



## Intersection Between Modern Technologies and Halal Tourism: Exploring the Role of Digital Innovation in Enhancing Muslim Travellers' Experience

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**ABSTRACT** - The rapid pace of digital innovation has significantly impacted various sectors, including tourism. The convergence of halal tourism and digital innovation offers unprecedented possibilities. However, how the fusion between modern technologies and halal tourism can enhance Muslim travellers' experiences is still not clear. It is crucial to understand the dynamics of amplification through digital avenues, focusing on convenience, accessibility, and cultural enrichment. Simultaneously, the multifaceted ramifications of digital mechanisms and platforms on Muslim travellers' journeys are poorly understood. Hence, the current study aims to understand Muslim travellers' preferences and expectations regarding digital innovations in halal tourism. Moreover, it also aims to gain a holistic understanding of their experiences with digital tools in the industry. To achieve the objectives, the study adopts the methodology of reviewing existing literature from various sources. The study provides useful insights into digital innovations. For example, halal-conscious travellers can find comprehensive information on digital platforms; Halal food delivery apps make halal food easy to get. In addition, Muslim travellers can better connect with their destinations through virtual tours of historical landmarks and Indigenous customs using Augmented Reality (AR). At the same time, halal-conscious travellers benefit from an intricate web of experiences, recommendations, and insights woven through online forums, social media groups, and travel blogs. Hence, this study is significant in highlighting the connection between halal tourism and the digital resurgence and the transformative power of technology in enhancing Muslim travellers' experience. Practical insights for stakeholders in the overlapping fields of halal tourism and technology are explored, including the effects of digital enablers on accessibility, cultural engagement, and community nexus. Furthermore, the findings encourage the development of strategies to cater to the evolving aspirations of travellers seeking Muslim-friendly products and services in the digital era.

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## INTRODUCTION

The concept of halal tourism, which is based on Islamic ethics and sustainability, has grown into a substantial subset of the travel market. The term "halal tourism" refers to vacations that adhere to Islamic principles and prioritise quality and wholesomeness, making them suitable for Muslim

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travellers as well as those with dietary restrictions. There are huge opportunities for businesses and destinations worldwide in this rapidly expanding sector, propelled by the increasing number of Muslims and their desire for more ethical consumption practices.

In the realm of halal, the concept transcends mere religious permissibility; it embraces the broader notion of “*ṭayyib*,” encapsulating the essence of quality and wholesomeness. As such, halal products and services comply with Islamic principles and advocate sustainability, healthfulness, and social responsibility (Azam et al., 2019; Yuhan et al., 2023). The multifaceted nature of this approach serves to emphasise the inherent connection between ethical norms and religious practices. Within the travel domain, the convergence of these foundational principles has given rise to the advent of halal tourism. In addition, this burgeoning economic domain strives to accommodate the needs of Muslim travellers by providing experiences that align with their faith-based needs while concurrently attracting a heterogeneous array of consumers. The aforementioned inclusive approach has attracted the attention of Muslim travellers and generated curiosity among individuals from diverse religious backgrounds, serving as evidence of its universal appeal (Marlinda et al., 2023). Moreover, the traveling practices of Muslims are driven by the influence and encouragement of both the Quran and hadith. The following quotations from the Quran and hadith are some of the examples that motivate Muslim travellers to surf and explore around the world.

So, have they not travelled through the earth and have hearts by which to reason and ears by which to hear? For indeed, it is not eyes that are blinded but blinded are the hearts which are within the breasts.

(The Quran, 22:46).

Say, [O Muḥammad], “Proceed [i.e., travel] through the land and observe how was the end of the criminals.

(The Quran, 27:69).

And proclaim to the people the hajj [pilgrimage]; they will come to you on foot and on every lean camel; they will come from every distant pass.

(The Quran, 22:27).

Imam Sadiq (a) narrates that the Holy Prophet (s) told Imam Ali (a): “O Ali, it does not befit an intelligent person to travel except for three reasons: for work and sustenance, to gather for the Hereafter, and for enjoyment that is not haram.”

(Wasā’il, v. 8, p. 248, H. 2).

As the Muslim population continues to grow, the demand for halal products and services also increases at an impressive rate. In recent years, the demand for halal tourism experiences has surged, with Muslim travellers seeking destinations and services that align with their faith-based values. At a Compound Annual Growth Rate (CAGR) of 16.5%, halal tourism is expanding at a rate that far outpaces the rise of any other subset of the worldwide halal economy (Mastercard and CrescentRating, 2023). According to Mastercard and CrescentRating (2023) in Global Muslim Travel Index 2023, the market size was worth \$100 billion in 2021, which has been projected to experience a substantial increase, reaching US\$189 billion by the year 2025. This meteoric rise is intrinsically intertwined with the preferences and demands of its primary consumers – Muslim travellers. This demographic, predominantly comprising millennials, Generation Z, and even Generation Alpha (Mastercard and CrescentRating, 2023), manifests a discerning penchant for ethical consumption, social consciousness, and conformity to Islamic tenets, especially the stringent criteria of halal standards (Rahman et al., 2022). Such increasing growth and demand are indicative of the demand for halal products and services and increasing opportunities for halal entrepreneurs in the halal tourism industry as well as in other sectors of the global halal industry (Abdullah & Azam, 2020, 2021).

