Original Research Article

Omniscient Pte.Ltd.

Analyzing the Impact of Landscape Architecture and Urban Heritage Preservation on Iraq's Tourism and Economy from 2005 to 2020

Anfal A. Hamodat[1,*], Mazlan M. Tahir[2]

[1] Department of Architecture, College of Engineering, University of Mosul, IRAQ
[2] Department of Architecture, Faculty of Engineering and Built Environment, Universiti Kebangsaan Malaysia (UKM), Bangi, Malaysia

*Correspondence to: Anfal A. Hamodat, Department of Architecture, College of Engineering, University of Mosul, IRAQ; Email: anfal.azzam@uomosul.edu.iq.

Abstract: The historical sites of Iraq face escalating threats due to increased urbanization, economic volatility, and inadequate planning measures. Notwithstanding their cultural and economic importance, scientific research connecting economic variables to the sustainability of urban heritage remains few.

This research combines economic and spatial analysis with heritage protection to provide a framework for long-term city planning.

The study creates a quantitative model that links economic success with urban design and landscape engineering. This gives policymakers useful information.

Time series data from 2005 to 2020 were used in a scientific way. With SPSS, descriptive statistics, correlation matrices, and linear regression were used to look at key variables like tourism income, tourism spending, GDP, inflation, and the political stability index.

The findings indicate a robust correlation between tourism income and expenditure, with GDP exerting a significant influence on tourism performance, thereby affirming that economic growth positively impacts heritage-related tourism. Political stability exerted minimal influence, especially in religious and historical cities, where cultural factors-maintained visitor traffic. Inflation exhibited a moderate impact. Economic expansion is positively correlated with increased tourism revenues, highlighting the role of urban design and landscape planning in enhancing site sustainability.

The research underscores the importance of integrating sustainable urban design within national tourism strategies and promotes interdisciplinary collaboration for the preservation of Iraq's urban heritage.

Keywords: Historic urban landscapes; Landscape architecture; Heritage conservation; Urban sustainability; Tourism planning

1. Introduction

Iraq's cultural identity and economic potential have long been rooted in its diverse landscapes and rich urban legacy. The preservation and regeneration of ancient urban landscapes have become crucial opportunities and challenges for sustainable development in the wake of conflict, growing urbanization, and changing economic priorities. Given that both landscape architecture and urban heritage preservation work together to influence the physical, social, and economic makeup of Iraqi cities, their interactions are especially important.

Iraq's urban historical sites, including the historic centers of Baghdad, Najaf, Karbala, Erbil, and Mosul, embody centuries of architectural, religious, and social history. Their preservation is essential for sustaining cultural identity and promoting economic resilience via tourism and creative sectors. These sites, however, are threatened by neglect, unregulated development, and the consequences of conflict, resulting in the erosion of traditional character and economic deterioration in local communities.(Al Sultan & Al-Thahab, 2023; albayati & Alobaydi, 2023; Farhan et al., 2025). The incorporation of landscape architecture ideas, such as green infrastructure and contextual urban design, is recognized as a crucial approach for rehabilitating and improving these environments, rendering them appealing to both residents and visitors.(Al-Samawetli &

Skopincev, 2023; Haseeb et al., 2023; Matthews et al., 2020; Sumayah, 2019)

Heritage and eco-tourism are becoming an alternative to Iraq's oil-dependent economy. The sector is underdeveloped due to poor infrastructure, preservation initiatives, and stakeholder collaboration.(Khudhair Al-jumaily & Tahseen Maki, 2020; Matthews, 2019; Mohammed et al., 2023; Talib et al., 2025). We find that recent research has highlighted the need for innovative planning, with community participation, and sustainable architectural interventions to enhance the economic value of archaeological and heritage landscapes while preserving their historical and environmental integrity together. (Al-Samawetli & Skopincev, 2023; Al-Samawetli & Skopintsev, 2025; Mohammed et al., 2023; Salih et al., 2024).

This study turned towards quantitative analysis to clarify the implicit and direct relationships between landscape architecture, the process of preserving urban heritage, archaeological tourism, and economic factors in a country like Iraq during the period from 2005 to 2020. We find that this study analyzed both case studies with existing frameworks, policies, and empirical data to identify effective strategies for using Iraq's archaeological urban heritage to enhance economic diversity first and then promote sustainable urban development in its various aspects. Show **Fig.1**.

