Scopus, Web of Science (WOS), and Google Scholar—for citation purposes. Additionally, articles related to social sciences, computer science, and art and humanities were accessible for download.

### **2.3.2. Systematic Review Process**

The systematic search process involved four key steps: identification, screening, eligibility assessment, and quality appraisal. Figure 1 provides a diagram illustrating this systematic review process.

### 2.3.3. Identification

The systematic review process began with a series of search queries across the Scopus, Web of Science, and Google Scholar databases. Keywords were identified through related terms and variations obtained from an online thesaurus, focusing on Digitalisation, Heritage, and Tourism. Following this, the identification phase involved entering keywords specific to the study. Table 1 below lists the keywords searched and those slated for the next screening stage.

### 2.3.4. Screening

The next step was the screening process. To avoid bias, two researchers took part in the search and query procedure (Delgado-Rodríguez and Sillero-Arenas, 2018). During this stage, the number of articles was reduced from 266 to 86 based on the inclusion and exclusion criteria (see Table 2). All selected articles were then screened using automatic sorting functions based on Article Type, Access, Language, Timeline, Country, and Subject Area. Subsequently, 15 duplicates were removed, leaving 41 articles that were deemed eligible.

**Table 1: Keywords and search information strategy**

Databases	Keyword used
Scopus	TITLE-ABS-KEY (("Digitalization" OR "Technology" OR "Computerized" OR "Digitally") AND ("Mosque" OR "church" OR "Holy place" OR "shul" OR "cathedral" OR "place-of-worship" OR "shrine" OR "synagogue" OR "tabernacle" OR "temple" OR "house of prayer") AND ("Tourism"))
Web of Science	ALL=((("Digitalization" OR "Technology" OR "Computerized" OR "Digitally") AND ("Mosque" OR "church" OR "Holy place" OR "shul" OR "cathedral" OR "place-of-worship" OR "shrine" OR "synagogue" OR "tabernacle" OR "temple" OR "house of prayer") AND ("Tourism"))
Google Scholar	Allintitle:(("Digitalization" OR "Technology" OR "Computerized" OR "Digitally")("Mosque" OR "church" OR "Holy place" OR "shul" OR "cathedral" OR "place-of-worship" OR "shrine" OR "synagogue" OR "tabernacle" OR "temple" OR "house of prayer")("Tourism")("Brunei" OR "Burma" OR "Myanmar" OR "Cambodia" OR "Timor-Leste" OR "Indonesia" OR "Laos" OR "Malaysia" OR "Philippines" OR "Singapore" OR "Thailand" OR "Vietnam")("English"))

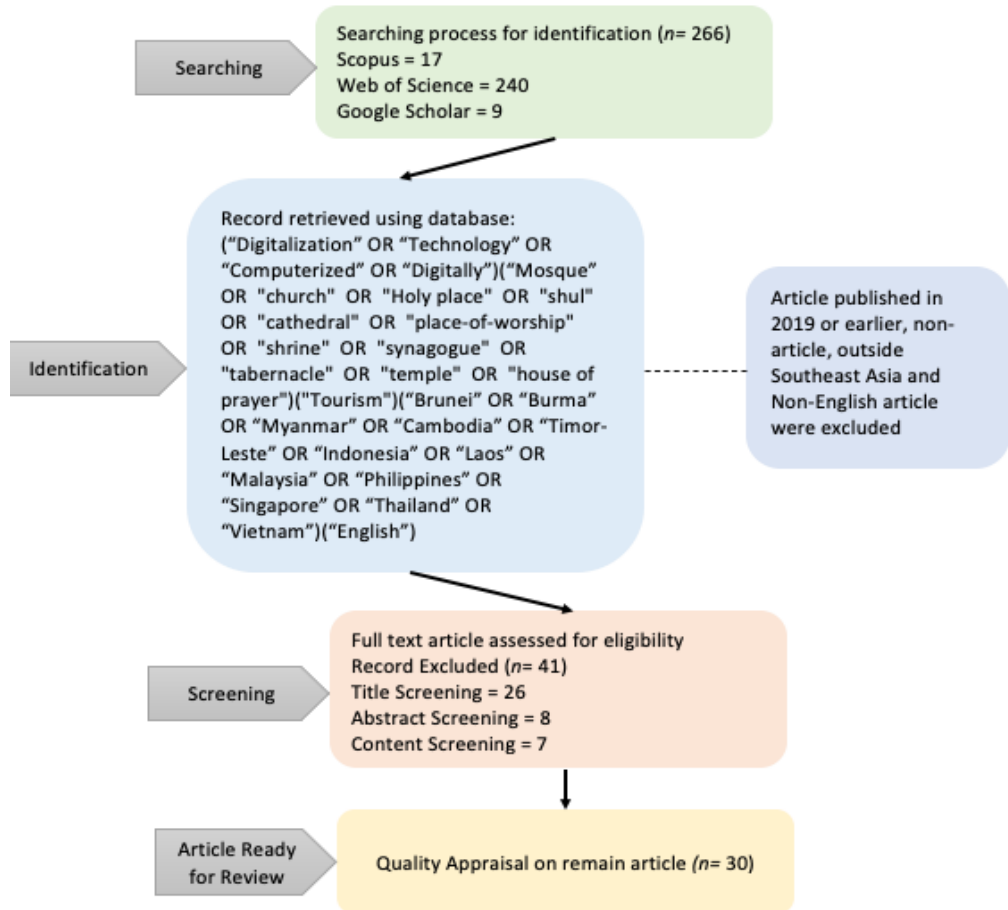
*Source:* Source: Researcher's Own.