In response to this growing demand, destinations within Muslim-majority nations and a significant number of locations across the globe have begun to offer Muslim-friendly amenities and services. This strategic alignment with the principles of halal tourism has led to an increased reliance on contemporary digital technologies, amplifying the travel experience manifold. From Artificial Intelligence (AI)-driven itinerary planning tools to Augmented Reality (AR)-based virtual tours, digital innovations are revolutionizing how Muslim travellers engage with destinations and cultures worldwide. The integration of technology commences at the earliest stages of travel planning, where tools powered by AI, such as ChatGPT and Bard, transform conventional itineraries into SMART plans – ones that are Specific, Measurable, Achievable, Realistic, and Timely (Battour et al., 2022).

In the digital landscape, numerous applications have emerged to cater to the distinct needs of Muslim travellers. These digital innovations include virtual mosque guides, halal food delivery applications, and AR technology, among others, facilitating interactive virtual tours of historical landmarks. It also highlights indigenous traditions and captivating narratives that bridge the gap between Muslim travellers and their selected destinations (Salaheldeen, 2022). Despite the possibilities, the exact ways in which digital innovation can enhance Muslim travellers' experiences within the context of halal tourism are not well understood. This research gap emphasises the importance of the present study with the following objectives:

1. Comprehending the Muslim-friendly tourism industry to realise Muslim travellers' preferences and expectations.
2. Unveiling the role of digital innovations in elevating Muslim travellers' experiences.

This study bears significant implications for stakeholders operating at the intersection of halal tourism and technology. Unravelling the intricacies of Muslim travellers' aspirations and their dynamic interaction with digital tools paves the way for strategies that align with the evolving needs of this niche market. In addition, the findings extend beyond theoretical realms, offering practical insights to empower stakeholders to enhance accessibility, foster cultural engagement, and cultivate a sense of community within the halal tourism landscape.

The following sections of the paper explain the methodology employed in the study. The subsequent section delves into examining the halal tourism sector and the preferences of its consumers. This is followed by an exploration of digital innovations that have the potential to enhance the overall experience of Muslim tourists greatly. The review encompasses both an examination and a discourse on the findings. Ultimately, the study culminates in a conclusive analysis that synthesises the discovered results and offers pertinent suggestions for the next action.

## **METHODOLOGY**

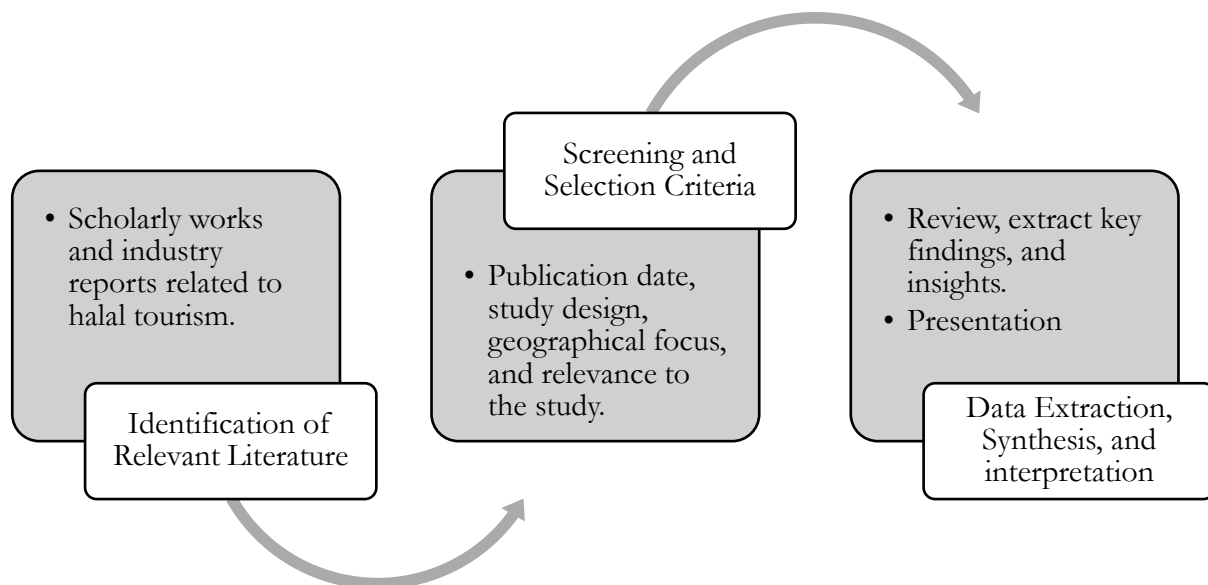
The methodology employed in this study is grounded in an extensive examination of existing scholarly works, aiming to achieve a comprehensive understanding of the subject matter. As the abstract outlines, this study adopts a literature review methodology to synthesise existing literature on the intersection between modern technologies and halal tourism. The following summary provides insights into how the reviewing process was conducted.

The initial step involved was identifying relevant scholarly works and industry reports related to halal tourism, Muslim travellers' preferences and expectations, and the role of digital innovations in enhancing travel experiences. This process was facilitated through comprehensive searches of academic databases, such as PubMed, Scopus, and Google Scholar, using relevant keywords and search strings.

Subsequently, the identified literature underwent screening based on predefined inclusion and exclusion criteria. This involved assessing the relevance and quality of each source to ensure

its alignment with the study's objectives. Relevant criteria included publication date, study design, geographical focus, and relevance to the topic of interest.

