



**JOURNAL OF TOURISM,
HOSPITALITY AND
ENVIRONMENT MANAGEMENT
(JTHER)**
www.jther.com



**FORECASTING RELIGIOUS TOURISM IN KARBALA:
ECONOMIC IMPLICATIONS FOR IRAQ'S SUSTAINABLE
DEVELOPMENT (2025-2027)**

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Article Info:

Article history:

Received date: 18.05.2025

Revised date: 02.06.2025

Accepted date: 11.08.2025

Published date: 07.09.2025

To cite this document:

Obieas, M. A., Uraiby, A. O., & Almasoodi, M. F. (2025). Forecasting Religious Tourism in Karbala: Economic Implications for Iraq's Sustainable Development (2025-2027). *Journal of Tourism Hospitality and Environment Management*, 10 (41), 154-168.

DOI: 10.35631/JTHER.1041011

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Abstract:

This study examines religious tourism in Karbala, Iraq as a strategic driver of economic development, analysing its multidimensional impacts and potential for sustainable growth. The research employs a mixed-methods approach using official statistical records from the Holy Abbas Shrine and the Central Bank of Iraq, applying time-series analysis on visitor data from 2016 to 2023. Findings demonstrate remarkable growth in religious tourism, with visitor numbers increasing from 11.2 million to 22 million, representing 96% growth despite temporary COVID-related declines. Statistical modeling through curve estimation provides reliable projections for 2025-2029, indicating continued growth. Economic analysis reveals that the accommodation services of tourism revenue suggest opportunities for economic diversification. The study identifies religious tourism's distinctive characteristics, including resilience to economic fluctuations, year-round continuity with seasonal peaks, and cross-demographic appeal. The research contributes to theoretical frameworks connecting religious tourism with sustainable development while providing practical insights for policymakers. The study concludes that maximizing economic benefits requires balanced approaches, preserving Karbala's religious identity while enhancing infrastructure and diversifying tourism-related economic activities. This research addresses significant knowledge gaps regarding religious tourism's role in economic development within Iraq's unique context.

Keywords:Religious Tourism, Economic Development, Karbala, Sustainability,
Statistical Forecasting, Pilgrimage Economy**Introduction**

Religious tourism in the holy city of Karbala constitutes a vital pillar of the Iraqi economy due to its direct and indirect effects on driving development, especially in cities that witness millions of visitors such as the holy city of Karbala (Ebraheem et al., 2025; Ahmed, 2023). This city has become an attractive center for millions of tourists annually, contributing to the activation of numerous economic sectors such as transportation, hospitality, services, etc. Based on the importance of this topic, this research addresses the future vision of enhancing economic development at the national level through religious tourism in the holy city of Karbala (Toual et al., 2024). Accordingly, the research problem focuses on answering the main question: How can we establish the correlative relationship between the pattern of religious tourism in Karbala and the stimulation of economic development for the next four years (2023-2027).

Karbala is a holy city in central Iraq, west of Baghdad. It's a significant site for Shia Muslims due to the shrines of Imam Hussein and his brother Abbas (Oraibi et al., 2020). Karbala is a major tourist destination, attracting visitors from within and outside Iraq, particularly during significant religious events like Ashura and Arbaeen (Farhan & Nasar, 2022)(Almasoodi et al., 2025).

Due to the religious and historical symbolism that the city possesses, it has become a major spiritual and touristic destination, as religious tourism in it constitutes a pivotal element in the life of the local population and in the structure of the national economy in general. The city annually witnesses the influx of millions of tourists, especially during the season of the forty-day commemoration visit (Arbaeen) of Imam Hussein bin Ali (peace be upon them), which is considered the largest annual religious human gathering in the world (Al-Shaibani, 2024). The Holy Abbas Shrine has recorded increasing numbers in recent years, with the number of tourists reaching about 16.3 million, then 21.2 million in 2022, and 22 million in 2023 (Al-Shebillawy et al., 2024).

