

DIGITAL TRANSFORMATION'S ROLE IN ATTRACTING TOURISM INVESTMENTS TO ACHIEVE SUSTAINABLE DEVELOPMENT IN IRAQ

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Abstract

The study aimed analyze role of digital transformation (DT) in enhancing Iraq's ability attract tourism investments, as part of achieving sustainable development (SD) for vital sector, improving competitiveness locally, internationally. The study adopted a descriptive analytical approach by collecting data, information related to reality of Iraqi tourism, the level of digital transformation (DT) implementation, as well as focusing on studying government policies challenges facing digitalization process. The study concluded digital transformation (DT) contributes positively, effectively to improving attractiveness of tourism investments by developing digital infrastructure, employing modern technologies such as e-booking and marketing via digital platforms. The results also indicated that the weakness of technological infrastructure, the lack of human resources skills represent two major obstacles achieving a comprehensive digital transformation in the Iraqi tourism sector study recommended development of an integrated national framework for digital transformation in tourism sector in Iraq, including modernizing the digital infrastructure, using modern technologies, and developing human capital, as well as adopting supportive policies to address challenges with aim of attracting local and foreign investment and achieving sustainable development.

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Introduction

The tourism sector is one of cornerstones of economic, social development in various countries. This is because it creates job opportunities and increases public revenues through tourism spending, which helps achieve growth, (SD). In light of accelerating global shift toward a (DE), (DT) has become an indispensable strategic focus for advancing tourism sector by improving services, enhancing visitor experience, increasing efficiency of attracting investments, with its rich cultural, historical heritage, distinct natural, cultural, religious tourism resources, Iraq is one of countries with the potential to occupy a prominent position on regional, international tourism map. However, reality reveals structural challenges facing this sector, including weak infrastructure, insufficient investments, limited promotional strategies. This has negatively impacted ability contribute effectively to achieving sustainable development. In light of the global shift towards a (DE), digitization has become a fundamental pillar for advancing tourism services and enhancing attractiveness of tourist destinations, contributing to improving visitor experience and enhancing competitiveness to attract local and foreign investment. Accordingly, study aims to analyze the role of (DT) in enhancing the attractiveness of tourism investment in Iraq by assessing current reality of sector, examining adopted digital policies and

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strategies, identifying the obstacles that prevent optimal digital integration, presenting practical visions, strategies support sustainable development by leveraging (DT) to develop the Iraqi tourism sector.

Methodology

1.1 Study's Problem

The study's problem is evident in clear gap between requirements for achieving (DT) in tourism sector, current situation, whether in terms of technological infrastructure, proactive legislation, or required human skills. This gap casts a shadow over country's ability attracts tourism investments, which are a fundamental pillar for promoting sustainable development. Based, study's main problem crystallizes in following question:

- How can (DT) contribute to strengthening Iraq's ability to attract tourism investments, paving way for achieving sustainable development?

1-2 Importance of Study

importance of study lies in focus on strategic role of (DT) in developing tourism sector in Iraq, particularly in face of challenges hinder its growth. The study presents proposals aimed at formulating effective policies, strategies to enhance tourism sector through digitization, thus contributing to achieving sustainable economic and social development

1-3 Study objectives

1. Analyze reality of tourism sector in Iraq and readiness for (DT)
2. Identify policies, strategies adopted by the Iraqi state to support (DT)
3. Identify challenges facing the implementation of (DT) in Iraq.
4. Understanding role of (DT) in enhancing attraction of tourism investment in Iraq.

1-4 Study Hypotheses

1. IT positively impacts attracting investments in tourism sector(TS) in Iraq.
2. Investing in developing (DI), improving human resource skills is one of key factors for success of (DT) in Iraqi tourism.

2. Descriptive Data Analysis – Methodology:

This study relies on a descriptive analytical approach to analyze impact of (DT) on enhancing attraction of tourism investments, role in achieving (SD) within Iraq. This approach is based on an analysis of data; statistics obtained from official bodies on digital transformation indicators and the tourism sector in Iraq.

2-1 Seventh: Study Limits

- Spatial Limits: study was limited to Iraq as the geographical area of research, with a focus on the tourism sector in Iraq.
- Temporal Limits: The study focused on the period between 2000 and 2024, as this period witnessed significant political, economic transformations that impacted - development of tourism sector and its level of (DI.).