Fig 1. Framework for Linking Landscape Planning, Sustainability, and Urban Conservation

1.1 Literature Review

The integration of theoretical architecture with urban planning is one of the most prominent trends in dealing with historic urban areas. It takes a holistic approach that values cultural heritage as a functional element of the urban fabric rather than an impediment to development. Recent research has shown a shift towards "integrated conservation" integrating

conservation concepts with urban planning tools and sustainable development initiatives.

First: Integrated conservation theories:

Interdisciplinary heritage conservation and spatial planning approaches are growing, according to recent studies. Comparative studies in Amsterdam (Netherlands) and Ballarat (Australia) have shown that different institutional concepts and multiple references

that manage cultural value continue to hinder conservation and planning policy integration (Tarrafa Silva et al., 2023). The Integrated Framework addresses these issues by treating heritage as a developmental asset rather than a regulatory impediment.

Ecological System Theory, used in theoretical architectural planning, views the city as a multi-level ecosystem and integrates buildings, spaces, and natural elements using ecological design principles (Kezhen, 2013).

The concept of the "spirit of the place" (Genius Loci) also emerged as an important entry point for understanding the relationship between sensory perception and spatial composition. A recent study in the historic Xiaoshi district of Hangzhou (China) used advanced text analysis techniques (LDA topic modelling) to explain how the vacuum's architectural language influences the tourist experience and sensory identity of the place (Zhao & Ren, 2024).

Second: HUL: Historical Urban Landscape Approach:

UNESCO established the "Historic Urban Landscape – HUL" perspective in 2011 to go beyond standard conservation strategies. The Kano research in Nigeria found that planning focusing on society's present demands without considering the heritage vision is destroying the city's traditional urban shape (Kosori et al., 2023). Researchers suggested integrating theoretical architects into planning teams to change urban shape using theory and design.

- Integrated planning methodologies:

i. **Multi-target algorithms:** In recent years, multi-goal optimal evolution algorithms like SPEA2 have been used to reconcile urban expansion requirements and historical value protection. This remote sensing strategy in large Chinese cities has provided mathematical balancing solutions that consider environmental, economic, and cultural factors (Gao & Zheng, 2024).

ii. **Landscape Charter theoretical personality assessment:** Research like (YUN et al., 2025) A technical framework that integrates "scene gene" theory with HUL ideas to distinguish historical architectural landscape genes. This concept separates regions under stringent protection from those that can be rehabilitated or developed.

iii. **Vision:** The Tianjin Woodada neighbourhood research shows that sensory visual analysis can objectively support planning decisions. Geographic information systems were relied upon to determine the "visual sensitivity index" for areas most vulnerable to losing their aesthetic and cultural value (Fang et al., 2021)

iv. **Balancing the variables of conservation and development:** The process of achieving a balance between them is a recurring dilemma. According to (Wang & He, 2017), "procedural planning" dividing the project into four phases (preparation, planning, implementation, evaluation) ensures that design ideas are realistically implemented while preserving historical character.

v. **Political and administrative issues:** Despite efforts, public policies in Indonesia lack complete legislative coverage, sufficient institutional coordination, and funding incentives, impeding conservation and planning integration (Lubis et al., 2024). Studies advocate restructuring local political institutions and increasing social engagement.

vi. **Community Engagement:** The research emphasises that community participation is key to conservation and sustainability measures. For the historical city of Thimi (Nepal), the absence of participation was the weakest sustainable conservation mechanism, and researchers proposed fully participatory techniques (Datta Bhatta et al., 2023). Research in Malaysia and Puerto Rico indicates that community participation in climate and disaster risk assessment improves conservation and response planning (Ariffin et al., 2023; Vega & Díaz, 2018).

Third: Case Studies:

- Landscape Transformation Creates Urban Heritage

International applied studies indicate how landscape-based urban planning may preserve cities' historical identity, like Pittsburgh. The city's hills, rocks, rivers, and valleys required planners to use site-appropriate urban design ideas. We find that bridges with stairs and tunnels, in addition to historical cliffs, have become an important part of the city's visual and urban identity, which has generated an interesting relationship between these natural components and the structure of the well-known American rectangular network.

Pittsburgh's Urban Planning Department has designated protected historical heritage areas with special design and planning laws to preserve the historic fabric, demonstrating how theoretical planning and urban conservation can be integrated into urban legislation.

(Lovra & Sarihan, 2024).

- Integrated Planning for Tourism Development:

Research on integrated tourism planning in Lahat Regency, South Sumatera Province, illustrates the amalgamation of foodscape and landscape architecture to construct heritage tourism development models. The research combined two towns with distinct yet complementary resources—Tanjung Sirih's culinary offerings and Lubuk Sepang's natural scenery—to develop a cohesive tourism experience. This method defines foodscape as the amalgamation of food, individuals, and environment, whereas landscape architecture includes both human and environmental elements.(Prima et al., 2024).