**Table 2: The inclusion and exclusion criteria**

Criterion	Inclusion	Exclusion
Article Type	Journal Article	Other than journal article
Access	Open Access	Restricted
Language	English	Other than English language
Timeline	Between 2019 – 2024	<2019
Country	Southeast Asia (11 Country)	Other than Southeast Asia
Subject Area	Social Sciences, Computer Science, Art and Humanities	Other than Social Sciences, Computer Science, Art and Humanities

*Source:* Source: Researcher's Own.

**Figure 1:** The process flow diagram or review procedure



*Source:* Source: Researcher's Finding.

### 2.3.5. Eligibility

This is the stage where the authors manually reviewed the remaining articles to ensure that they meet the established criteria. This involved examining the titles, abstracts, and contents of the articles. As a result, several articles were excluded due to the review's focus and unclear methodology. Specifically, 26 articles were discarded after title screening, eight after abstract screening, and seven after content screening. Only 30 articles advanced to the quality appraisal stage.

### 2.3.6. Quality Appraisal

Finally, the Mixed-Method Appraisal Tool (MMAT) was utilised to evaluate the quality of the selected papers (Hong et al., 2018). This phase also involved identifying and analysing the methodologies used in the selected studies.

### 2.3.7. Data Extraction and Analyses

The review employed various research designs and used thematic analysis to determine the best methods for integrating different approaches through qualitative synthesis. This approach highlights the flexibility of thematic synthesis in combining data from diverse research designs (Flemming et al., 2019). Thematic analysis focuses on identifying patterns and connections in the data from previous research. The thematic synthesis process involved reviewing the dataset, creating initial codes, and organising the data to generate themes using inductive coding (Kiger and Varpio, 2020). The researchers examined each article, extracted relevant information, and developed themes based on commonalities and connections. These themes encompassed the entire dataset and were analysed using MMAT, which evaluates data based on a "yes, no, or cannot tell" scoring system for qualitative, quantitative, and mixed methods. The final analysis identified three main themes and 12 sub-themes. These were reviewed for relevance and validated by two experts in qualitative synthesis and community development, who agreed on their relevance to the research questions.

**Table 3:** Criteria employed to assess the rigor of the methodology and analysis of selected articles

Research Design	Assessment Criteria
Qualitative	QA1: Is the qualitative approach appropriate to answer the research question?
	QA2: Are the qualitative data collection methods adequate to address the research question?
	QA3: Are the findings adequately derived from the data?
	QA4: Is the interpretation of results sufficiently substantiated by data?
	QA5: Is there coherence between the qualitative data sources, collection, analysis, and interpretation?
Quantitative (descriptive)	QA1: Is the sampling strategy relevant to address the research question?
	QA2: Is the sample representative of the target population?
	QA3: Are the measurements appropriate?
	QA4: Is the risk of non-response bias low?
	QA5: Is the statistical analysis appropriate to answer the research question?
Quantitative (non-randomised)	QA1: Are the participants representative of the target population?
	QA2: Are the measurements appropriate in terms of outcome and intervention (or exposure)?
	QA3: Are there complete outcome data?
	QA4: Are the confounders accounted for in the design and analysis?
	QA5: During the study period, was the intervention administered (or exposure occurred) as intended?
Mixed methods	QA1: Is there an adequate rationale for using a mixed methods design to address the research question?
	QA2: Are the different components of the study effectively integrated to answer the research question?
	QA3: Are the outputs of the integration of qualitative and quantitative components adequately interpreted?

QA4: Are the divergences and inconsistencies between the quantitative and qualitative results adequately addressed?

QA5: Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?