2-2 Study Structure

The study included three sections, as follows:

3. Theoretical and Conceptual Framework

Concepts in (DT) & Tourism Digitization term It refers to comprehensive process of redesigning business, organizational processes using modern (DT), with aim of enhancing performance, increasing

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efficiency, and maximizing the competitiveness of organizations, countries [1]. Digital transformation is more than just adopting technology; it involves radical changes in organizational structures, business models, service delivery methods, with the aim of generating added value for organizations, societies alike [2]. concepts of (DT) have varied in academic literature, some of which focus on technology as primary driver of transformation, while others focus on processes, organization as a complementary element to achieving effective (DT) [3]. Modern concepts indicate that digital transformation is a comprehensive process includes integration of technologies such as (AI), cloud computing, big data, Internet of Things into all aspects of institutional work, with aim of improving performance, supporting innovation, ensuring business sustainability [4]. In context, most prominent characteristics of (DT) can be summarized as follows [5]:

- The ability of organizations to smoothly adapt diverse, distinct business environment and enhance their international presence by offering products that meet needs of customers worldwide.
- Striving to achieve excellence by possessing tools that enrich their distinctive ability to compete effectively. Employing latest technological innovations by relying on advanced information technologies with global standards. Developing a high-level technical infrastructure that enables organizations to manage their operations electronically efficiently and in accordance with highest quality standards.
- Adopting a networked organizational model that reflects a spirit of cooperation and strengthens between institutions, both locally and globally. Implementing an approach based on integrity, transparency by clearly defining goals, roles, responsibilities. most prominent benefits or advantages of (DT) initiatives can be summarized as follows: [6].
- At level of government departments: These initiatives contribute to reducing costs, improving performance by streamlining operations and reducing errors in service delivery. It also enhances interaction between various government agencies and supports adherence to highest standards of governance and transparency, while improving departments' ability to effectively implement and enforce law.
- For citizens: The most important benefits are easier access services that are faster, more tailored to their needs, in addition saving time and money resulting from reducing the need travel between institutions to obtain information or complete procedures.
- For companies and the business sector: These initiatives emerge as a tool that enables enhanced cooperation between public and private sectors with the aim of improving service performance and the business environment. In addition to facilitating procedures directly related to commercial transactions, they provide added value in terms of increasing efficiency of operations, especially in e-commerce, they contribute improving attractiveness of investment climate in general. In addition these benefits, (DT) initiatives achieve broader outcomes, such as supporting standard of living & promoting economic growth, as well as enhancing a positive image of government performance by promoting transparency, justice, and combating corruption. [7] The most important dimensions of (DT) are highlighted below:

3-2 Digital Technology

It is cornerstone of (DT) process, effectively contributing to improving organizations' efficiency, developing their services. Thanks to innovative technological tools such as artificial intelligence, cloud computing, and the Internet of Things, organizations are able to accelerate delivery of their services more accurately reduce traditional operating costs, while enhancing customer experience and increasing internal performance. The use of (DT) also contributes to developing organizations' capabilities to collect and analyze data and make strategic decisions supported by accurate results. Technologies such as machine learning help understand market trends, improve financial forecasting, enabling faster

adaptation to environmental changes and enhancing competitiveness. Furthermore, (DT) fosters innovation by providing flexible solutions to complex challenges and facilitating communication and coordination among work teams, both locally and remotely, supporting sustainable growth and expansion. In short, (DT) is a vital factor in empowering organizations, achieving success in a dynamic and challenging environment. (Abdelnabi, Hadi, et al., 2025, p. 5),

3-3 Digital Strategy (DS)

It plays a fundamental role in success of (DT). It represents a comprehensive plan adopted by organizations to enhance their performance, achieve their goals using modern technologies. It includes identifying target sectors, defining objectives, and selecting appropriate digital tools, which contributes to optimizing resources, innovation, , developing internal , external operations (Siyam, 2021, p. 439) This strategy focuses specifically on improving the customer experience using technologies such as artificial intelligence and big data analysis, enabling organizations to better understand their customers' needs and design solutions that meet the demands of a rapidly changing market. This contributes to enhancing communication with customers, increasing customer satisfaction and loyalty, building long-term relationships. (Joudah, 2023, p. 23), A digital strategy is also characterized by flexibility in face of constant change, as it requires periodic updating of plans, investment in employee skills, and a culture of innovation, learning. This flexibility positions organizations to leverage technological developments increase competitiveness and achieve sustainable growth in an ever-changing market. [8].