Upon finalizing the selection of relevant literature, data extraction was conducted to systematically extract key findings, insights, and themes from each source. Note that this process involved categorizing and organizing extracted data to facilitate synthesis and analysis. Through a systematic review approach, we aimed to critically examine the findings and draw meaningful conclusions regarding the research topic. Figure 1 visually represents the steps involved in the methodology, illustrating the systematic review of existing literature to gather relevant information and data. This structured approach ensures the accuracy and reliability of the study's findings and contributes to the robustness of the research methodology.



**Figure 1:** Steps involved in methodology

In summary, the methodology section outlines the systematic approach employed in conducting the literature review, emphasizing the rigour and comprehensiveness of the reviewing process. This methodology provides a solid foundation for synthesizing existing knowledge and generating insights that inform the subsequent analysis and discussion.

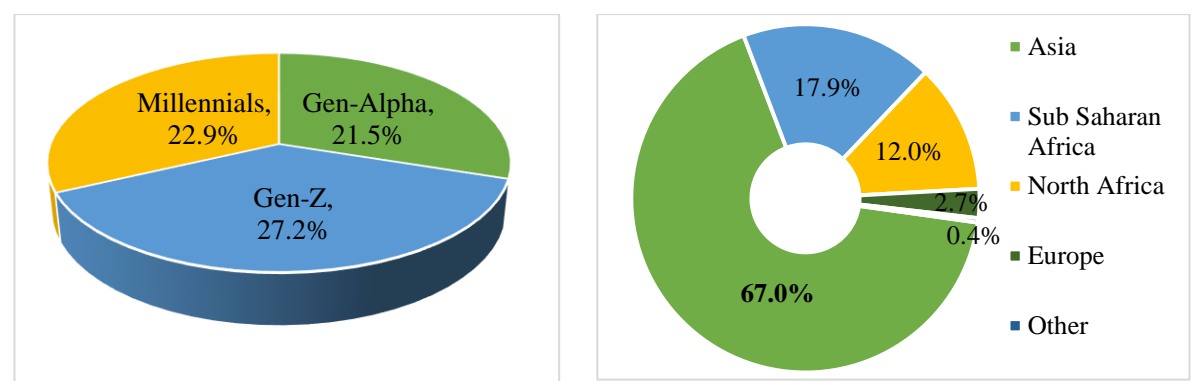
## LITERATURE REVIEW

### Halal Tourism: The Industry and Consumers' Preferences

The connection between sustainable development and halal tourism has the potential to revolutionise the tourism industry by fostering more eco-conscious and socially conscious habits among Muslim tourists while meeting their faith-based needs. One factor fuelling the expansion of the halal tourism market is the rapidly growing Muslim population, which currently stands at over 2.014 billion (25% of the global population) worldwide (Prayer Times, 2023). Asia, which is home to 67% of the world's Muslims, Sub-Saharan Africa (17.9%), North Africa (12%), and Europe (2.7%) are all places where halal tourism could be popular (Mastercard-CrescentRating, 2022).

Furthermore, millennials, Generation Z, and Generation Alpha, who are increasingly interested in sustainable and responsible tourism practices, represent a key market for Muslim-friendly tourism. According to Mastercard and CrescentRating (2023) in GMTI report 2023, more than 70% of Muslim travellers are under the age of 40, with 22.9% being millennials, 21.5% being Generation Z, and 27.2% being Generation Alpha (Figure 2). Halal tourism ushers in a new era

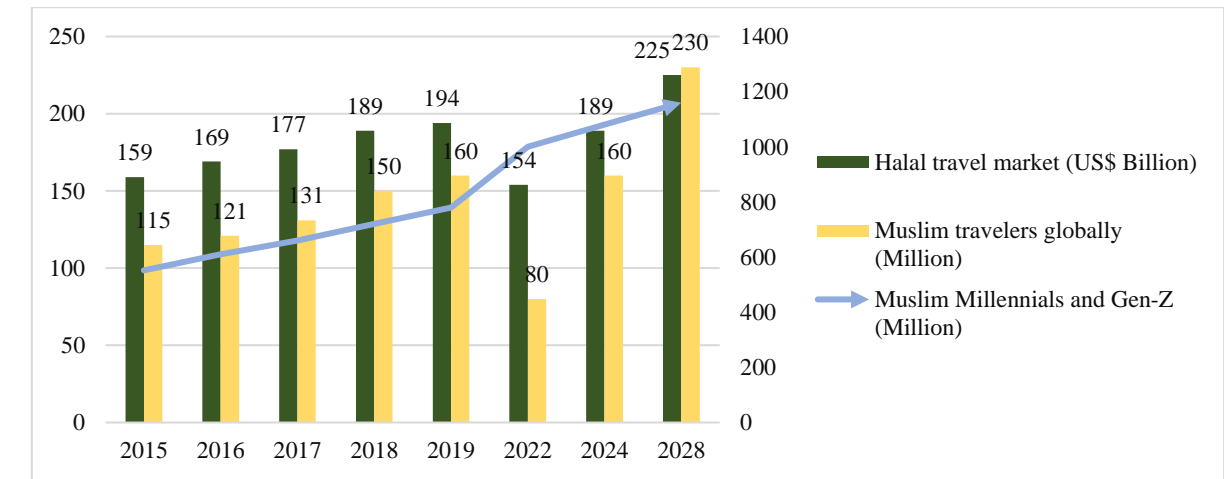
for this demographic of Muslim travellers, satisfying their desire for halal as well as sustainable food and lifestyle products. As a result, more hotels, restaurants, and travel agencies are looking for halal certification to serve this growing market (Azam et al., 2021).