Compared to recreational tourism, religious tourism in the holy city of Karbala differs in its nature, as it has a ceremonial and doctrinal character and is represented in collective and individual visits to perform religious rituals, which gives it a special social, cultural, and economic dimension (Fahad et al., 2023). From this perspective, religious tourism contributes to creating seasonal and permanent job opportunities, stimulating the local market, and raising the level of religious and cultural awareness among tourists and residents alike (Go & Kang, 2023; Lei et al., 2023).

In light of the above, a number of researchers have called for investing this religious momentum in achieving social peace and converting tourism returns into development projects that enhance stability and prosperity in the city and the governorate as a whole (Almasoodi et al., 2024b). Therefore, the experience of the holy city of Karbala in hosting millions of tourists annually is considered a model that should be invested in within the framework of a sustainable

vision based on the balance between preserving religious identity and achieving economic benefit (Mahdi, 2025). The importance of this research emerges through the religious significance of Karbala and its religious, historical, cultural, and civilizational heritage extending for thousands of years, which contributes to enhancing economic development at the national level through religious tourism to this holy city (Almasooudi, 2024). The research aims to present a conceptual framework for religious tourism and economic development, the future relationship in stimulating economic development and the pattern of religious tourism for the holy city of Karbala and Iraq in general, and to measure and predict the future relationship between economic development and the pattern of religious tourism for the holy city of Karbala and Iraq in general for the next four years from 2025 to 2029.

In the contemporary global landscape, religious tourism represents one of the most resilient and rapidly growing segments of the travel industry (Pu et al., 2023). Unlike conventional tourism, which may fluctuate significantly during economic downturns or political instability, faith-based travel demonstrates remarkable consistency owing to its deep-rooted connection to spiritual obligations and cultural identity (Chen, 2023; Atiyah et al., 2023). This phenomenon is particularly evident in the context of Karbala, where the annual Arbaeen pilgrimage consistently attracts tens of millions of visitors, making it potentially the largest regular human gathering on Earth (Ahmadi Zahrani et al., 2024; Almasooudi et al., 2023). Despite this extraordinary scale, the economic dimensions of this phenomenon remain understudied in academic literature, creating a significant knowledge gap that this research endeavors to address. The intersection of economic development and religious tourism presents a unique analytical challenge, as it encompasses both quantifiable economic impacts and intangible cultural and spiritual dimensions. Furthermore, this research acknowledges that religious tourism in Karbala does not exist in isolation but forms part of a broader ecosystem of religious sites across Iraq, including Najaf, Samarra, and Baghdad. The research examines how Karbala's development can serve as a catalyst for integrated tourism development across these interconnected sacred destinations.

Literature Review

The definition of tourism has evolved through various disciplines due to its multifaceted nature. The World Tourism Organization defines tourism as activities undertaken by individuals traveling to places outside their usual environment for less than one consecutive year for leisure, business, or other purposes not related to paid activities at the destination (Peeters et al., 2024; Alhasnawi et al., 2024). From an academic perspective, tourism represents a social, economic, and cultural phenomenon involving the movement of individuals from their regular environment to a temporary one for leisure, religious obligations, or cultural exploration. The existing literature on religious tourism and economic development reveals several theoretical gaps. First, there is insufficient theoretical exploration of the causal mechanisms connecting religious tourism to broader economic impacts beyond direct revenue generation. While the literature identifies various channels through which religious tourism contributes to economic development, it lacks comprehensive theoretical frameworks explaining how these mechanisms interact and potentially reinforce one another (Jasim et al., 2023; Ebraheem et al., 2025; Toual et al., 2024).

Additionally, current theoretical approaches inadequately address the sustainability dimensions of religious tourism. Although environmental sustainability is mentioned as an attraction factor, the literature fails to develop robust theoretical models integrating economic, social,

environmental, and cultural sustainability within religious tourism contexts. Furthermore, existing theoretical frameworks insufficiently capture the unique characteristics distinguishing religious tourism from other tourism forms, particularly regarding motivational factors, spending patterns, and destination loyalty. The theoretical understanding of how these distinctive features influence economic outcomes remains underdeveloped.