3-4 Digital Maturity (DM)

This represents stage where organizations fully adopt (DT) to manage their operations with high efficiency, moving beyond partial transformation or initial experiments. At stage, organizations integrate digital tools to improve operational performance, enhance productivity, increase their competitiveness in the market. This maturity relies on a long-term strategic vision, advanced digital skills to meet challenges of technological era. A key pillar is effective data management, which enables organizations to make informed decisions, optimize operations, and leverage artificial intelligence and analytics to anticipate and flexibly respond to market changes. (DM) goes beyond use of technology; it leads to a comprehensive development of business models and customer experiences on an ongoing basis, enabling innovative solutions that meet future requirements. It also promotes sustainable innovation, enables organizations efficiently implement new strategies, experiment with modern technology more smoothly, and expand into new horizons markets. To achieve transformation, organizations require visionary leadership keeps pace with developments, smart investments in digital infrastructure, and qualified employees to employ technologies efficiently to achieve maximum results. [9].

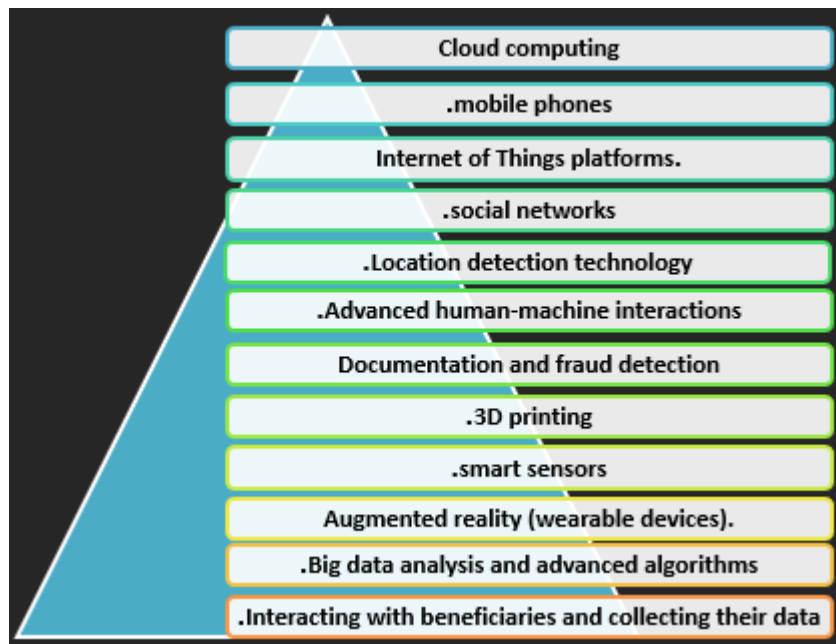
- Customer Digitization & Improving Customer Relationships:
aspect focuses on developing customer relationships by leveraging (DT) and studying its impact on strengthening these. [10]
- Organizational Culture and Individuals:
The success of (DT) efforts depends on support of employees within organization. Therefore, leadership pays attention to building a safe and stimulating work environment that fosters innovation and helps employees achieve positive results. [11].
- Networking & Relationships:
To achieve progress, an organization's need for effective interaction through rapid , accurate networking becomes more urgent. This enhances its collaboration with various stakeholders, such as suppliers, startups, governments, investors, various communities. In this regard, dimensions of (DT) can be defined in the following elements: [10].

1. The technical dimension: This includes building an advanced infrastructure, including

smart devices, virtual labs, and enhancing cybersecurity to transform classrooms into smart learning environments.

2. The human dimension: This focuses on enhancing competencies through training and attracting highly qualified experts to meet needs of technological innovation, especially in developing countries.
3. The regulatory dimension: This focuses on amending institutional policies to encourage innovation flexibility, enhance transparency, support individual initiatives for sustainable digital empowerment.