Source: Mastercard-Crescentrating (2022)

Figure 2: Percentage of Muslim population by generation and region

The demand for halal certification is evident in the growth of the halal tourism industry globally. According to the GMTI report-2022, the Muslim travel market is expected to reach \$225 billion by 2028, representing a significant opportunity for the tourism industry. Despite the COVID-19 pandemic, the halal travel industry is rapidly recovering (Dinar Standard, 2022). The number of global Muslim travellers was recorded at 110 million in 2022, and it has been projected to reach 160 million in 2024 and 230 million in 2028 (Mastercard and CrescentRating, 2023). Simultaneously, an increasing trend can be observed in the size of Muslim millennials and Generation Z travellers worldwide (Figure 3). Moreover, the rise of social media has also played a significant role in promoting Muslim-friendly tourism, with influencers and bloggers sharing their experiences and recommendations with their followers. This, ultimately, increases awareness and demand for this type of travel (Battour et al., 2022). As a result, destinations and businesses prioritizing Muslim-friendly services and sustainable practices will likely see increased interest and revenue from this growing market segment.



Source: Mastercard-Crescentrating (2022)

Figure 3: Halal tourism, travellers, and millennials globally

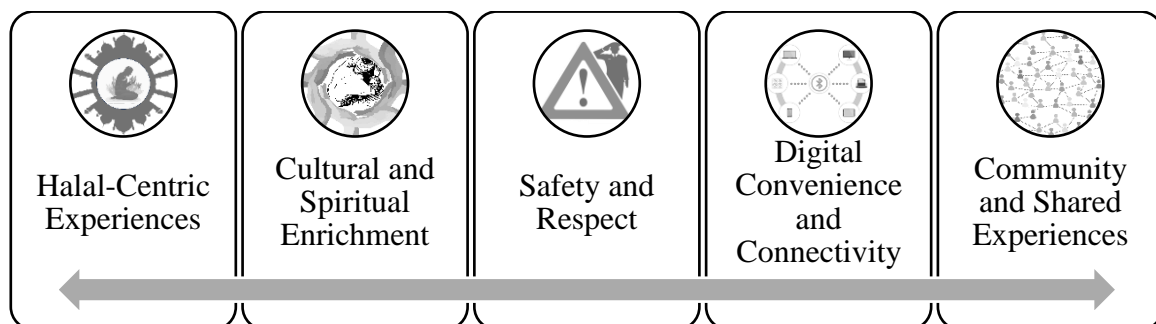
**Muslim travellers’ preferences and expectations: unveiling the heartbeat of halal tourism.** It is the preferences and needs of Muslim consumers that shape their traveling experiences within the evolving landscape of halal tourism. These preferences transcend mere subjective desires, as

they serve as manifestations of deeply held religious beliefs, cultural affiliations, and the quest for profound and purposeful experiences. This section of the literature review explores the intrinsic desires of Muslim travellers, elucidating the multifaceted aspects illuminating their trajectory within the realm of halal tourism.

Muslim travellers, who adhere to religiously based dietary and lifestyle preferences, actively pursue experiences that revolve around the concept of halal. The provision of halal food, prayer facilities, and accommodations that are congruent with their religious beliefs is not solely a matter of convenience but rather a fundamental necessity (Hanafiah et al., 2022; Ulfy et al., 2021). Consequently, the inclination towards destinations that accommodate these specific requirements serves as a testament to their unwavering dedication to upholding their religious beliefs, even in the midst of traveling to a new destination. According to Said et al. (2022), Muslim travellers frequently prefer destinations imbued with profound cultural and historical importance. The individual's inclination towards places that connect with Islamic history and heritage indicates their desire for cultural and spiritual edification. The profound resonance of immersing oneself in places of worship, iconic landmarks, and local traditions provides their journeys with a profound spirituality.

Additionally, studies (Said et al., 2022; Suban et al., 2021) discovered that Muslim travellers are often concerned about their safety and respectful treatment by others during their journeys and tours. The preference towards selecting tourist places that foster a sense of welcome, respect, and security indicates a preference to travel without the apprehension of encountering cultural misinterpretations or discriminatory treatment. Moreover, Muslim travellers prefer locations that actively embrace and accommodate their religious beliefs and cultural customs (Yaakop et al., 2017), cultivating an included atmosphere.

In an increasingly digital world, Muslim travellers express a preference for seamless digital experiences that align with their faith-based needs. Access to information about prayer timings, qibla direction, halal dining options, and nearby mosques through digital platforms is not just a convenience. It is an expectation that streamlines their travel experiences (Crescent Rating, n.d.). Simultaneously, like any other traveller, Muslim travellers often express a preference for connecting with fellow travellers who share similar values and experiences (Pung et al., 2019). The desire for a sense of community transcends geographical boundaries, driving them to seek interactions with locals and other Muslim travellers. In addition, shared experiences, insights, and recommendations through online platforms foster a sense of belonging and companionship (Wang et al., 2017).