- Geopark Framework for Comprehensive Management:

A 1999 geopark concept provides a framework for unified heritage management. In 2007, the Langkawi Geopark demonstrated the need for coordinated management of varied features and resources to serve multiple stakeholders. This technique accommodates varied needs and interests while promoting sustainable growth. The geopark concept promotes economic growth while maintaining natural and cultural environments in a single management framework.(Aziz et al., 2011).

Summary For Enhanced Integration:

Prior research indicates that integrated planning methodologies provide effective solutions for reconciling historical conservation with modern development requirements in historic urban areas. Nonetheless, obstacles in implementation remain, especially regarding policy integration, stakeholder coordination, and methodological application. The most effective strategies integrate stringent evaluation methods, comprehensive community engagement, and adaptable planning frameworks that balance preservation and development goals.

Subsequent research must concentrate on enhancing implementation tools, tackling governance issues, and designing adaptable models suitable for diverse cultural and geographical situations. Furthermore, greater emphasis must be placed on the effects of climate change on historic districts and the ways in which integrated planning can bolster resilience while maintaining cultural relevance.

2. Method

1ˢᵗ Research design: This research employs a quantitative analytical methodology to assess the correlation between fundamental theoretical constructs in landscape engineering, sustainability, and urban conservation, alongside other quantifiable applied factors utilising temporal data from 2005 to 2020.

This approach is crucial for converting abstract architectural concepts into measurable indicators that can be monitored and analyzed, facilitating an evaluation of the actual relationship between factors affecting the performance of historical areas in Iraq, particularly amid rapid political, economic, and social changes.

The study is found on the fundamental idea that: *"Effective landscape design and urban resilience Enhance the sustainability of historic sites by augmenting tourism attractions while balancing conservation and development."*

Simplified analytical approaches utilising officially published data have been employed and examined through SPSS to extract metadata and establish temporal correlations, facilitating the comprehension of trends without necessitating intricate statistical models.

2ⁿᵈ Theoretical framework and its connection to applied variables: This research originates from the convergence of three primary concepts:

- Landscape Engineering and Urban Planning.
- Environmental sustainability.
- Preservation of historic architectural sites.

These concepts are intricately connected to the research problem concerning the gradual decline of cultural and urban identity in the heritage areas of Iraqi cities, stemming from the lack of cohesive planning that reconciles heritage preservation with the demands of contemporary development.

To obtain a scientific measurement of these theoretical notions, they have been transformed into analytical quantitative variables utilising published official data spanning an extensive timeframe (2005-2020). The subsequent table illustrates this transfer, show **Table 1**.

Table 1. Linking theoretical structures to analytical quantitative variables

Conceptual Concept	Variable Available in Data	Justification for Linking
Landscape Engineering/ Urban Planning	Political Stability Index	Stability is a prerequisite for effective urban planning, affecting the quality of urban environments

Continuation Table:

Conceptual Concept	Variable Available in Data	Justification for Linking
Sustainability	Tourism Revenue, GDP, Inflation	These variables reflect the city's ability to balance economic growth with cultural attraction
Architectural preservation	Development of tourism revenues (as an indirect indicator of urban and historical attraction)	Rising tourism revenues demonstrate the success of urban and heritage conservation strategies

3rd Study Area: Iraqi heritage cities: Quantitative data from the national level was used to support the statistical analysis with a qualitative perspective on the urban and architectural setting using selected models from heritage urban centers in Iraq.

Major models reflect historical significance, planning complexity, and political, social, and urban developments in major urban areas. It was chosen based on architectural heritage density, urban influence, and historic-modern growth overlap.

As analytical markers of Iraqi architecture, these models stand out:

Contemporary pressures causing dysfunction in close-knit historical regions.

Sites reintegrating spatial memory into urban contexts after conflict restoration.

Ritual urban religious places express holiness-residential fabric contradiction.

Tourism density and authentic spatial character conflict in central places.

International historic sites that pioneered architectural preservation and sustainable urban development.

4th Data Sources and Analysis: Internationally recognised data, 2005–2020. Included variables and sources: show **Table 2**.

Table 2. Variable Definitions and Sources

Variable	Description	Source: United Nations
Tourism Revenue[1]	US$ Tourism Revenues	TheGlobalEconomy.com
Tourism Expenditure[2]	Tourist Spending in Iraq	World Development Indicators
GDP[3]	Gross Domestic Product	World Bank
Inflation[4]	annual inflation rate	World Bank
Political Stability[5]	Political Stability Index	Worldwide Governance Indicators

The data was submitted in CSV and Excel formats, thereafter, organized and analyzed via SPSS software tools.