Thus, (DT) constitutes a strategic global trend focused on harnessing latest technologies achieve radical change across various humanitarian, social, economic, cultural sectors. importance is evident in prominent role in helping address challenges facing world while simultaneously contributing to promoting and supporting sustainable development. impact of (DT) is not limited to economic sphere alone; it also encompasses social m cultural aspects, making it an effective and stimulating tool for achievement within these fields. From a scientific perspective, the digital transformation process focuses on improving the user experience, enhancing operational efficiency, encouraging creativity in developing solutions, from the conceptual stage implementation. It also opens up new horizons for revenue sources, developing data-driven systems. All of this contributes to radically reshaping traditional business models [5]. The chart below illustrates (DT) techniques.



Source: Figure created by researcher based on 2020 Unified Arab Platform.

Figure 1. (DT) techniques.

Figure 1. Shows that (DT) is a comprehensive process based on an interconnected set of advanced technologies have brought about fundamental changes in work methods, production patterns, & service delivery. Cloud computing plays a fundamental role as cornerstone of this transformation by providing a flexible infrastructure for storing, processing, accessing data over the internet, enabling organizations to reduce costs, increase operational efficiency. In same context, mobile phones are a powerful enabler, enabling users to access digital services , applications instantly, 24/7, enhancing ease of use speed of communication. On other hand, Internet of Things (IoT) platforms have spearheaded a new trend that enhances the interconnection of smart devices & systems, enabling comprehensive data collection, analysis support essential applications in areas such as health, transportation, and smart cities. In

addition, social media networks have significantly impacted digital interaction, providing diverse sharing environments for exchanging ideas information, enabling interactive relationships, expanding scope of electronic solutions, services. Location-based technologies have enabled increased geographic tracking efficiency, supporting navigation applications, e-commerce, and security services. Moreover, with rapid advancements of modern era, artificial intelligence and robotics technologies have become pivotal in reshaping relationship between humans and technology. These advanced tools offer a high degree of flexibility and responsiveness, significantly helping to meet user needs with increasing efficiency. In light of rapid growth of (DT), cybersecurity has gained increasing importance, as innovative solutions, modern authentication mechanisms have emerged to enhance digital protection levels, contributing to increased user confidence in their transactions across various platforms, On other hand, 3D printing technology is one of the amazing innovations has fundamentally changed the industrial sector. This technology has potential to significantly reduce implementation costs, support design innovations, provide more efficient, streamlined methods for product development. Smart sensors have made significant strides in their ability to collect, process information in real time, helping achieve tangible progress in healthcare, transportation, and environmental conservation.

With regard interactive applications, technologies such as wearable devices , augmented reality have played a prominent role in creating diverse virtual environments for use in fields such as education, training, medical services by intelligently combining digital data with real world.Finally, with ongoing digital evolution, big data analytics tools , innovative algorithms have become at forefront of technological developments, thanks their role in uncovering hidden patterns supporting long-term strategic decision-making. This has led an increased focus on improving outstanding digital services through a detailed understanding of user behavior and analyzing their interactions, enabling better performance of websites and platforms, delivering experiences perfectly meet their diverse and changing needs. Accordingly, (DT) is a strategic tool for promoting economic and social development, particularly as governments move toward digitization and implement e-government initiatives aimed at improving quality of public services, increasing transparency and efficiency [5].

In context of introducing theoretical concepts, (DS) is one of most prominent applications of (DT) in tourism sector, as it reflects use of technology in providing tourism services, promoting destinations, improving tourist experience through innovative tools such as online booking, smart applications, augmented, virtual reality, interactive platforms [12]. (DS) enables tourism establishments to understand customer behavior analyze their data provide customized services, as well as improve management of natural, cultural resources reduce negative environmental impacts of tourism activities [13].(DS) also constitutes an effective mechanism for attracting investment, as tourist destinations rely on digital technology are viewed as a favorable environment for investment, thanks to the transparency they provide, improved access to global markets, and facilitation of marketing , tourism services [14]. Hence, integrating digital transformation into the tourism sector is considered a fundamental strategy for promoting sustainable development and achieving desired economic and social benefits. [15] Some researchers have defined (DT) as transition from a digital system based on information technology in all areas of tourism operations, while developing a (DT) strategy, disseminating a culture, designing (DS) programs, managing and financing (DT), taking into account human, technical, security, legislative requirements (Nahla, 2021, p. 236).