**Figure 4:** Preferences of Muslim travellers in halal tourism

Muslim travellers' preferences and expectations constitute the heart and soul of halal tourism, as illustrated in Figure 4. Their aspirations for halal-centric experiences, cultural enrichment, safety, digital convenience, and community interactions shape the curve of their journeys. As the travel landscape continues to evolve, the ability of destinations and the industry to align with and exceed these preferences will determine the resonance and success of halal tourism. Hence, understanding and embracing these desires is not only a path to serving a distinct

market but a key to fostering cultural understanding and global unity and enriching the travel experiences of all.

**Digital Innovations**

**Digital Platforms for Halal Travel Planning**

Smartphones and other forms of digital innovation are changing the way people travel. With over 70% of travellers saying they always use their phones while travelling (Google, 2018), it is clear that smartphones have become indispensable tools for travellers. Digital platforms (e.g., blogs, social media, websites, booking services, and AI tools like ChatGPT, to name a few) have become crucial tools in the planning phase of halal tourism, providing Muslim travellers with an array of benefits. These platforms act as virtual concierges, empowering travellers with the necessary information to make informed decisions aligned with their faith-based requirements (Cuomo et al., 2021; Pencarelli, 2020). Furthermore, recent data reveals that almost one-third of vacationers use social media to plan their next trip, with 60% of Generation Z and 40% of millennials doing the same. Instagram was discovered to be the best place to get vacation ideas, followed by Facebook and TikTok (Fuad, 2023). Comprehensive information access is one of the fundamental ways digital platforms contribute to halal travel planning. They provide a one-stop hub for Muslim travellers, offering a wealth of halal-specific details, such as the availability of prayer rooms, nearby mosques, prayer timings, and qibla direction indicators (CrescentRating, 2023; Husna, 2023). They also highlight the halal certifications of restaurants, ensuring that travellers can indulge in meals that adhere to their dietary constraints.

Personalised itineraries are another key feature of digital platforms. Travellers can input their preferences, priorities, and constraints; these platforms generate tailor-made plans that align with their requirements (Whithead, 2020). Real-time updates and user reviews are also available on digital platforms, allowing travellers to access the latest information about prayer timings, halal food availability, and cultural events at their selected destination (Assaker et al., 2020). Consequently, these updates provide insights into fellow travellers’ experiences, enabling them to adapt their plans based on current circumstances. Note that navigational assistance is another crucial aspect of digital platforms (Whithead, 2020). Interactive maps provide clear directions to nearby mosques, halal eateries, and other essential facilities, while GPS-enabled features help users locate points of interest effortlessly. According to Google data, over 77% of people use navigation apps regularly, with Google Maps having over a billion monthly users, and there has been a 2% annual increase in transportation and navigation app downloads (Fuad, 2023). Additionally, digital platforms recognise the importance of cultural experiences in travel, incorporating features that highlight local cultural events, heritage sites, and activities (Cuomo et al., 2021). Thus, by engaging with the cultural fabric of a destination, Muslim travellers can forge a deeper connection with the places they visit and the communities they encounter.

1	2	3	4	5
•Comprehensive information access	• Personalised itineraries	• Navigational assistance	• Real-time updates and reviews	• Enhanced cultural experience

**Figure 5:** Significance of digital platforms in Halal tourism

To summarise, digital platforms dedicated to halal travel have revolutionised the planning phase of halal tourism with comprehensive information access, personalised itineraries, real-time updates, and navigational assistance (Figure 5). Consequently, it empowers Muslim travellers to embark on journeys that align with their faith-based requirements while embracing the richness of their chosen destinations.



### **Virtual Reality Guides**

The rise of halal tourism has given rise to virtual mosque guides and apps, which provide real-time information about nearby mosques, prayer times, and the qibla direction. These apps (e.g., Virtual Reality (VR), Muslim Pro, My Mosque, Live Mosque, Muslim: Prayer Time, Qibla, and many more apps) use GPS technology to pinpoint the user's location, offering a curated list of nearby mosques and their details. This technology ensures that Muslim travellers can easily find suitable places for prayer and adhere to their religious obligations, eliminating uncertainty and stress related to prayer times in unfamiliar locations. For example, Kabir et al. (2021) have introduced a VR Cave, a combined application of VR, an Android app, and a website, to prepare Muslims for pilgrimage with VR experiences.

The application of virtual tour guides is becoming increasingly popular among tourists (Rahim et al., 2021). Virtual mosque guides enhance convenience and accessibility for Muslim travellers by seamlessly integrating into their itineraries and reducing the stress of finding suitable prayer places, especially in regions lacking halal-friendly facilities. In addition, they bridge the information gap, allowing travellers to focus on their destination experiences while maintaining their religious practices (Njerekai, 2019). Looking ahead, the integration of virtual mosque guides with other travel-related apps could provide holistic travel experiences, from booking accommodations to exploring attractions while ensuring seamless access to religious facilities. Furthermore, these apps also contribute to the broader conversation on cultural inclusivity within the tourism industry.