Several significant research gaps exist in the current literature on religious tourism and economic development. There is a notable absence of comprehensive empirical studies quantifying the economic impact of religious tourism across different geographical and cultural contexts (Almasoodi et al., 2023). Most existing research focuses on case studies without establishing generalizable patterns or comparative analyses. The literature also lacks longitudinal studies examining the long-term economic effects of religious tourism, particularly regarding sustainable development outcomes. Research insufficiently addresses how religious tourism's economic impacts evolve over time and how they might contribute to or hinder long-term sustainable development goals (Hussain et al., 2024; Husseinst et al., 2024; Almasood et al., 2024).

Furthermore, there is limited research on the distributional effects of religious tourism's economic benefits among different stakeholder groups and community segments (Fadhil et al., 2024). Questions regarding who benefits most from religious tourism development and how these benefits might be more equitably distributed remain largely unexplored. Additionally, the literature shows inadequate investigation into the potential negative economic externalities associated with religious tourism, such as inflation in local economies, displacement of traditional economic activities, or over-dependence on tourism revenues. A more balanced assessment of both positive and negative economic impacts would strengthen the research foundation in this field (Hassan et al., 2024; Christou et al., 2023).

Religious tourism specifically refers to travel aimed at visiting sacred sites, representing one of the most significant tourism categories in the Islamic world (Khan et al., 2024). It encompasses the movement of tourists from their residences to other areas for religious visits or fulfilling religious duties through specific rituals or ceremonies associated with religious teachings. Religious tourism has distinctive characteristics: it tends to be short-term, centered around specific dates for religious ceremonies, remains relatively unaffected by climate fluctuations, and fulfills intrinsic motivations across socioeconomic classes (Apchain & MacCannell, 2024; Almasoodi & Rahman, 2023). Based on the existing literature, tourism can be conceptualized as a human, social, economic, and cultural activity involving people traveling from their permanent residences to other destinations within or beyond their national borders for relaxation, recreation, exploration, learning, or treatment. Tourism serves as an effective catalyst for sustainable development and promotes understanding among peoples and civilizations (Almasooudi & Rahman, 2024).

Religious tourism, more specifically, represents a pattern of tourism focused on visiting holy places or sites with religious significance, either for performing worship rituals and religious ceremonies or for acquiring cultural and spiritual knowledge related to religious beliefs (Rosak-Szyrocka et al., 2023; Almasoodi et al., 2024a). It stands as one of the oldest forms of tourism, playing a crucial role in preserving the religious and cultural identity of communities while effectively contributing to local economic stimulation and community development. The literature identifies several key attractions driving religious tourism: Transportation and

accommodation infrastructure constitute a fundamental attraction, encompassing well-developed road networks, diverse accommodation options including hotels and hostels, and well-prepared religious shrines and commercial establishments (Ohlan & Ohlan, 2024; Almasoodi et al., 2023). Complementary tourism services represent another crucial attraction, including advanced health services, emergency centers, and robust security measures ensuring tourist comfort (Das et al., 2024). Shopping and commerce facilities, particularly local markets, play a significant role in attracting tourists and enhancing their experience at religious destinations. Environmental sustainability has emerged as an increasingly important factor in tourist attraction, including the preservation of religious and natural sites and the implementation of sustainable environmental solutions. The institutional framework encompasses all cooperating institutions providing various forms of support, from protection to financial incentives, aimed at attracting tourists (Nasib et al., 2023; Almasooudi et al., 2023).

Evolution of Economic Development Concept

The concept of economic development gained prominence after World War II, particularly in the early 1950s, when newly independent countries across Asia, Africa, and Latin America began searching for developmental models to advance their economies relative to industrialized nations. The 1970s witnessed a paradigm shift toward incorporating social dimensions into the development process, recognizing that economic growth alone does not constitute genuine development unless accompanied by poverty reduction, decreased unemployment, and equitable wealth distribution. This evolution led to the emergence of the human development concept adopted by the United Nations Development Program in 1991 (Wang et al., 2025).

In recent decades, economic development has become increasingly comprehensive, incorporating environmental and institutional aspects through modern concepts like sustainability, governance, and digital transformation (Cherednichenko, 2024). Consequently, economic development has transcended mere GDP growth to become a multidimensional process encompassing human empowerment, social justice, environmental protection, and investment in knowledge and technology as foundational pillars for achieving human well-being and societal stability (Pernici et al., 2023).