**Source:** Shafrill et al. (2021).

**Table 4:** Result of the quality assessment

No	Study	Research Design	QA 1	QA 2	QA 3	QA 4	QA 5	Number of criteria fulfilled	Inclusion in the review
1	Agarwal et al. (2021)	QN(DC)	√	√	√	√	√	5/5	√
2	Agustini et al. (2023)	QN(DC)	√	√	√	√	√	5/5	√
3	Al-Makhadmah (2020)	QL	√	√	X	X	√	3/5	√
4	Alamanda et al. (2020)	QL	√	√	√	√	√	5/5	√
5	Allal-Chérif (2022)	QL	√	√	√	√	√	5/5	√
6	Alomari et al. (2020)	QN(DC)	√	√	√	√	√	5/5	√
7	Angkananon et al. (2019)	QN(DC)	√	√	√	√	√	5/5	√
8	Arasli et al. (2021)	QN(DC)	X	√	√	√	√	4/5	√
9	Balakrishnan (2020)	QL	√	√	√	√	√	5/5	√
10	Chatterjee and Dsilva (2021)	QN(DC)	√	√	√	√	√	5/5	√
11	Destiana and Kismartini (2020)	QL	√	√	√	√	√	5/5	√
12	Faraj and Chible (2020)	QN(DC)	√	√	√	√	√	5/5	√
13	García-Haro et al. (2024)	QN(DC)	√	√	√	√	√	5/5	√
14	Gunduz et al. (2023)	QL	√	√	√	√	√	5/5	√
15	Hajirasouli et al. (2021)	QL	√	√	√	√	√	5/5	√
16	Han et al. (2021)	QN(DC)	√	√	√	√	√	5/5	√
17	Haridy et al. (2024)	QL	√	√	√	√	√	5/5	√
18	Hassan et al. (2022)	QN(DC)	√	√	√	√	√	5/5	√
19	Idris et al. (2023)	QN(DC)	√	√	√	√	√	5/5	√
20	Khadijah et al. (2022)	QL	√	√	√	√	√	5/5	√
21	Khalil et al. (2023)	QN(DC)	√	√	√	√	√	5/5	√
22	Loan et al. (2022)	QN(DC)	√	√	√	√	√	5/5	√
23	Muslim et al. (2020)	QN(DC)	√	√	√	√	√	5/5	√
24	Pramanik et al. (2021)	QL	√	√	√	√	√	5/5	√
25	Sawari et al. (2024)	QN(DC)	√	√	√	√	√	5/5	√
26	Shah et al. (2020)	QN(DC)	√	√	√	√	√	5/5	√
27	Subawa et al. (2021)	QL	√	√	√	√	√	5/5	√
28	Suyuti and Setyanto (2023)	QN(DC)	√	√	√	√	√	5/5	√
29	Wibowo and Hariadi (2024)	QL	√	√	√	√	√	5/5	√
30	Yin et al. (2021)	QL	√	√	√	√	√	5/5	√

**Note:** QA = Quality assessment; QN (DC) = Quantitative descriptive; QN (NR) = Quantitative non- randomised; QL = Qualitative; MX = Mixed-Method; C = Can't tell