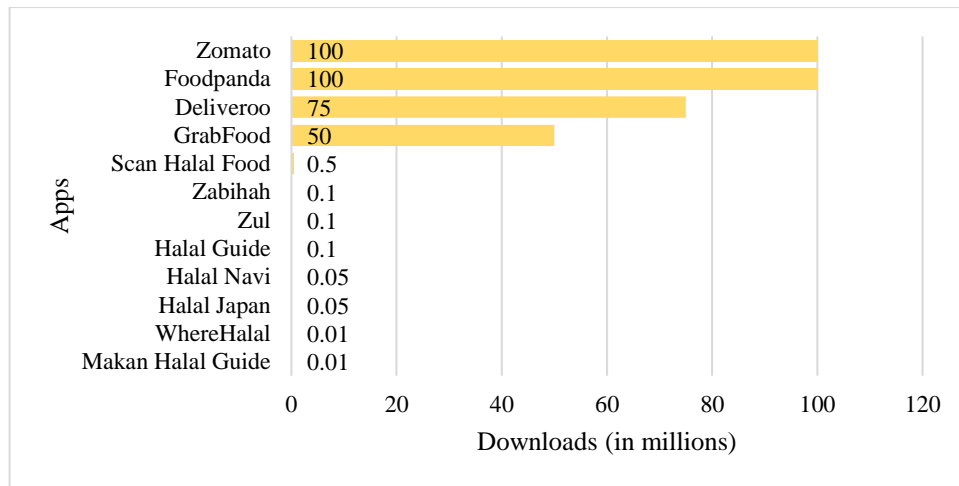
In summary, virtual mosque guides and apps represent a significant intersection of technology and faith-based travel needs. They empower Muslim travellers with the tools to uphold their religious practices during their journeys and foster cultural immersion and social engagement. Moreover, they also symbolise an industry that values inclusivity and accessibility for all travellers as the travel landscape evolves.

### **Halal Food Delivery Apps**

Halal food delivery apps are a significant innovation in the field of halal tourism, simplifying dining for Muslim travellers while upholding their faith-based dietary preferences. These apps prioritise the integrity of halal standards, carefully sourcing, preparing, and delivering halal meals. This commitment assures Muslim travellers that their dietary needs are being met with precision. Halal food delivery apps often collaborate with halal-certified restaurants, curating menus that strictly adhere to halal guidelines. This partnership ensures that travellers can enjoy their meals without the uncertainty that often accompanies navigating local cuisine that may not align with their faith-based requirements (Jia & Zhang, 2021). Figure 6 illustrates some of the most downloaded apps on the Google Play Store that provide halal food delivery services, where Zomato and Foodpanda were downloaded more than 100 million times, followed by Deliveroo (75+ million), GrabFood (50+ million), and Scan Halal Food more than 500k times.

These apps bring unprecedented convenience to the dining experience of Muslim travellers. They address common challenges such as unfamiliar surroundings, language barriers, and time constraints. Moreover, travellers can easily access a diverse range of halal dishes through user-friendly interfaces, allowing them to order meals that align with their dietary preferences and have them delivered to their location (Nahdliyah et al., 2021). Moreover, these apps cater to the evolving dietary preferences of modern Muslim travellers by offering various dishes from different cuisines within the halal framework. They also provide customization options, allowing travellers to personalise their orders based on dietary restrictions, portion sizes, and specific ingredients. Notably, the impact of halal food delivery apps on traveller satisfaction is substantial. They contribute to a seamless and enjoyable travel experience, enabling travellers to focus on exploration without compromising on their dietary choices. Additionally, these apps enhance the gastronomic journey of Muslim travellers by offering a wide selection of pleasurable and permissible dishes.





Source: Search results from Google Play store as of December 2023

**Figure 6:** Most popular Halal food delivery apps and their number of downloads

In summary, halal food delivery apps have become indispensable companions for Muslim travellers in the contemporary landscape of halal tourism. They offer assurance, convenience, and a culinary journey that aligns with faith-based dietary preferences. As these apps continue to evolve, they highlight how technology can seamlessly bridge cultural and religious considerations in the realm of dining while travelling.

### Augmented Reality (AR) for Cultural Exploration

In the dynamic realm of digital innovation and halal tourism, AR stands as a powerful tool that redefines travel experiences. AR seamlessly merges the physical and virtual worlds, offering Muslim travellers unique opportunities for profound cultural engagement. AR's most impactful feature is its ability to transport travellers to historical sites, transcending geographical limitations. Through AR-enhanced virtual tours, Muslim travellers can explore ancient mosques and significant historical sites in incredible detail, connecting with rich narratives while standing in the present (Battour et al., 2023).

AR does not just offer static tours; it transforms local traditions into interactive experiences. Travellers can engage with living cultures through AR displays highlighting customs, festivals, and rituals, fostering deep understanding and connection (Özkul & Kumlu, 2019). AR's storytelling capabilities immerse travellers in narratives spanning centuries. Muslim travellers can vividly experience stories from Islamic history, recreating pivotal moments and legendary figures, providing unparalleled engagement. Beyond history and narratives, AR enriches the dining experience. Meanwhile, restaurants can utilise AR to provide informative overlays on menu items, explaining cultural significance and ingredients (Batat, 2021). For Muslim travellers seeking halal options, AR identifies suitable dishes, ensuring a seamless culinary journey. Most importantly, AR deepens spiritual connections. At the same time, travellers can virtually participate in religious rituals and ceremonies, overcoming geographical constraints and fostering a sense of unity and belonging (Özkul & Kumlu, 2019).

In summary, AR transforms halal tourism by empowering Muslim travellers to explore historical sites, engage with local traditions, and immerse themselves in enriching narratives. Through interactive displays, enhanced dining experiences, and spiritual engagement, AR becomes a catalyst for meaningful connections with destinations, cultures, and histories.