Economic development resists a universally agreed-upon definition due to its breadth and complexity, encompassing numerous dimensions and subtopics related to geographical, social, and political contexts. The primary goals of economic development may vary across societies based on their priorities and circumstances. Several perspectives define economic development as: A process involving structural changes in the national economy aimed at improving individual living standards and enhancing economic competitiveness, emphasizing sustainable growth and human resource development. A comprehensive process aimed at improving living standards through sustainable growth, social justice, and equitable wealth distribution among society members. A process seeking sustainable growth and balanced development across regions, accounting for environmental and social dimensions (Qian & Acs, 2023; Purnamawati et al., 2023).

Religious Tourism's Role in Economic Development

Religious tourism serves as a significant economic driver for countries and regions hosting holy religious sites, contributing to economic development through multiple channels: It substantially increases local and international revenues through tourists' direct spending on various economic activities, including accommodation, transportation, and food (Ebraheem et

al., 2025). It creates new employment opportunities across multiple sectors, including hospitality, transportation, security services, and infrastructure development, with job prospects expanding proportionally to tourist numbers (Ahmed, 2023; Alnaqeeb et al., 2025). It drives infrastructure improvement through investments in housing facilities, roads, transportation, and public amenities, enhancing local residents' quality of life and facilitating broader national development (Al-Hamd & Jasim, 2025). It supports small and medium enterprises, which expand with tourist influxes, thereby strengthening the local economy by improving income levels and promoting entrepreneurship. It contributes to economic sustainability by encouraging the preservation of holy sites, increasing interest in these locations, and protecting them for future generations. Investments in religious tourism can enhance long-term economic growth by continuously attracting tourists (Moscatelli, 2024).

Methodology

The methodology's normality testing using the Shapiro-Wilk test explains how the paper confirms the statistical reliability of its projections, as explicitly stated in section 3.2.2 where normal distribution patterns are verified for both actual and predictive data (de Souza et al., 2023; Yazici & Yolacan, 2007). The methodological integration of quantitative and qualitative approaches enables the paper's comprehensive analysis of both direct economic impacts (accommodation revenues at 95% of tourism income) and broader development implications, including infrastructure development, employment creation, and sustainability concerns. By avoiding over-reliance on self-reported data, the methodology ensures the analysis remains grounded in verifiable economic indicators, strengthening the paper's evidence-based conclusions regarding religious tourism as a resilient and strategic driver of Iraq's economic development (Yap & Sim, 2011). Official Statistical Records - Sourced from the Holy Abbas Shrine and Central Bank of Iraq to ensure data validity and reliability. These institutions maintain sophisticated electronic monitoring systems, providing credible visitor metrics essential for accurate trend analysis. Time-Series Analysis - Applied to 8-year tourist data (2016-2023) to identify patterns and support forecasting. This longitudinal approach is critical for understanding tourism fluctuations across political and economic cycles. Curve Estimation - Selected for forecasting due to its statistical significance ($p=0.035$) and high explanatory power ($R^2=0.930$), enabling reliable projection of visitor numbers for 2024-2027. Normality Testing - Shapiro-Wilk test utilized to validate distribution normality, ensuring statistical assumption compliance necessary for predictive model validity (Razali & Wah, 2011). The quantitative component facilitates objective measurement of tourism's economic impact, while qualitative elements explore the complex relationship between religious identity and economic development. This integration creates a comprehensive analytical framework that addresses both empirical trends and contextual factors. The focus on official data sources mitigates potential research bias, while the statistical modeling approach allows for evidence-based policy recommendations. The normal distribution confirmation through Shapiro-Wilk testing strengthens the predictive model's reliability (Dudley, 2023). The methodology deliberately avoids sole reliance on self-reported survey data, which could introduce subjective bias in religious tourism research. Instead, it emphasizes verifiable economic indicators and visitor statistics, creating a robust foundation for analyzing this significant economic sector that has demonstrated 96% growth over the studied period.