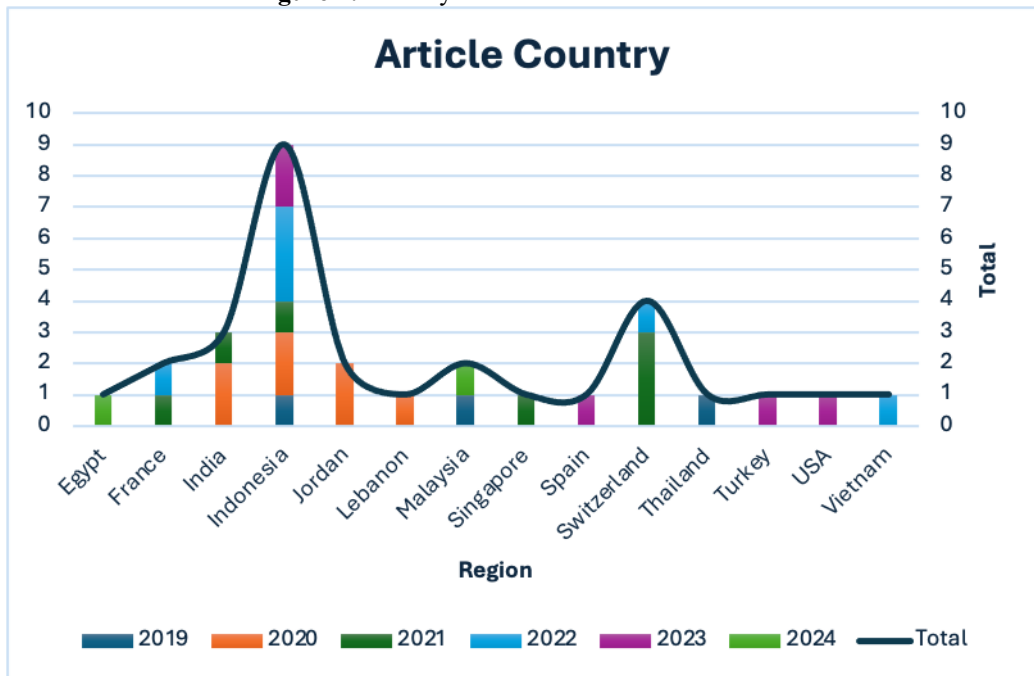
**Source:** Researcher's finding

### 3. RESULTS AND DISCUSSION

#### 3.1. Article Demographic

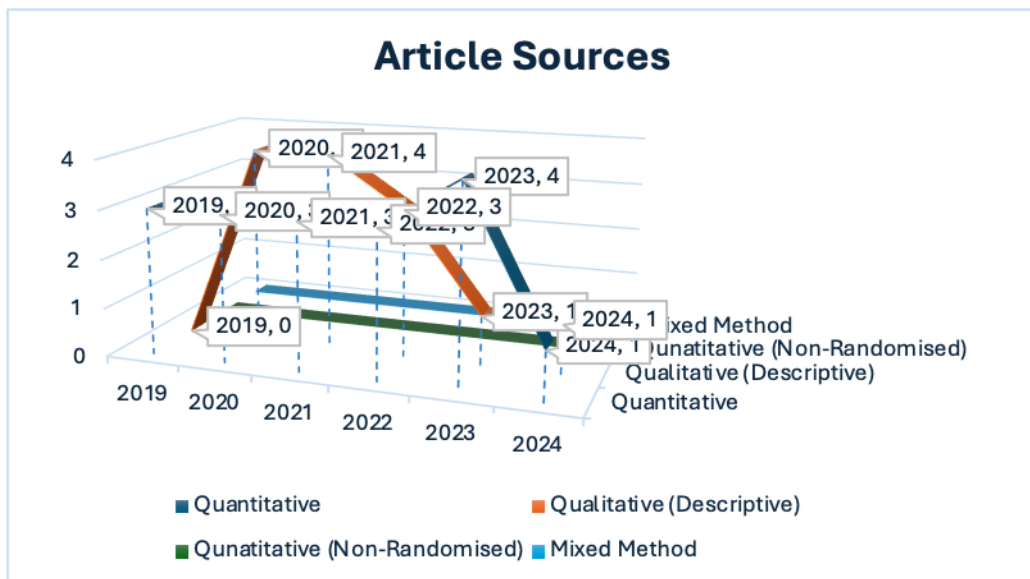
The thematic analysis identified three main themes: Type, Tools, and Impact. These themes were further divided into 13 sub-themes. The geographical distribution of the selected studies revealed that nine were conducted in Indonesia, four in Switzerland, three in India, and two each in France, Jordan, and Malaysia. Additionally, there was one study each in Egypt, Lebanon, Singapore, Spain, Thailand, Turkey, the USA, and Vietnam. The studies included 13 qualitative and 17 quantitative research papers. In terms of publication years, three papers were published in 2019, seven in 2020, eight in 2021, six in 2022, five in 2023, and two in 2024. Figures 2 and 3 depict the distribution of articles by country and research method, respectively.

**Figure 2:** Country of focus for the selected articles



Source: Researcher's findings

**Figure 3:** Year of publication for the selected articles



**Source:** Researcher's findings

**Table 5:** Selected Journals and Their Ranking

No	Journal name	Total number of selected articles	Indexed by WoS	WoS Quartile (referring to latest information)	Indexed by Scopus	Scopus Quartile (referring to latest information)
1	Ceddi Journal of Information System and Technology (JST)	1	X	N/A	X	N/A
2	Current Issues in Tourism	1	√	Q1	√	Q1
3	European Journal of Innovation Management	1	√	Q2	√	Q1
4	European Journal of Islamic Finance	1	X	N/A	X	N/A
5	European Journal of Management and Business Economics	1	√	Q2	√	Q2
6	Geo Journal of Tourism and Geosites	2	X	N/A	√	Q1
7	In Iapa Proceedings Conference	1	X	N/A	X	N/A
8	International Journal of Advanced Computer Science and Applications	1	√	Q4	√	Q3
9	International Journal of Economics & Business Administration (IJEBA)	1	X	N/A	X	N/A
10	International Journal of Religious Tourism and Pilgrimage	3	X	N/A	√	Q1
11	Journal of Cultural Heritage	1	√	Q1	√	Q2
12	Journal of Islamic Marketing	1	√	Q2	√	Q2
13	Journal of Organizational Behavior Research	1	√	Q4	X	N/A
14	Journal of Tourism and Hospitality Management	1	X	N/A	√	Q1
15	Management Science Letters	1	X	N/A	√	Q2
16	Millennial Asia	1	√	Q1	√	Q1
17	Minia Journal of Tourism and Hospitality Research MJTHR	1	X	N/A	X	N/A
18	Planning Malaysia	1	X	N/A	√	Q3
19	Religions	1	√	Q1	√	Q1
20	Society	1	√	Q3	X	N/A
21	Sosiohumaniora: Jurnal Ilmu-ilmu Sosial dan Humaniora	1	X	N/A	X	N/A
22	Sustainability	3	√	Q3	√	Q2
23	Technological Forecasting and Social Change	1	√	Q1	√	Q1
24	Technology Application in the Tourism and Hospitality Industry of Bangladesh	1	X	N/A	X	N/A
25	Tourism Critiques: Practice and Theory	1	X	N/A	X	N/A