Documentation notes:

- Timelines for all variables have been established to encompass the identical time (2005-2020).

- The original modules of each variable were utilised as provided in databases and transformed into a generally standardized scale during the visual analysis phase.

5th A statistical analysis tool: For this study, SPSS was used to quantify temporal data. SPSS is a globally recognised tool for socio-economic data analysis that can perform precise statistical evaluations transparently, making it suitable for architectural and planning research that interprets urban variables in their temporal contexts. The SPSS analysis used these tools:

a. Statistics Descriptions: Each variable has basic descriptive metrics, including: These indicators have helped us understand each variable's features from 2005 to 2020 and assess data stability or variation. **(Mean) (Standard Deviation) (Median) (Maximum, Minimum):** show **Table 3**.

[1] https://www.theglobaleconomy.com/Iraq/wb_political_stability/

[2] https://www.indexmundi.com/facts/iraq/international-tourism

[3] https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=IQ

[4] https://data.worldbank.org/indicator/FP.CPI.TOTL.ZG?locations=IQ

[5] https://www.theglobaleconomy.com/Iraq/wb_political_stability/

Table 3. 2005–2020 Key Variables

	Mean	SD	Median	Min.	Max.
Million USD in tourism revenue	1686	1039	1647	144	3593
Dollar Tourism Spending: Million	4174	3478	3227	395	10925
USD GDP Billion	163	62	173	50	235
% Inflation	9	17	3	-0.2	65
Status of Politics	-3	0.136626	-3	-3	-2
Forecasted Tourism Revenue	1686	999	1437	-24	3175
Error Remains	1.71E-13	284	21	-681	418

b. **Trend Analysis:** Individual timelines were drawn up to analyse each variable's general direction: **Tourist Revenue, Spending on tourism, The GDP, The inflation rate, Political Stability Index** This analysis linked sudden or gradual variable performance changes to national political or economic contexts. show **Table 4** , **Fig. 2**.

Table 4. Iraqi Economic and Tourism Variables 2005–2020 Trend Analysis Table

Year	TR: Million USD	TE: Million USD	GDP: Billion USD	INF	PSI
2005	168	439	50.07	33	-2.5
2006	144	395	65.15	64.8	-2.6
2007	516	639	87.96	4.7	-2.7
2008	845	794	103.43	6.8	-2.8
2009	1405	1207	117.83	6.8	-2.9
2010	1660	1620	139.86	4.2	-2.8
2011	1543	1836	170.38	5.6	-2.7
2012	1634	2281	218	6.1	-2.6
2013	1682	4835	234.65	2	-2.5
2014	1938	6115	234.65	1.4	-2.6
2015	2833	7934	174	2.4	-2.7
2016	3120	7647	171	0.1	-2.8
2017	2959	8093	197	0.1	-2.7
2018	1986	7855	225	0.1	-2.6
2019	3593	10925	233	-0.2	-2.5
2020	955	4172	181	0.6	-2.4
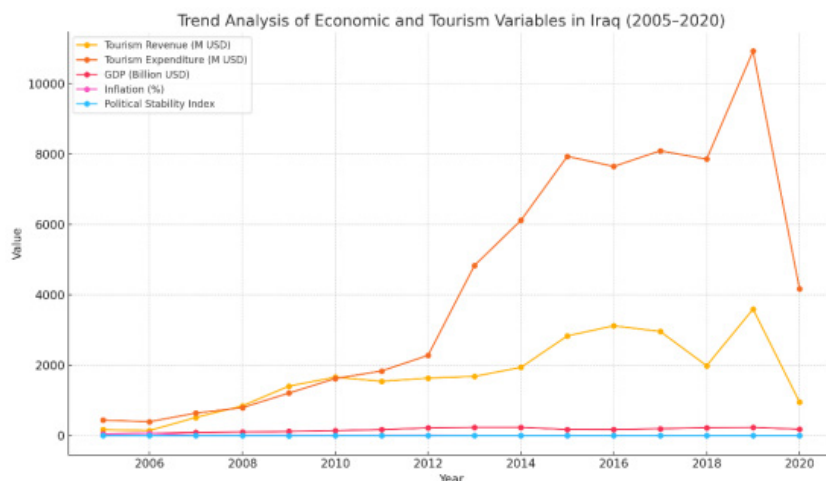
Fig. 2. Trend Analysis Data Table for Iraqi Economic and Tourism Variables 2005–2020

c. **Correlation Matrix:** Simple correlation transactions between fundamental variables were calculated to determine their strength and direction.