The methodology's focus on official statistical records from the Holy Abbas Shrine and Central Bank of Iraq directly supports the paper's data presentation in Tables 3.2 and 3.3, which form the foundation of the analysis. The time-series analysis approach explains how the research

effectively tracked the 96% growth in religious tourism from 2016-2023, capturing both the COVID-related decline and subsequent recovery.

Results

This section initiates the empirical analysis phase of the research. It focuses on tourist visitation data for Karbala's holy city from 2020 to 2023. Particular attention is given to the Arbæen pilgrimage commemorating Imam Hussein (peace be upon him). The methodology utilises verified official statistics from the Holy Abbas Shrine. This institution serves as a principal authority for pilgrimage management. It quantifies visitors through sophisticated electronic monitoring systems. These empirical datasets form the foundation for subsequent statistical analyses. They enable the extrapolation of tourist volume projections for the upcoming four-year period. The quantitative framework employs authoritative data sources. This robust approach supports evidence-based forecasting models. These models identify trends, seasonal variations, and growth patterns in religious tourism. The analysis specifically targets this significant pilgrimage destination and its economic implications.

Table: 1 Number of Tourists for Religious Visits in Iraq (2016 - 2023)

No	Number of local and foreign tourists	Years
1.	11,210,367	2016
2.	13,874,818	2017
3.	15,322,949	2018
4.	15,229,955	2019
5.	14,553,308	2020
6.	16,327,543	2021
7.	21,198,640	2022
8.	22,019,164	2023

Source: The Central Bank of Iraq Statistical Bulletin, tourism Annual Department of Statistic 2024.

The data presented in Table 1 provide significant insights into Iraq's religious tourism sector, particularly focusing on pilgrimage visits. Table 3.2 demonstrates a clear upward trajectory in the number of local and foreign tourists visiting religious sites in Iraq from 2016 to 2023. Despite a slight decline in 2019-2020 (possibly attributable to the COVID-19 pandemic), the sector showed remarkable resilience with substantial growth resuming in 2021. Most notably, the period from 2021 to 2023 witnessed accelerated growth, with tourist numbers increasing from 16.3 million to 22 million, representing a 35% increase over just two years.

Table: 2 Total Tourism Revenue in Iraq (2020)

Province	sleeping Wages	Sales	Other	Total
Karbala	47,910,949	1,811,711	720,000	50,442,660

Source: (Al-Suraifi & Swadi, 2021), Modified by the Author. Currency (million dollars)

Table 2 provides a detailed breakdown of Karbala's tourism revenue for 2020, totaling approximately \$50.4 million. The majority of this revenue (95%) derived from accommodation services, with much smaller contributions from sales (3.6%) and other sources (1.4%), highlighting the economic significance of lodging infrastructure in supporting religious tourism activities.

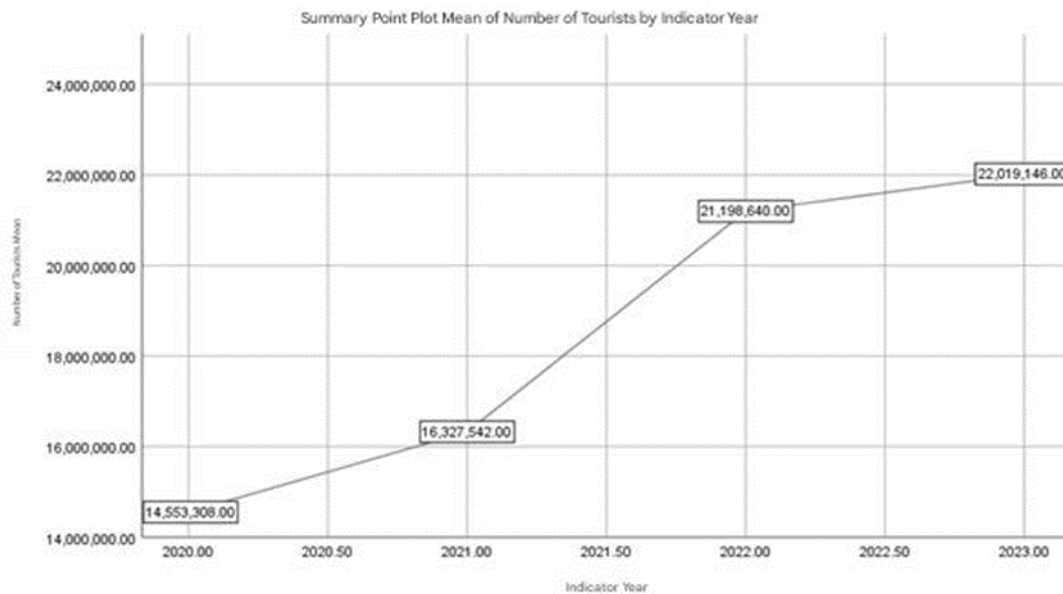
Table 3: (Curve Estimation)