Note: N/A= Not Available

Source: Researcher's findings

**Table 6: Findings**

No	Study	Year	Region	Type			Tools							Impact	
				Heritage	Culture	Spiritual	AI	VR	AR	MA	SM	WS	PRS	MKT	SERV
1	Agarwal et al.	2021	India			✓									✓
2	Agustini et al.	2023	Indonesia	✓					✓				✓	✓	✓
3	Al-Makhadmeh	2020	Jordan	✓		✓		✓							✓
4	Almunda et al.	2020	Indonesia		✓										✓
5	Allal-Chérif	2022	France	✓	✓	✓	✓	✓					✓		✓
6	Alomari et al.	2020	Jordan			✓					✓			✓	✓
7	Angkananon et al.	2019	Thailand			✓				✓					✓
8	Arzoli et al.	2021	Switzerland	✓							✓				✓
9	Balakrishnan	2020	India			✓					✓				✓
10	Chatterjee and Duiha	2021	India	✓							✓				✓
11	Destiana and Kusmartini	2020	Indonesia		✓						✓				✓
12	Faraj and Chible	2020	Lebanon		✓						✓				✓
13	Garcia-Haro et al.	2024	Spain	✓							✓				✓
14	Gunduz et al.	2023	Turkey	✓	✓	✓						✓			✓
15	Hajrasouli et al.	2021	France	✓				✓					✓		✓
16	Han et al.	2021	Switzerland	✓					✓						✓
17	Haridy et al.	2024	Egypt	✓	✓	✓						✓			✓
18	Hassan et al.	2022	Switzerland	✓						✓					✓
19	Idris et al.	2023	Indonesia	✓	✓	✓			✓	✓					✓
20	Khadajah et al.	2022	Indonesia			✓					✓			✓	✓
21	Khalil et al.	2023	USA	✓	✓	✓			✓						✓
22	Loon et al.	2022	Vietnam	✓	✓	✓				✓					✓
23	Muslim et al.	2020	Malaysia			✓									✓
24	Pramanik et al.	2021	Singapore	✓	✓	✓			✓				✓		✓
25	Sawari et al.	2024	Malaysia	✓		✓		✓							✓
26	Shah et al.	2020	Indonesia	✓	✓	✓					✓				✓
27	Subawa et al.	2021	Indonesia	✓	✓	✓		✓							✓
28	Suyuti and Setyanto	2023	Indonesia	✓	✓	✓			✓				✓		✓
29	Wibowo and Haradi	2024	Indonesia	✓	✓	✓				✓					✓
30	Yin et al.	2021	Switzerland	✓	✓				✓				✓		✓

**Note:** AI- Artificial Intelligence; VR- Virtual Reality; AR- Augmented Reality; MA- Mobile Application; QR- Quick Response Code; SM- Social Media; WS- Website; PRS- Preservation; MKT- Marketing; SERV- Services

**Source:** Researcher's findings

### 3.2. Themes and Sub-Themes

#### 3.2.1. Types of Religious Tourism

Religious tourism refers to faith tourism or spiritual tourism, entailing travel to sites of religious significance or engagement in religious activities, such as visiting heritage locations and learning about cultural rituals and pilgrimages (Allal-Chérif, 2022; Angkananon et al., 2019; Pramanikst al., 2021). This form of tourism is undertaken by individuals seeking spiritual fulfilment, cultural enrichment, or personal growth through their religious beliefs and practices. It is widely practiced across various faith traditions around the world and plays a significant role in international travel. Key aspects of religious tourism include visiting sacred sites like temples, mosques, and churches, as well as exploring the cultural and historical heritage associated with religious traditions (Allal-Chérif, 2022; Angkananon et al., 2019; Muslim et al., 2020; Pramanikst al., 2021; Sawari et al., 2024; Suyuti & Setyanto, 2023). This may involve studying religious practices, traditions, architecture, art, and artifacts. Some other types of religious tourism include retreats, spiritual gatherings, or meditation practices aimed at spiritual renewal, reflection, and personal development in serene and spiritually enriching settings. Therefore, this study identifies three categories of religious tourism: Heritage, Cultural, and Spiritual.

The three interwoven themes—Heritage, Cultural, and Spiritual—go beyond simple categorisations to reflect how individuals seek meaning, identity, and a sense of belonging through religious journeys. These three dimensions often overlap and complement one another, illustrating how religious tourism is a dynamic and deeply personal process of reconnecting with the sacred, adapting tradition in the face of modernity, and experiencing religion through both individual and social lenses. Aligned with several Sustainable Development Goals (SDGs)—notably SDG 11 (Sustainable Cities and Communities) and SDG 16 (Peace, Justice, and Strong

Institutions)—religious tourism holds significant potential to foster cultural preservation, intercultural understanding, and inclusive community development.

### **3.2.2. Digitalisation Tools in Religious Tourism**

This second theme entails five sub-themes: Artificial Intelligence, Virtual Reality, Augmented Reality, Mobile Applications, and Social Media and Websites. Artificial Intelligence, Virtual Reality, and Augmented Reality are among the hot topics discussed in the tourism industry (Agustini et al., 2023; Al-Makhadmah, 2020; Alamanda et al., 2020; Allal-Chérif, 2022; Hajirasouli et al., 2021; Han et al., 2021; Khalil et al., 2023; Pramanik et al., 2021; Sawari et al., 2024; Subawa et al., 2021; Suyuti & Setyanto, 2023; Yin et al., 2021). Artificial Intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think and learn like humans. AI holds significant potential to revolutionise the experience of religious tourism by enhancing accessibility, personalisation, and engagement for tourists. AI-powered virtual assistants in religious tourism can serve as knowledgeable guides, offering real-time information, historical insights, and navigation assistance through religious sites (Allal-Chérif, 2020).