Such as the relationship between:

Tourist spending and revenue (direct link), Significant correlation between political stability and tourism performance, Tourism revenue and inflation (often inverse) show **Table 5**.

Table 5. Iraqi Economic and Tourism Variable Correlation Matrix, 2005–2020

	TR: Million USD	TE: Million USD	GDP: Billion USD	INF	PSI
Tourism Revenue Million USD	1	0.896289	0.717098	-0.61344	-0.11617
Tourism Expenditure Million USD	0.896289	1	0.74694	-0.50992	0.220165
GDP Billion USD	0.717098	0.74694	1	-0.66768	0.290592
Inflation Percent	-0.61344	-0.50992	-0.66768	1	0.143631
Political Stability Index	-0.11617	0.220165	0.290592	0.143631	1

d. Qualitative statistical interpretation:

The study used statistical analysis in a qualitative interpretative context to better understand the relationship between numbers and a realistic urban context, as is typical of architectural-urban research. One of the most advanced multidimensional data analysis approaches, statistical qualitative interpretation (interpretive statistical analysis) is used in investigations that integrate quantitative indicators with spatial and cultural readings.

The study examined digital patterns from linear decline, links, and temporal trends in Iraqi cities and their urban and political changes. Even if not directly documented in the data, spatial shifts, especially those associated with landscape engineering and urban planning, supported sustainability by explaining tourism revenue increases in urban contexts with urban development projects or relative stability.

This research attempts to digitally demonstrate relationships, foster an applied understanding of outcomes, and turn indicators into planning guidelines for future design solutions. For instance, the high association between GDP and tourism revenues suggests investing in public spaces and historical monuments as an economic lever. The stabilization index's volatility emphasises the necessity to combine spatial design with public policies to preserve tourism attractions.

- Statistical qualitative interpretation provides spatial and temporal dimensions to numbers, enabling understanding of complex urban relationships and is ideal for architectural studies combining digital rationality and contextual analysis.

5th Study Limitations: This study encountered several challenges and constraints, summarized as follows:

■ **Lack of disaggregated local data:** This analysis uses national data for Iraq because government sources and international databases do not provide city or governorate-level tourist and economic data.

■ This slowed city-by-city geographical analysis model development. The five cities are context-supporting analytical models, not statistical measurement bases.

■ **Direct qualitative variables missing:** Tourism earnings were used to measure "architectural conservation" and "landscape design quality" in historic locations because there were no direct digital variables. The study suggested using cultural tourism as an alternative indicator in urban planning literature to evaluate urban conservation's impact on sustainable tourism destinations.

■ **Overreliance on quantitative analysis without qualitative field instruments:** Interviews, questionnaires, and direct observation were eliminated due to budget constraints. Their inclusion would have added contextual indicators, especially at the municipal level, to the research. This was done by combining quantitative analysis with an interpretive theoretical evaluation.

■ **Limited worldwide adoption:** This study's findings are limited to Iraq and cannot be generalized to other cities in nations with different political, social, and cultural aspects. This requires a methodological framework that can be adopted and modified for similar urban situations.

Despite these limitations, the work provides a solid analytical platform for examining theoretical planning and sustainability. It is an initial contribution that

can be expanded with qualitative tools and local field details.

3. Results and Discussion (10 PT)

1st Initial analysis of the association matrix and its role in supporting research hypotheses

Key economic and tourist metrics from 2005 to 2020 were analyzed using Pearson correlation to determine their bilateral correlations and strength and direction.

Analytical data showed:

■ Tourism expenditure and revenue are strongly correlated, demonstrating the direct relationship between tourism investment and economic gain.

■ GDP and tourist performance are positively correlated, supporting the idea that improving the economy boosts tourism, especially in historic cities.

■ A weak correlation exists between the political stability index and tourism revenues, suggesting that religious or cultural influences may dominate Iraqi tourism more than security concerns.

The results strongly support the H1 alternative hypothesis that "landscape engineering positively influences the sustainability of historic areas," since increased revenues correlate with improved infrastructure, spatial regulation, and urban landscape planning.

These findings contradict the zero-H2 theory, which denies any influence.

2nd: Linking temporal trends to Iraq's context to track all essential indicators and correlate them with Iraq's political and economic climate, their temporal patterns were examined. The results showed:

- Tourism profits began rising in 2010, paralleling a considerable increase in GDP, suggesting that national economic expansion stimulates tourism.