Model Summary and Parameter Estimates							
Dependent Variable:							
Equation	Model Summary					Parameter Estimates	
	R Square	F	df1	df2	Sig.	Constant	b1
Linear	.930	26.731	1	2	.035	11707506.000	2726861.200

The table above shows the results of the Curve Estimation test, where we note that the value of "Sig." is (0.035), which is less than the adopted significance level (0.05), which confirms that the model is statistically significant and can be relied upon to explain the relationship between the research variables.

Future Predictions in the Number of Tourists

As a continuation of the Curve Estimation test, the chart below shows both the current data (number of tourists) (previous years) and the predicted data (number of tourists) for the future period (coming years), which includes the years from 2024 to 2027, and this period has been distinguished by red-colored brackets, where the holy city of Karbala is expected to witness a noticeable increase in the number of tourists. From this perspective, the chart was adopted as an important analytical tool to extrapolate future trends, as these expectations are based on accurate statistical data collected from official sources by the researcher.

**Figure 1: Annual Growth Pattern of Religious Tourism in Karbala (2020-2023)**

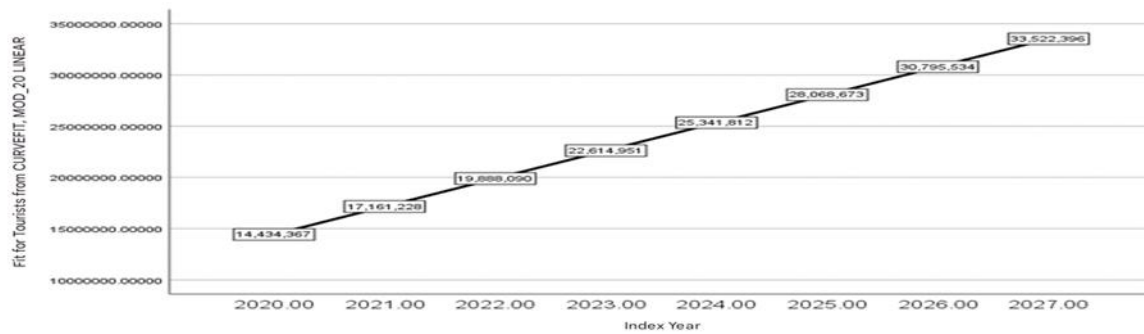


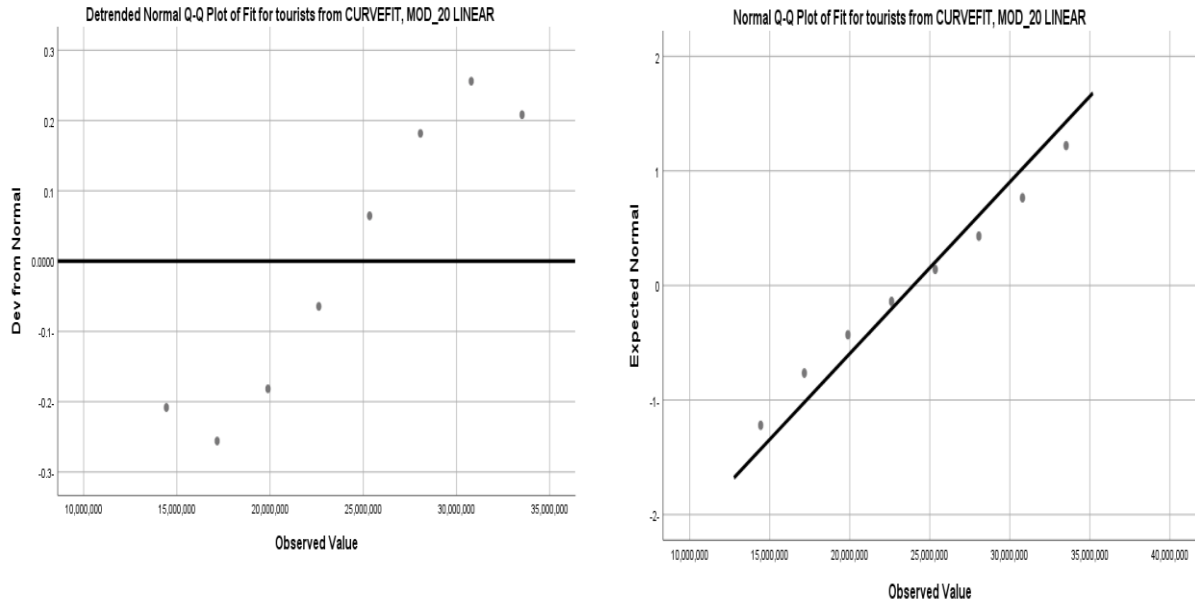
Figure 2: Predictive Modeling of Religious Tourist Arrivals to Karbala (2020-2027)

The Credibility of Future Predictions of Tourist Numbers

To determine the credibility of predicting the number of tourists during the coming years, the researcher conducted the Shapiro-Wilk test, as shown in the table below, as it is one of the sensitive statistical tests in evaluating the assumption of normal distribution in predictive models. Based on the test results, which were obtained at the level of ($\alpha = 0.05$), the researcher can confirm that all actual data and predictive data show a normal distribution pattern. The graphs below illustrate what was previously explained.

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Number of tourists	.105	8	.200*	.975	8	.933
*. This is a lower bound of the true significance.						
a. Lilliefors Significance Correction						

Table 4: Normality Tests for Religious Tourist Data (2016-2023)

Figure 3: Detrended Normal Q-Q Plot Validating Distribution of Tourist Arrivals Data**Figure 4: Normal Q-Q Plot Confirming Statistical Normality of Tourism Data**