Virtual Reality (VR) and Augmented Reality (AR) are among the most popular tools in the heritage tourism industry at present. Since religious sites are often heritage sites, preserving the integrity of these buildings can be challenging (Hajirasouli et al., 2021). VR and AR provide valuable solutions for the tourism industry, specifically in enhancing visitor experiences. With VR technology, users can undertake virtual pilgrimages to renowned religious destinations, immersing themselves in the spiritual atmosphere and architectural splendour of temples, churches, mosques, and sacred landmarks (Al-Makhadmah, 2020; Allal-Chérif, 2022; Hajirasouli et al., 2021; Sawari et al., 2024; Subawa et al., 2021). VR offers a 360-degree panoramic view (Sawari et al., 2024), creating a sense of presence and realism that overcomes geographical constraints. Additionally, VR is now available in the form of games for tourists (Allal-Chérif, 2022), further enriching their travel experience.

AR applications in religious tourism enable users to access contextual and historical information through their smartphones or AR devices while exploring religious sites (Agustini et al., 2023). For example, pointing a device at a religious monument can display AR overlays with real-time details about its significance, architecture, and history (Allal-Chérif, 2022). AR can also recreate ancient ceremonies and rituals virtually, allowing visitors to experience cultural practices that are no longer performed or hard to access. Additionally, AR provides interactive educational opportunities with 3D models of artifacts, manuscripts, and artworks, enhanced by multimedia presentations (Agustini et al., 2023; Allal-Chérif, 2022; Han et al., 2021; Khalil et al., 2023; Pramanik et al., 2021; Suyuti & Setyanto 2023; Yin et al., 2021). This technology makes cultural heritage more accessible, educational, and engaging, thus enriching visitors' understanding and connection to the spiritual and historical elements of the sites they visit.

However, the integration of AI, AR and VR technologies into religious tourism poses a considerable financial challenge, particularly for heritage sites or religious institutions with limited budgets. The costs involved in acquiring the necessary hardware, producing culturally and spiritually authentic digital content, and maintaining these technologies over time can be prohibitively high. As a result, there is a growing risk of inequality—where only well-resourced

destinations can provide immersive, tech-enhanced experiences, while smaller or less-funded sites are left behind. This disparity may inadvertently widen the digital divide and compromise the inclusivity that religious tourism aims to promote.

Next, the applications (apps). Using apps provides travellers with easy access to essential information, interactive tools, and personalised experiences directly from their smartphones and tablets (Angkananon et al., 2019; Hassan et al., 2022; Loan et al., 2022; Wibowo & Hariadi, 2024). Popular tourism apps such as Eatmarna (Hassan et al., 2022), Traveloka, Agoda, Booking.com, and Klook offer comprehensive guides with detailed insights into religious sites, historical landmarks, and cultural attractions. They include features like interactive maps, directions, and navigation tools, as well as options for booking tickets, accommodation, and transport, helping tourists navigate complex pilgrimage routes and find important points of interest easily (Angkananon et al., 2019). However, not all users are able to engage with these applications—some remain unaware of their existence due to limited outreach or insufficient promotion, while others face barriers such as low digital literacy or a lack of trust in the technology.

Social media facilitates direct interaction between tourists and religious organisations, allowing travellers to seek information and make decisions, share experiences, and connect with like-minded individuals from different parts of the world (Agarwal et al., 2021; Alamanda et al., 2020; Alomari et al., 2020; Arasli et al., 2021; Balakrishnan, 2020; Chatterjee & Dsilva, 2021; Faraj and Chible, 2020; García-Haro et al., 2024; Khadijah et al., 2022; Muslim et al., 2020; Shah et al., 2020). Most sites of religious significance utilise social media platforms such as Facebook, Instagram, Twitter, and YouTube for sharing captivating visuals, videos, and narratives that highlight their spiritual heritage, historical significance, and cultural richness. These platforms help religious institutions, tour operators, and local communities such as e-WOM (Arasli et al., 2021) to reach a global audience, attract visitors, and promote events, festivals, and pilgrimages. Nevertheless, users must also exercise caution when engaging with social media platforms. This is due to the prevalence of fake accounts, the dissemination of misinformation, and the manipulation of algorithms, all of which can subtly influence users' perceptions, emotions, and behaviours.

The final sub-theme is websites, which are crucial in modern religious tourism. They act as digital gateways, offering detailed information about religious sites including their history, architecture, and cultural context (Haridy et al., 2024). Websites provide virtual guides, maps, directions, and suggested itineraries to help visitors navigate and plan their trips. Additionally, they support educational efforts with multimedia resources such as virtual tours and interactive exhibitions, and include blogs and articles that enhance cultural understanding and immersion (Haridy et al., 2024; Gunduz et al., 2023). Thus, well-designed websites with user-friendly interfaces, up-to-date content, and engaging interactive features have strong potential to enhance user experience in religious tourism. When a site offers a visually appealing layout, smooth navigation, and relevant, meaningful information, it not only builds user trust but also strengthens its role as a credible and accessible resource for spiritual travellers in the digital age.

In summary, to ensure that digital tools in religious tourism are implemented ethically and effectively, governments and policymakers should develop specific guidelines that uphold cultural and religious values; religious institutions must take an active role in reviewing, guiding,

and collaborating with technology developers to safeguard authenticity and sensitivity; while tourism developers are encouraged to engage local communities in the design of digital applications and provide digital literacy training, particularly for target groups such as elderly pilgrims and those from under-resourced areas.