Another definition refers to (DS) as a tourist experience in an electronic environment, an alternative to a physical trip, allowing tourists to overcome the constraints of time, distance, cost, using advanced technologies that include images, video, sound effects, music, storytelling, and written texts. (Omri Hadda, 2022, p. 480), Based on above, link between (DT), (DS) is based on ability to transform traditional tourist destinations into smart destinations capable of providing an integrated tourism experience, increasing customer satisfaction, maximizing economic returns (Smart Tourism Destinations). This integration also contributes enhancing economic, social, environmental sustainability by improving resource utilization, data analysis to make informed investment decisions, reduce environmental impact, support cultural, ecotourism. Furthermore, integration represents a

powerful catalyst for attracting local foreign investment, as digital destinations equipped with modern technologies are viewed as a safe and promising investment environment that enhances transparency, reduces risks associated with tourism projects [16]. Thus, it becomes clear that linking (DT) with (DT) is not limited improving sector's operational performance alone, but extends to supporting sustainable development ,attracting investment, making the adoption of comprehensive digital policies a key strategy for enhancing competitiveness ofthe tourism sector.

3-5 Concepts (SD) & Dimensions

(SD) has gained international importance, prominence since 1990s, as it is considered the basis for achieving equitable distribution of wealth , development benefits between generations. importance stems from goal of simultaneously addressing all humanitarian, social, economic, environmental problems and issues. However, definitions of sustainable development have varied. SO, we will address most prominent of these concepts below: The FAO defined it as management, conservation, direction of resource base to meet human needs of present and future generations on an ongoing basis across all economic sectors, without leading to environmental degradation.

While economist Robert Solow sees it as avoiding harming productive energy and preserving it for current, future generations, concept of productive energy has expanded include material, moral, cognitive aspects, encompassing savings, investment, consumption [17]. On other hand, there is another view that sees it as a development process that takes into account the rights of future generations to planet's natural resources, in addition prioritizing basic needs of individuals. most important priorities are meeting needs of (food, clothing, housing, right to work, education, health services), and everything related to improving standard of living [18]. It also means striving to meet needs of individuals of current generation without compromising capabilities of future generations. It aims to achieve integrated, sustainable economic growth, preserve the environment, and achieve justice, social well-being for all. [19], In light of above, process of (SD) is a multidimensional process that includes reorganization and redirection of internal economy, social system, environment, while preserving available resources. process can only be achieved by embodying integration, interconnectedness of essential elements, represented in their various dimensions. These dimensions are as follows: (Mohamed Masoud et al., 2019, p. 204).

- The economic dimension: This focuses on optimal use of resources to maximize benefits, along with a focus on preserving , diversifying resources for current , future generations. It also focuses on achieving sustained growth in national income, ensuring that growth does not come at expense of the environment. (Osman Mohammed et al., 2024, p. 63)
- The social dimension: This focuses on developing the capabilities of community members through (health care, poverty reduction, & security), among other factors, which helps achieve local and regional development.
- The environmental dimension: foundation of economic development is environmental conservation, as natural resources are considered = foundation of all economic activity, = preserving these resources helps achieve economic and social growth and improves the economic and environmental situation.

3-6 The relationship between (DT), sustainable development, & attracting investment in tourism sector (TS)

(TS) is one of key drivers for promoting (SD) across various economic sectors, particularly the tourism sector, which increasingly relies on technology to improve operational efficiency , provide innovative services tourists [12], Tourism establishments' reliance on digital solutions enables them to reach wider markets, offer personalized tourism experiences, improve resource management, reduce waste, contributing to achieving economic, social, environmental sustainability goal Moreover, investing in (DI) enhances tourism sector's ability to attract local , foreign investment, as countries or regions with

advanced (DT) provide a favorable environment for businesses investment projects [14]. This interconnection reflects importance of adopting comprehensive digital policies, such as developing e-government, activating electronic payment platforms, using big data, predictive analytics, which enhance transparency, Reduce Risks associated with tourism investment [16]. On other hand, (DT) is linked to achieving sustainable development by supporting eco- & cultural tourism. Digital technologies can monitor environmental impact of tourism activities, analyze tourist behavior, thus reducing pressure on natural, cultural resources [13]. This responsible use of technology enables a balance between economic development, environmental protection, a fundamental pillar of (SD) in the tourism sector. In addition, digital transformation plays a pivotal role in enhancing social, cultural interaction, as digital platforms provide effective tools for tourism marketing, destination promotion, contributing increased tourism revenues, expanding investment base [20]. This indicates that integration between (DT) & (SD) goes beyond improving economic performance to include enhancing social, environmental benefits, making investment in (DI) a strategic priority for (TS)