Theoretical and Practical Implications

This study presents significant theoretical and practical contributions to the field of religious tourism and economic development. From a theoretical perspective, the research addresses a crucial knowledge gap by expanding the conceptual frameworks linking religious tourism and economic development, particularly within the context of globally significant holy cities. The research proposes an integrated theoretical framework that transcends the focus on direct revenue to encompass an analysis of the complex causal mechanisms connecting religious tourism flows with sustainable economic development. From a practical standpoint, the study offers a predictive model based on official statistical data that can assist decision-makers in infrastructure planning and efficient resource management. The statistical analysis of data from 2016 to 2023 provides a reliable foundation for forecasting tourist numbers for upcoming years (2024-2027), enabling planners to prepare in advance for accommodating increasing visitor numbers. The research also highlights the practical importance of religious tourism as a sustainable economic driver, particularly given its resilience in the face of economic and political fluctuations. The data illustrate how religious tourism in Karbala rapidly regained its growth momentum following a slight decline during the COVID-19 pandemic, confirming its resilience and recovery capacity.

The study further indicates the necessity of adopting an integrated approach that balances economic benefits with preserving the religious and cultural identity of the holy city. This necessitates the development of sustainable planning strategies that respect the sanctity of the site whilst enhancing the authentic visitor experience and maximising economic returns, thereby creating a model that could be adapted for other religious tourism destinations globally.

Discussion and Conclusion

The study results demonstrate a clear upward trajectory in religious tourist numbers to the holy city of Karbala, with a notable increase from 11.2 million in 2016 to 22 million in 2023, representing a growth rate of approximately 96% during this period. Future projections, based on a reliable statistical model (Curve Estimation) with a significance level of 0.035, indicate continued growth in the coming years, affirming the importance of religious tourism as a strategic factor in Iraq's economic development (Heidari et al., 2021).