- Tourism expenditure fluctuations may imply state policy changes, tourism investment disruptions, or sectoral support instability.

- A continuous deterioration in the political stability score, with some incremental improvement in recent years, explains city performance disparities.

This temporal analysis supports the study's secondary objective of assessing economic variables' impact on historical locations' sustainability, giving a realistic framework to explain why certain periods do well in tourism. These tendencies support the H1 theory that tourism growth periods are linked to improved urban landscapes and urban planning, although there is no unambiguous signal.

3rd: linear regression analysis implications and planning: To directly quantify the effects of economic and political variables on tourism revenues, linear regression analysis was used. The model showed these results:

- Tourism revenues rise significantly with GDP, making it the most important factor.

- Tourism drives demand and infrastructure development, boosting the local economy.

- Tourism revenues have not changed with inflation, suggesting that tourism may be less subject to short-term inflationary fluctuations or that visitors are not uniformly affected by price changes.

- The Political Stability Index had a small and statistically significant negative effect, demonstrating that local religious and cultural factors influence Iraqi tourism more than security and policy.
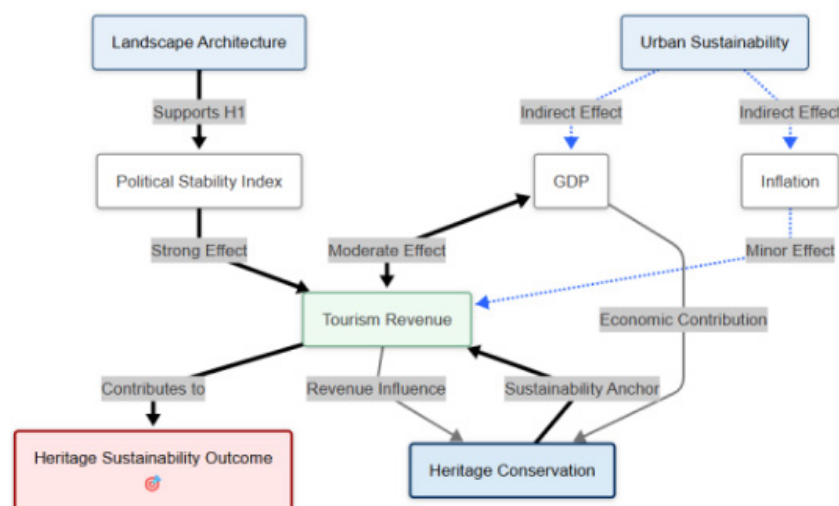

Fig 3. Economics, tourism, and heritage sustainability: a conceptual framework

The results strongly corroborate the H1 hypothesis, showing that GDP indirectly measures urban design and public landscape investment (landscape architecture), increasing tourist attraction.

Statistics contradict the H2 hypothesis that denies a relationship.

Final Assessment: This analysis shows that landscape engineering, part of urban planning, is necessary to preserve Iraq's ancient regions.

Tourism performance improves with economic indicators, particularly GDP, confirming the theory that integrated urban planning boosts heritage site value.

To sustain historic cities, this chapter applies theoretical ideas and recommends integrating tourism strategies with urban conservation and landscape design methods. Show **Fig. 3**.

4. Conclusion and Limitation (10 PT)

The quantitative and theoretical analysis of landscape engineering and Iraq's historic places' sustainability yielded the following results:

- Tourism spending and revenues are positively correlated, indicating that tourism investment boosts economic performance in historic cities.

- GDP is the most important component in tourism's performance, demonstrating that macroeconomic factors are influencing tourism's growth.

- Tourism in Iraq is driven by religious and cultural values that transcend beyond short-term politics; hence, the political stability index did not directly affect tourism profits.

- Through infrastructure and urban environmental development, urban planning and landscape improvement indirectly affect tourism performance, supporting the premise that landscape engineering improves sustainability.

- The findings show that simple statistical models like linear correlation and decline can help evaluate economic-urban interactions and inform evidence-based urban planning.