4. The Reality of Tourism Sector and (DT) in Iraq

4-1 The Reality of the Tourism Sector in Iraq

The tourism sector in Iraq is considered a promising economic sector due to country's diverse cultural, historical, natural wealth, including historic cities such as Baghdad, Basra, Erbil, as well as prominent archaeological sites such as Babylon, Uruk, Nimrud [21]. These historical, cultural assets represent a unique combination that places Iraq among the countries with high potential for developing tourism sector. These sites provide opportunities highlight, promote Iraq's cultural heritage on global tourism scene, in addition to religious components. Historically, Iraq is considered cradle of some of oldest human civilizations, housing the remains of ancient civilizations such as Assyria, Samarra, Babylon, Uruk. Historical, religious cities such as Baghdad, Karbala, and Najaf also represent major attractions for both cultural, religious tourism (Mahmoud, Nizar, 2025, pp. 288-289). On natural level, Iraq boasts a rich geographic diversity, encompassing major rivers such as Tigris and Euphrates, plains, northern mountains, southern deserts, as well as scenic areas that offer ample opportunities for ecotourism, rural tourism, and adventure sports. This diversity enhances Iraq's ability to host diverse types of tourism and gives sector great flexibility to develop diverse tourism products [22]. Religious components also play a pivotal role in supporting Iraqi tourism. Holy cities such as Karbala, Najaf attract millions of visitors annually for pilgrimage, visitation. This is due to presence of approximately 90% of shrines of prophets, saints in Iraq, which directly contributes to supporting local economy and enhancing Iraq's position as a regional religious tourism destination [23]. Local cultural events and festivals also provide opportunities boost domestic tourism, attract visitors from neighboring countries, contributing to sustainable development of tourism sector [24]. In light of digital developments, technological platforms have become increasingly important in promoting Iraqi tourism. Smartphone applications, digital platforms are being relied upon to promote tourist destinations, book hotel services, and guide visitors, enhancing tourist experience, increasing sector's competitiveness [25]. digital trend highlights importance of integrating (DT) into tourism development strategies to maximize benefits of natural, cultural, religious resources. However, statistics indicate Iraq still receives a limited number of tourists compared neighboring countries, with tourism activity focused on domestic, cultural, and religious tourism, while recreational and ecotourism remain less developed (UNWTO, 2023). Table No. (1) below shows development of most important indicators related to tourism sector in Iraq during (period 2001-2024)

Table 1. Development of indicators related to tourism sector in Iraq during period (2000-2024):

years	Number of tourists (thousand tourists)	Tourist growth rate(%)	Tourism revenue (million dollars)	Contribution of tourism sector to GDP	
				Value (billion dollars)	as a percentage (%)
2000	3465				
2001	5102	47.2	15	--	--
2002	3295	-35.4	45	--	--
2003	2656	-19.3	75	--	--
2004	1878	-29.2	110	--	--
2005	2003	6.6	186	0.9	2.4
2006	1434	28.4	170	--	--
2007	2490	73.6	555	--	--
2008	3447	82.2	867	2.2	2.02
2009	2270	-8.8	1432	2.3	2.46
2010	3050	34.3	1736	2.6	2.25
2011	3874	27.1	1557	2.7	1.73
2012	4474	15.4	1640	3.5	1.86
2013	6321	41.2	2188	4.6	2.23
2014(*)	---	--	--	--	--
2015	4922	-22.1	4076	5.5	3.31
2016	7749	57.4	2479	4.8	2.98
2017	6152	-20.6	2959	5.4	3.06
2018	6097	-0.8	1986	5.6	3
2019	6548	0.2	3593	5.8	2.93
2020(*)	--	--	--	--	--
2021	1200	--	1300	1.4	0.62
2022	1900	58.3	2100	2.1	0.95
2023	2200	15.7	2400	2.3	1.05
2024	260	18.2	290	2.9	1.12

Source: Prepared by the researcher based on the following sources) Organization of Islamic Cooperation, International Tourism in OIC Countries, Statistics Book for Member States for various years.2) World Bank Statistics, [ps://data.worldbank.org](https://data.worldbank.org)3) UNWTO Tourism Highlights (2022–2024).4) Iraq Ministry of Culture, Tourism & Antiquities Reports (2023).5) OECD Tourism Trends 2023.(*). Data were not available for 2014 due to security conditions. Data were not available for 2020 due pandemic. Data from 2021 to 2024 are estimates based on World Bank and UNWTO data, indicating a gradual recovery following COVID-19 pandemic, with continued heavy reliance on religious and domestic tourism.