### ***3.2.3. Impact of Using Digitalisation in Religious Tourism***

The final theme, impact, is divided into three sub-themes: Preservation, Marketing, and Services. Today, digitalisation is primarily utilized for preservation within religious tourism, particularly concerning heritage buildings, artifacts, historical documents, sacred texts, and monuments. Tools such as 3D or 360° Virtual Reality and Augmented Reality are essential for these preservation efforts (Allal-Chérif, 2022; Sawari et al., 2024), helping to conserve and make cultural and spiritual heritage accessible for future generations. Most studies on digital heritage tourism had been conducted in countries with numerous historic buildings, cultural sites, and spiritual places (Agustini et al., 2023; Allal-Chérif, 2022; Hajirasouli et al., 2021; Han et al., 2021; Pramanik et al., 2021; Suyuti & Setyanto, 2023; Yin et al., 2021). Therefore, these digital technologies are crucial for protecting both tangible and intangible cultural heritages in religious tourism, advancing global awareness, and ensuring the sustainable management of sacred sites and traditions for the benefit of current and future tourists.

Additionally, almost all of the studies agree that digitalisation tools can also serve as powerful marketing, services, and agent information tools in the realm of religious tourism, enabling destinations to reach a global audience and attract visitors by leveraging on digital platforms and technologies (Alamanda et al., 2020; Shah et al., 2020; Haridy et al., 2024; Idris et al., 2023; Pramanik et al., 2021; Yin et al., 2021). These digital tools such as social media, websites, and apps can provide comprehensive information regarding tourist routes, historical significances, and local accommodations, empowering tourists to plan and make decisions during their journeys (Agawal et al., 2021; Angkanon et al., 2019; Destiana & Kismartini, 2020; Faraj & Chible, 2020; García-Haro et al., 2024; Hassan et al., 2022; Khadijah et al., 2022; Loan et al., 2022; Muslim et al., 2020; Wibowo & Hariadi, 2024). Moreover, digitalisation optimises visitor management through automated booking systems for accommodations, guided tours, and tickets, ensuring seamless service delivery and reducing waiting time. Besides that, real-time or past updates by tourists about events, ceremonies, and cultural festivals can help other tourists navigate their journeys and aid in marketing efforts and strategy.

Future studies should hence include discussions on the awareness of digital tools usage in religious tourism and in realising IR5.0, as these tools have become popular among travellers today. It is crucial to focus on religious sites that have yet to adopt digital tools because although nearly every country has its own heritage, spiritual sites, and history, these may remain unknown to tourists without the aid of digitalisation. Digital footprint is one of the most accessible and widely used tools by visitors today for promoting such sites. Failing to engage in digital initiatives could be a significant disadvantage for religious sites seeking to expand their tourism presence globally.

In summary, the adoption of digital tools in religious tourism—ranging from AI, VR, AR, mobile apps to social media and websites—demonstrates how technology can support inclusive, ethical, and culturally respectful travel experiences. This approach aligns closely with the principles of

IR 5.0, which emphasises the balance between human values and technological advancement. It also contributes to several Sustainable Development Goals—4, 8, 9, 11, and 16. By improving accessibility, enhancing cultural understanding, and promoting community participation, these technologies offer new opportunities for spiritual engagement while supporting sustainable and inclusive tourism development.

### **3.3. Conceptual Framework Study**

In the era of IR5.0, the intersection between advanced digital technologies and human values has become increasingly significant, particularly within service-based sectors such as tourism (Islam et al., 2025). Unlike its predecessor, which emphasised automation and efficiency, Industry 5.0 places greater focus on human-centricity, sustainability, and resilience (Sarişik & Demir, 2025). These guiding principles are especially relevant in religious tourism, a niche that blends spiritual, cultural, and experiential elements. The adoption of digital tools such as Artificial Intelligence (AI), Virtual Reality (VR), Augmented Reality (AR), mobile applications, social media, and websites is reshaping how travellers engage with sacred spaces, making spiritual journeys more inclusive, accessible, and meaningful.

The integration of digital technologies into religious tourism mirrors the core principles of Industry 5.0 human-centricity, sustainability, and resilience. Artificial Intelligence (AI), for instance, plays a transformative role by offering personalised, accessible, and real-time support through virtual assistants (Allal-Cherif, 2020). These tools are designed to meet individual traveller needs, enhancing user autonomy and engagement, while enabling tourism services to remain functional and effective under various constraints.

Similarly, Virtual Reality (VR) and Augmented Reality (AR) demonstrate the full spectrum of Industry 5.0 values. These immersive technologies offer enriched, interactive experiences that not only cater to personal interests but also facilitate deeper spiritual and cultural connections (Al-Makhadmah, 2020; Allal-Chérif, 2022; Hajirasouli et al., 2021; Sawari et al., 2024; Subawa et al., 2021). By allowing virtual visits to sacred sites and re-creating traditional rituals, VR and AR help preserve religious heritage with minimal physical impact—contributing meaningfully to sustainability efforts. Their capacity to bridge geographical divides and overcome physical limitations also reinforces the adaptability and resilience of the tourism sector.