Reference

[1] Al Sultan, A. R. H., & Al-Thahab, A. A. L. (2023). Maintaining Identity of the Built Environments of Religious Cities: Impact of Expansions at the Historic Karbala, Iraq. *ISVS E-Journal*, *10*(8), 265–288.

https://doi.org/10.61275/ISVSej-2023-10-08-19

[2] albayati, R., & Alobaydi, D. (2023). Conservation of Urban Heritage Landscapes: Lessons from Souq AlSaffarin in Baghdad, Iraq. *ISVS E-Journal*, *10*(8), 48–61.

https://doi.org/10.61275/ISVSej-2023-10-08-04

[3] Al-Samawetli, A., & Skopincev, A. (2023). FORMATION OF THE ARCHITECTURE OF TOURIST OBJECTS IN THE WETLAND OF SOUTHERN IRAQ. *Bulletin of Belgorod State Technological University Named after. V. G. Shukhov*, *8*(9), 62–72.

https://doi.org/10.34031/2071-7318-2023-8-9-62-72

[4] Al-Samawetli, A., & Skopintsev, A. V. (2025). "Sustainable architecture" in wetlands: Experimental approaches to design of eco-tourism sites in wetlands area of Southern Iraq. *E3S Web of Conferences*, *614*, 04008.

https://doi.org/10.1051/E3SCONF/202561404008

[5] Ariffin, W. J. W., Noh, N. A., Azinuddin, M., Ibrahim, A., Ghazalli, F. S., & Abd Rahim, E. M. (2023). CITIZEN ENGAGEMENT IN TANGIBLE HERITAGE CONSERVATION STRATEGIES IN TERENGGANU. *PLANNING MALAYSIA*, *21*(1), 24–35.

https://doi.org/10.21837/PM.V21I25.1221

[6] Aziz, R. A., Hashim, H. S., & Komoo, I. (2011). GEOPARK FOR HERITAGE CONSERVATION: A NEED FOR INTEGRATED PLANNING AND MANAGEMENT. *PLANNING MALAYSIA*, *1*.

https://doi.org/10.21837/PM.V1I1.89

[7] Datta Bhatta, K., Joshi, B. R., & Sharma Paudyal, S. (2023). Integrated Heritage Conservation: Exploring the Role of Community Participation in the Conservation of Thimi. *Journal of UTEC Engineering Management*, *01*(01), 51–63.

https://doi.org/10.5281/zenodo.8113521

[8] Fang, Y. N., Zeng, J., & Namaiti, A. (2021). Landscape visual sensitivity assessment of historic districts-a case study of wudadao historic District in Tianjin, China. *ISPRS International Journal of Geo-Information*, *10*(3).

https://doi.org/10.3390/ijgi10030175

[9] Farhan, S. L., Alobaydi, D., Anton, D., & Nasar, Z. (2025). Analysing the master plan development and urban heritage of Najaf City in Iraq. *Journal*

of Cultural Heritage Management and Sustainable Development, *15*(2), 254–273. https://doi.org/10.1108/JCHMSD-07-2020-0101

[10] Gao, Y., & Zheng, Z. (2024). Using Multi-objective Optimization Algorithms to Balance Landscape Design of Historic and Cultural Districts with Urban Development Needs. https://doi.org/10.1142/S0129156425402268

[11] Haseeb, Q. S., Sumbul, M. Y., & Aziz, A. I. (2023). Sustainability-based hybridization interventions, the urban fabric of Erbil Citadel - Iraq – As a case study. *Alexandria Engineering Journal*, *75*, 615–625. https://doi.org/10.1016/j.aej.2023.04.064

[12] Kezhen, S. (2013). Ecological Conception and Level Analysis in Planning and Design. *Applied Mechanics and Materials*, *307*, 514–517. https://doi.org/10.4028/WWW.SCIENTIFIC.NET/AMM.307.514

[13] Khudhair Al-jumaily, S., & Tahseen Maki, E. (2020). Evaluation of the Framework of Urban Tourism in Iraq. *American Journal of Environmental and Resource Economics*, *5*(3), 50. https://doi.org/10.11648/J.AJERE.20200503.12

[14] Kosori, V., Tablada, A., Trivic, Z., Horvat, M., Vukmirovi, M., Domingo-Irigoyen, S., Todorovi, M., Kaempf, J. H., Goli, K., Peric, A., Abdu Yusuf, D., Zhu, J., Abdullahi Nashe, S., Muhammad Usman, A., Sagir, A., Yukubu, A., Sule Hamma, A., Sharif Alfa, N., & Ahmed, A. (2023). A Typology for Urban Landscape Progression: Toward a Sustainable Planning Mechanism in Kano Metropolis, Nigeria. *Urban Science 2023, Vol. 7, Page 36*, *7*(2), 36. https://doi.org/10.3390/URBANSCI7020036

[15] Lovra, É., & Sarihan, E. (2024). The Formation and Preservation of Urban Heritage Through Urban Landscape Transformation: A Case Study of Pittsburgh. *Land*, *13*(11), 1–28. https://doi.org/10.3390/land13111816