Table No. (1) shows that tourism sector in Iraq experienced sharp fluctuations during the period (2000–2020), due to its direct connection to political and security conditions. In 2000, number of tourists reached 3.4 million, with modest revenues of only \$2 million. However, unrest that followed the US invasion in 2003 led to a sharp decline in number of visitors to 1.8 million in 2004, with revenues declining to only \$110 million. However, starting in 2005, religious tourism began to be a major driver of recovery. The number of tourists gradually increased to 6.3 million in 2013, generating revenues of approximately \$2.1 billion. Tourism's contribution GDP also rose to 2.23%, up from only 1.73% in 2011. However, the period (2014–2017) witnessed a negative turn due to security threats associated with expansion of ISIS. This was reflected in a decline in number of tourists to 4.9 million in 2015, before rebounding to 7.7 million in 2016. However, tourism revenues remained volatile, recording \$4.07 billion in 2015, then declining to \$2.4 billion in 2016. During period (2018–2019), tourism activity recovered and witnessed a relative improvement, with revenues rising to \$3.6 billion in 2019

with 6.5 million tourists. However, this positive trend was short-lived due to repercussions of COVID-19 pandemic in 2020. Revenues collapsed to just \$955 million, tourism's contribution to GDP fell to 0.53%, lowest level in past two decades. Despite these challenges, sector has begun gradually improve since 2021, with Iraq receiving approximately 1.2 million visitors, generating revenues of \$1.3 billion. number rose to 1.9 million in 2022, generating revenues of \$2.1 billion [26]. In 2023, number of tourists exceeded 2.2 million, generating revenues of approximately \$2.4 billion. Estimates for 2024 indicate that the number of visitors will reach 2.6 million, generating revenues of approximately \$2.9 billion, contributing 1.12% to GDP [27].

This reflects resilience and ability of tourism sector to recover. However, recovery will remain fragile unless supported by strategic policies that include infrastructure development, encouraging digital transformation, diversifying tourism products (cultural, religious, environmental, and recreational), improving investment environment attract foreign capital. Based on the above, although tourism in Iraq is primarily based on religious factors, it great potential for expansion diversification. The success sector remains dependent on state's ability to address security challenges, activate digitization, and adopt a comprehensive national vision that enhances Iraq's position as a global tourist destination.

4-2 The Reality of (DT) in Iraqi Tourism

Iraq's rich cultural , historical heritage is considered one of strategic components supporting (DT) in tourism sector, especially in light of growing global trend toward cultural heritage-based tourism activities. The use of modern digital technologies, such as interactive maps, online reservation systems, and digital marketing, provides an opportunity to revive famous archaeological sites such as Babylon, Ur, and Erbil, enhancing Iraq's position as a promising tourist destination in Middle East [24], In this context, digital transformation represents a fundamental pillar for enhancing the competitiveness of Iraqi tourism sector in light of rapid global changes. Modern technology has become a prerequisite for developing infrastructure and enhancing the tourist experience. However, Iraq faces fundamental challenges that limit its ability to advance in field. Foremost among these challenges are weak investment in digital innovations, limited technical infrastructure, absence of necessary legislative and regulatory frameworks. Studies indicate that countries that have accelerated their investments in digital tourism have achieved significant growth in attracting tourist flows , increasing their economic returns, while Iraq remains lagging behind due to economic, security, political factors (Al-Subsidi, 2024, p. 12),In this regard, an assessment of current situation reveals a wide gap between Iraq's tourism potential, estimated at more than 13,000 officially registered archaeological sites, and the actual reality of the digital transformation process. absence of comprehensive national strategies hinders optimal investment of these exceptional resources [28], Data from the Iraqi Tourism Authority indicates that the number of foreign visitors reached approximately 3.5 million in 2023, with religious tourism in cities of Karbala and Najaf accounting for largest proportion of these visitors. However, a limited percentage of them relied on digital means for planning or advance booking, while one study indicates that less than 12% of Iraqi tourism companies provide electronic booking services with average efficiency, compared to 65% in Jordan , 90% in the Emirates [29], However, despite internet penetration rate in Iraq reaching 77% in 2022, with more than 32 million active users and 30 million content creators on social media, use of vast digital base in tourism promotion remains limited (Iraqi Ministry of Communications, 2022). A field study of tourism companies in Baghdad and Karbala also revealed that 64% of company managers believe lack of government digital support is a major obstacle, while 57% confirmed that weak digital competence of employees poses an additional challenge [30]. Economically, tourism's contribution GDP does not exceed 2.5% in 2022, compared to a regional average of 8%, reflecting impact of weak digitization on sector's competitiveness [31]. However, promising opportunities emerge, particularly in field of cultural digital tourism. In cooperation with UNESCO, Iraq has launched preliminary initiatives targeting digitization of prominent archaeological sites such as Babylon and Ur using 3D imaging technologies. This step, if expanded, could position country as a global virtual tourism destination [32]. Integration between public, private sectors is essential for success of the digital transformation process, as the absence of a unified national vision