Mobile applications further reflect the human-centric and resilient dimensions of Industry 5.0. With features such as personalised itineraries, real-time navigation, and instant access to essential information, these apps enable travellers to plan and manage their journeys with confidence (Angkananon et al., 2019; Hassan et al., 2022; Wibowo & Hariadi, 2024; Hassan et al., 2022; Angkananon et al., 2019). While their practicality enhances the overall user experience, challenges such as digital exclusion and limited public awareness underline the importance of inclusive design and broader promotional strategies to ensure equitable access.

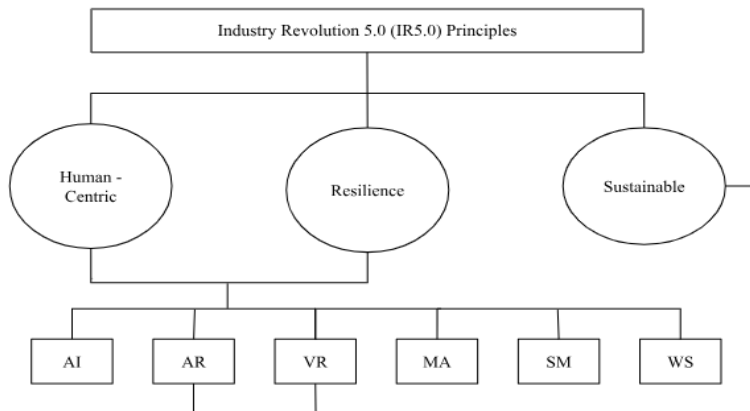
Social media platforms have also become integral to religious tourism, fostering direct interaction between travellers, religious institutions, and broader communities. These platforms facilitate experience-sharing, information exchange, and global connectivity, while also enabling real-time engagement with religious events and destinations (Agarwal et al., 2021; Alamanda et al., 2020; Arasli et al., 2021). In doing so, they contribute to a more adaptive and human-focused

tourism model. However, the risks associated with misinformation, fake accounts, and algorithmic manipulation (Pasička et al., 2021) highlight the urgent need for critical digital literacy among users.

Lastly, websites serve as essential digital gateways for religious tourism. With intuitive interfaces and up-to-date, multimedia-rich content, they offer comprehensive information on religious sites, including historical, architectural, and spiritual details (Haridy et al., 2024; Gunduz et al., 2023). Features such as virtual tours, interactive maps, and curated blogs enhance cultural immersion while supporting independent trip planning. As reliable, accessible platforms, websites align closely with the goals of Industry 5.0 by centring on user empowerment and system resilience in an increasingly digitalised tourism landscape.

Overall, the strategic application of digital technologies in religious tourism demonstrates how the sector is embracing the ethos of Industry 5.0. By integrating tools that centre on user experience, foster inclusivity, and ensure adaptability, religious tourism can evolve into a more human-centric, resilience and sustainable domain. This relationship is visually mapped in Figure 4, which illustrates how digital tools support the transformation of religious tourism into a more inclusive, connected, and future-oriented ecosystem. Moving forward, a deeper exploration of these technologies' impacts on diverse user groups and long-term sustainability outcomes will be essential to fully realise their potential within Industry 5.0 frameworks. However, to fully harness the potential of these technologies, stakeholders must address digital disparities and promote ethical, inclusive, and culturally sensitive innovation. Doing so will ensure that religious tourism not only survives but thrives in an era defined by both technological advancement and human value.

**Figure 4:** Alignment of Digital Tools in Religious Tourism with IR 5.0 Principles



**Source:** Researcher's findings

#### **4. CONCLUSION**

The religious tourism industry significantly contributes to the national GDP. However, efforts to restore, preserve, and protect heritage, cultural, and spiritual sites are essential to maintain their value for future generations. This indirectly supports the achievement of Sustainable Development Goals (SDGs) 4, 8, 9, 11, and 16, which focus on quality education, promoting decent work and economic growth, fostering innovation and infrastructure, creating sustainable cities and communities, and advancing peace and justice. Specifically, SDG 8 emphasises good jobs and economic growth; tourism in this case – being a major industry – provides numerous employment opportunities. The integration of digitalisation can further boost the number of tourists, thereby creating additional job prospects for local communities and supporting SDG 11. Additionally, the advancement of digital innovation aligns with SDGs 9 and 16, as technological progress in infrastructure can contribute to community peace and justice.

Numerous studies have explored the digitisation of religious tourism, particularly in countries rich in heritage, history, and spirituality, such as Indonesia, Switzerland, India, France, Jordan, and Malaysia. These countries have undertaken various initiatives to safeguard monuments and sites while enhancing the knowledge and experiences available to future generations. Therefore, this study highlights the need for countries lacking in religious tourism digital awareness to embrace digital advancements in order to develop their heritage religious tourism as well as contribute to the achievement of the SDGs and realisation of IR5.0.

Future studies should hence include discussions on the awareness of digital tools usage in religious tourism and in realising IR5.0, as these tools have become popular among travellers today. It is crucial to focus on religious sites that have yet to adopt digital tools because although nearly every country has its own heritage, spiritual sites, and history, these may remain unknown to tourists without the aid of digitalisation. Digital footprint is one of the most accessible and widely used tools by visitors today for promoting such sites. Failing to engage in digital initiatives could be a significant disadvantage for religious sites seeking to expand their tourism presence globally.

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