[16] Lubis, L., Wardiyanto, B., & Setijaningrum, E. (2024). Heritage Conservation in Indonesia: Policy Review. *Perspektif Hukum*, 129–146. https://doi.org/10.30649/PH.V24I1.276

[17] Matthews, R. (2019). Heritage and cultural healing: Iraq in a post-Daesh era. *International Journal of Heritage Studies*, 1–23.

https://www.tandfonline.com/doi/citedby/10.1080/13527258.2019.1608585?scroll=top&needAccess=true

[18] Matthews, R., Rasheed, Q. H., Palmero Fernández, M., Fobbe, S., Nováček, K., Mohammed-Amin, R., Mühl, S., & Richardson, A. (2020). Heritage and cultural healing: Iraq in a post-Daesh era. *International Journal of Heritage Studies*, *26*(2), 120–141. https://doi.org/10.1080/13527258.2019.1608585

[19] Mohammed, I. J., Abbawi, R. F. N., & Hasan, N. A. (2023). Exploring Cultural Landscape Values in Riverfront Development: An Examination of the Shatt Al-Arab Riverfront in Basra, Iraq. *International Journal of Design and Nature and Ecodynamics*, *18*(5), 1195–1205. https://doi.org/10.18280/ijdne.180521

[20] Prima, L., Lussetyowati, T., & Adiyanto, J. (2024). *DEVELOPING OF VILLAGE'S HERITAGE TOURISM PLANNING THROUGH INTEGRATED OF FOODSCAPE AND LANDSCAPE ARCHITECTURE AT LAHAT REGENCY. 21*(2), 1–8. http://journals.ums.ac.id/index.php/sinektika

[21] Salih, D. R., Al-Fatlawi, Prof. Dr. H. J. N., & Al-Hasnawi, Prof. Dr. J. K. O. (2024). REVIEW: URBAN RENEWAL OF HISTORICAL CITY CENTERS IN IRAQ. *Journal of Social Sciences and Humanities Research Fundamentals*, *4*(12), 65–67. https://doi.org/10.55640/jsshrf-04-12-10

[22] Sumayah, L. J. (2019). Landscape-town-planning reconstruction of the spatially-planning structure of destroyed cities (On the example of the cities of Baghdad and Mosul). *E3S Web of Conferences*, *138*. https://doi.org/10.1051/e3sconf/201913802017

[23] Talib, R., Alnaqeeb, A., Faaeq Almasoodi, M., Abdullateef, S., Alshammari, H., & Ghanayem, A. (2025). AI-DRIVEN ECO-TOURISM RECOMMENDATION SYSTEMS: AN EMPIRICAL INVESTIGATION OF IMPLEMENTATION SUCCESS FACTORS IN IRAQ. *JOURNAL OF TOURISM, HOSPITALITY AND ENVIRONMENT MANAGEMENT (JTHEM)*, *10*(39), 53–72. https://doi.org/10.35631/JTHEM.1039005

[24] Tarrafa Silva, A., Pereira Roders, A., Cunha Ferreira, T., & Nevzgodin, I. (2023). Critical Analysis of Policy Integration Degrees between Heritage Conservation and Spatial Planning in Amsterdam and Ballarat. *Land 2023, Vol. 12, Page 1040*, *12*(5), 1040. https://doi.org/10.3390/LAND12051040

[25] Vega, J. L., & Díaz, D. (2018). DEVELOPING SUSTAINABLE PLANNING FOR HERITAGE CONSERVATION IN THE TROPICS: A GIS-BASED RISK AND VULNERABILITY ASSESSMENT PROFILE FOR HISTORIC ARCHIVES IN PUERTO RICO. *WIT Transactions on Ecology and the Environment*, *217*, 613–623. https://doi.org/10.2495/SDP180521

[26] Wang, Y., & He, J. (2017). Urban Design of Historic districts Based on Action Planning. *Proceedings of the 2017 9th International Economics, Management and Education Technology Conference (IEMETC 2017)*, 434–438. https://doi.org/10.2991/IEMETC-17.2017.90

[27] YUN, H., HU, Z., & HU, Z. (2025). Optimization of Identification and Zoning Method for Landscape Characters of Urban Historic Districts. *Landscape Architecture*, *32*(1), 114–123. https://doi.org/10.3724/J.FJYL.202404270233

[28] Zhao, Y., & Ren, H. (2024). Sustainable Urban Planning and Genius Loci: A LDA-Based Analysis of Recreational Landscape Imagery in Hangzhou's Qiaoxi Historic District. *E3S Web of Conferences*, *565*. https://doi.org/10.1051/e3sconf/202456503021