The research draws attention to the concentration of tourism revenue in the accommodation sector (95% of total revenue), suggesting untapped opportunities in other sectors such as sales and diverse services. This concentration calls for diversification of economic activities associated with religious tourism to maximise its developmental impact and ensure more equitable distribution of returns amongst local stakeholders. Religious tourism in Karbala exhibits unique characteristics that establish it as a sustainable development driver, most importantly its year-round continuity with peaks during specific religious occasions, its ability to attract visitors from various social and economic strata, and its connection to deep-rooted spiritual and cultural motivations that transcend conventional recreational drivers.

The study concludes that achieving sustainable development through religious tourism requires an integrated approach combining investment in infrastructure and human capacity development, whilst preserving the religious and cultural identity of the holy city. It further emphasises the importance of accurate documentation of tourism data and their inclusion in international databases as a foundation for formulating effective development policies that recognise the distinctive nature of religious tourism and its potential contributions to broader economic objectives.

Contributions and Future Directions

This study offers significant scholarly contributions to the field of religious tourism and economic development research, representing one of the few studies examining the relationship between religious tourism and economic development in Iraq using advanced quantitative methodology. The research presents a predictive model based on documented official data, characterised by its high capacity to forecast future tourist numbers, thus providing a valuable tool for decision-makers and planners within the field.

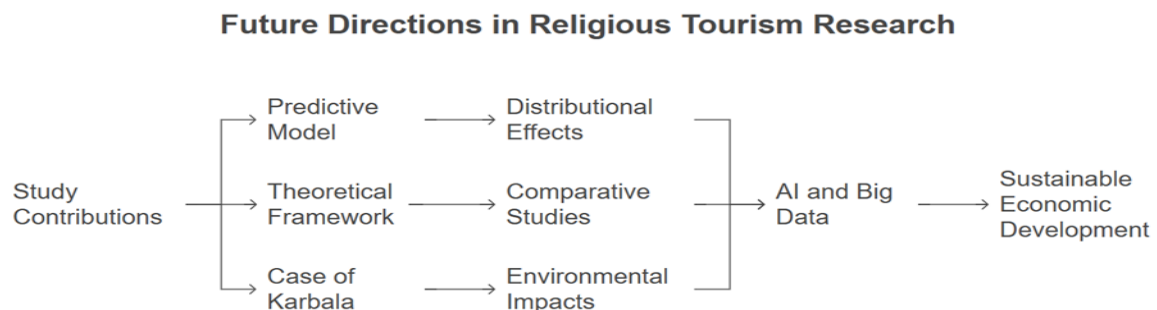


Figure: 5 Future Directions on Religious Tourism Research

Additionally, the study contributes to developing theoretical understanding of the relationship between religious tourism and sustainable development by presenting an analytical framework that transcends traditional concepts to encompass economic, social, environmental, and cultural dimensions. The research further adds to scientific knowledge by highlighting the case of Karbala as a unique model of religious tourism with significant economic impact, particularly with its hosting of the Arbreen visitation, considered one of the largest human gatherings globally. In light of the research findings, several future directions can be proposed to enhance this research domain. Firstly, there is a need for studies addressing the distributional effects of economic returns from religious tourism amongst various segments of the local community. Secondly, comparative studies between Karbala and other sacred cities worldwide could be conducted to extract best practices in religious tourism management. Thirdly, research examining the environmental impacts of intensive religious tourism and how to develop environmentally sustainable tourism models is required. Fourthly, studies utilising artificial intelligence techniques and big data in predicting religious tourism movements and analysing tourist spending patterns with greater precision could be developed to better understand the economic dynamics of this distinctive form of tourism. These proposed future directions would complement the current study and contribute to a more comprehensive understanding of how religious tourism can serve as a sustainable driver for economic development whilst preserving cultural heritage and religious significance.

Acknowledgment

The author(s) thank the reviewers very much for their valuable comments on the manuscript.

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