### Online Community Engagement

In the realm of halal tourism, online community engagement plays a pivotal role. Platforms such as online forums, social media groups, and travel blogs transcend physical boundaries, creating a

sense of camaraderie among Muslim travellers. Such online communities are spread over different channels like Facebook, Instagram, Telegram, and WhatsApp, to name a few. These digital spaces serve as bridges, enabling travellers to share their journeys, cultural discoveries, and recommendations (Kellett, 2022). Data suggests that about 72% of travellers share photos and videos on social media during travelling (Fuad, 2023). Such shared experiences cultivate a profound sense of connection and validation within a community that values faith and exploration. Moreover, these platforms offer practical insights into halal-friendly destinations, accommodations, dining, and cultural attractions. This knowledge equips fellow travellers with informed choices, ensuring an enjoyable, faith-aligned travel experience.

Online communities are treasure troves of tips and local insights, extending beyond logistics to include cultural nuances, safety advice, and strategies for meaningful engagement with local communities (Arsaf et al., 2008). This exchange of information empowers travellers with insider knowledge, enriching their travel experiences. Beyond practical advice, online community engagement fosters a global network of like-minded individuals who share common values and aspirations (Colladon et al., 2019). This sense of belonging provides not only practical support but also emotional encouragement. Moreover, travellers with faith-based preferences find solace in knowing they are not alone in their journeys, boosting their confidence to explore new horizons.

In halal tourism, online community engagement transforms individual journeys into collective narratives. These platforms create a digital realm where Muslim travellers connect, support, and inspire each other. Through virtual communities, halal tourism becomes a shared exploration of faith, culture, and the world.

### **AI Enabled Technologies**

AI-enabled technologies such as digital personal guides, ChatGPT, virtual hosts, BingChat, Chatbot, and virtual guides, amongst others, hold immense significance in the realm of halal tourism, profoundly impacting the experiences of Muslim travellers. In an era where technology has become integral to tourism, AI's role in halal tourism cannot be overstated. This is particularly crucial as the demand for halal-friendly travel destinations and services continues to rise among Muslim tourists (Battour et al., 2022). AI stands as a catalyst for meeting the unique needs and preferences of Muslim travellers, offering a tailored and seamless journey. It empowers tourism providers to comprehend and address specific requirements, such as offering halal meals, prayer facilities, and culturally sensitive amenities (Battour et al., 2022). Moreover, AI-driven personalization ensures Muslim travellers receive recommendations and assistance that align with their preferences, making their travel experiences more convenient and enjoyable.

AI simplifies the travel planning process and enhances communication through language translation tools, making it easier for Muslim travellers to interact with locals and access information in their preferred language. The utilization of AI applications and virtual assistants in providing real-time information has emerged as a significant asset in facilitating adherence to religious practices. These technological advancements offer users timely updates on crucial aspects such as prayer times, the proximity of mosques, and cultural events, thereby enhancing the overall religious experience (Battour et al., 2022). Moreover, AI assumes a pivotal role in safeguarding the well-being and protection of Muslim travellers through its ability to furnish timely and up-to-date information regarding the prevailing circumstances and availability of emergency services in the respective localities. It also fosters a feedback-driven ecosystem where travellers' input helps destinations continually improve their services and meet the evolving needs of halal travellers (Hoyer et al., 2020). In essence, AI enriches the halal tourism experience and strengthens the competitiveness and sustainability of halal-friendly destinations in a dynamic and evolving industry (Battour et al., 2023).

## DISCUSSION

The exploration of digital innovations within the realm of halal tourism reveals a nuanced landscape that intertwines technological advancements with the deeply rooted preferences and expectations of Muslim travellers. As we delve into the implications of the findings from the literature, it becomes evident that these digital innovations hold significant promise for transforming the halal tourism experience. However, critical analysis unveils certain complexities, inconsistencies, and research gaps that warrant careful consideration.

### Preferences and Expectations of Muslim Travellers

The literature review illuminates the profound desires and expectations of Muslim travellers within the halal tourism landscape. Figure 4 provides a comprehensive depiction of the preferences identified through our review. These preferences encapsulate various dimensions, including halal-centric experiences, cultural enrichment, safety, digital convenience, and community interactions.

Muslim travellers, driven by religious and cultural considerations, actively seek destinations and services that align with their faith-based needs. Furthermore, the provision of halal food, prayer facilities, and accommodations attuned to their religious beliefs emerges as a fundamental necessity rather than mere convenience (Hanafiah et al., 2022; Ulfy et al., 2021). Additionally, the preference for destinations steeped in cultural and historical significance reflects the desire for spiritual and educational enrichment during travel (Said et al., 2022).

Safety and respectful treatment also emerge as paramount concerns for Muslim travellers (Said et al., 2022; Suban et al., 2021). The inclination towards destinations fostering a sense of welcome and inclusivity underscores the importance of cultural understanding and mutual respect in enhancing travel experiences.

In an increasingly digital landscape, Muslim travellers prefer seamless digital experiences catering to their faith-based requirements. Digital platforms serve as indispensable tools, offering access to prayer timings, halal dining options, and nearby mosques (Crescent Rating, n.d.). Furthermore, the desire for community interactions underscores the importance of online platforms in fostering connections among like-minded travellers (Pung et al., 2019).

### Role of Digital Innovations

The study achieves the second objective by unveiling the role of digital innovations in the realm of halal tourism, as illustrated in Figure 5. The digital platforms for halal travel planning, virtual mosque guides, halal food delivery apps, AR, online community engagement, and AI-enabled technologies collectively reshape the way Muslim travellers engage with their destinations. These technologies act as facilitators, aligning travel experiences with faith-based needs, preferences, and expectations. Furthermore, the personalised itineraries, real-time updates, and navigational assistance provided by digital platforms enhance the convenience and cater to the specific requirements of Muslim travellers. Virtual mosque guides and AR contribute to the spiritual aspect of journeys, fostering cultural immersion and social engagement. Meanwhile, halal food delivery apps bridge dietary considerations, offering seamless culinary exploration. At the same time, online community engagement and AI technologies further enrich the journey, creating a sense of community and providing tailored, efficient solutions.

Despite the evident benefits, it is crucial to acknowledge the limitations and potential challenges associated with these digital innovations. Accessibility barriers, potential privacy concerns, and the need for cultural sensitivity in technology design emerge as critical considerations. Note that the digital divide may affect the accessibility of these technologies for certain demographics, potentially excluding some Muslim travellers from fully benefiting. Privacy concerns, particularly in the context of AI technologies and online community engagement, pose challenges that require ethical considerations. Additionally, cultural nuances in technology design must be addressed to ensure that digital innovations are culturally appropriate and resonate with the diverse Muslim traveller population.

## **Practical Implications**

The implications of these digital innovations extend beyond the theoretical realm, offering practical insights for stakeholders in the halal tourism industry. Industry practitioners can leverage digital platforms to enhance accessibility, cultural engagement, and community building. In addition, virtual mosque guides and AR applications can be employed to create immersive and spiritually enriching experiences for Muslim travellers. Halal food delivery apps present an opportunity for collaboration with halal-certified restaurants, further catering to dietary preferences. Moreover, online community engagement platforms offer a space for shared experiences and recommendations, fostering a sense of belonging among Muslim travellers.

## **CONCLUSION**

This study embarked on an illuminating journey, dissecting the symbiotic relationship between modern digital innovations and the realm of halal tourism. The exploration navigated through an array of dimensions, each shedding light on how technology redefines the experiences of Muslim travellers and enriches their connection with the destinations they traverse. Digital Platforms for Halal Travel Planning stood as formidable gateways, streamlining information dissemination and crafting personalised itineraries. These platforms not only cater to practical needs but also embody the preferences and expectations of Muslim travellers, ensuring that their faith-based requirements are met while aligning with their distinctive tastes.

Virtual mosque guides emerged as spiritual companions, bridging distances and infusing travellers' journeys with the essence of faith. These guides manifest the aspirations of Muslim travellers to locate places of worship, partake in prayers, and cultivate a sense of spiritual presence, even in unfamiliar territories. Notably, halal food delivery apps transcended convenience, encapsulating the essence of halal integrity. Their seamless integration into the culinary landscape embodies Muslim travellers' preferences for maintaining their dietary commitments without compromising the delight of gastronomic exploration. At the same time, AR emerged as an agent of cultural transcendence, realizing the preferences of Muslim travellers to engage deeply with history, traditions, and local narratives. AR elevates cultural experiences by offering interactive immersion, aligning with the evolving expectations of travellers to connect with the cultural fabric of their destinations. Online community engagement materialised the desire of Muslim travellers to connect with like-minded individuals, exchange insights, and create a global community united by shared values. These platforms reflect the contemporary need for digital spaces that nurture a sense of belonging while resonating with individual expectations. Finally, AI-enabled technologies have the potential to significantly enhance the experience of Muslim travellers in halal tourism by providing tailored, efficient, and innovative solutions.

As the curtain falls on this paper, a new dawn emerges in the world of halal tourism. It is a dawn marked by technological innovation, one that amplifies the aspirations of Muslim travellers and transforms their journeys into narratives of faith, discovery, and shared global connections.

## **Future research**

In acknowledging the facets explored, it is crucial to reiterate that the preferences and expectations of Muslim travellers have been the driving force throughout. However, it is pertinent to note that these digital innovations have limitations. Accessibility barriers, potential privacy concerns, and the need for cultural sensitivity in technology design remain areas that require meticulous attention. As a compass pointing toward uncharted territories, this exploration paves the way for future research. The interplay between these digital dimensions and their cumulative impact on the holistic halal tourism experience remains a fertile ground for further investigation. Therefore, studying the digital literacy and preferences of different generations of Muslim travellers could provide valuable insights into tailoring digital offerings to meet evolving expectations.

Moreover, the current body of literature lacks a comprehensive understanding of the

holistic impact of these digital dimensions on the halal tourism experience. Hence, future studies could adopt a more integrative approach, considering the interplay between different digital innovations and their cumulative impact. This could involve empirical investigations into how the combination of technologies enhances or complicates the overall travel experience for Muslim travellers.

Additionally, considering the potential limitations and challenges associated with digital innovations, research exploring strategies to address accessibility barriers, privacy concerns, and cultural sensitivities is imperative. This could involve user-centric studies to understand the diverse needs and perspectives of Muslim travellers, ensuring that technology solutions are inclusive and respectful of their cultural and religious contexts.

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