renders current efforts fragmented and unable to attract investment or develop services. In this context, Iraq can benefit from the experiences of countries in the region, such as the UAE and Jordan, which have successfully employed (AI), blockchain, virtual reality technologies to transform the tourism sector. These experiences can be adapted to suit the specific Iraqi context [33].

❖ **The Impact of Digital Transformation on Tourism Investment in Iraq**

(DT) in Iraqi tourism sector is one of key pillars for stimulating local , international investment, especially in light of the economic challenges facing the country due to over-reliance on oil sector as primary source of income. use of digital technology in providing tourism services contributes to increasing the efficiency of operational processes, facilitating the tourist experience, and enhancing Iraq's competitiveness compared to tourist destinations in neighboring countries (Al-Zubside et al., 2025, p. 25), Digital transformation plays a significant role in developing tourism marketing mechanisms, as digital platforms and data analysis tools provide a greater opportunity to reach diverse segments of visitors, both inside and outside Iraq. This is coupled with improved innovations related to online booking systems, direct interaction mechanisms, making the customer experience easier, smoother [24]. These technological improvements provide an effective model that increases attractiveness of tourism sector for investment, attracts more projects in hotel infrastructure, supporting tourism services, which boosts GDP, expands the available job opportunities. When analyzing the relationship between (DT) & the volume of investment in tourism sector in Iraq during the period from 2005 to 2024, it becomes clear that Iraq faced a state of instability in digital performance, as shown in Table No. (2).

Table 2. The development of (DT) indicators in Egypt: indicators of e-government and e-participation, and the volume of investment in the tourism sector in Iraq during the period (2005-2024)

years	E-Government Development Index		E-Participation Index		Investment volume in tourism sector (billion dollars)
	Iraq's ranking	value	Iraq's ranking	value	
	118	0.33340	151	0.00	0.A
2008	151	0.26900	60	0.20454	0.D
2010	136	0.29957	135	0.04285	0.S
2012	137	0.34093	101	0.10530	1.A
2014	134	0.31414	152	0.13725	1.S
2016	141	0.33335	104	0.42373	1.Kh
2018	155	0.33760	140	0.33710	1.S
2020	143	0.43600	158	0.30950	1.T
2022	146	0.43830	153	0.21590	1.A
2024	148	0.45721	179	0.09590	0.S

Source: Prepared by researcher based on following sources:1) Zoboon, Amal Asmar (2022), Tourism Investment in Iraq and its Impact on Gross Domestic Product and Employment: An Analytical Study, Journal of Sustainable Studies, Vol. (2), <https://repository.qu.edu.iq/wp-content/uploads/sites/31/2022/11/8A.pdf>2) UN E-Government Knowledgebase, at: <https://publicadministration.un.org/egovkb/en-us/Data/Country-Information/id/80-Iraq>

In 2005, Iraq ranked 118th globally on the E-Government Index, improving slightly in 2010 (ranking 136th), then returning to a steady decline, settling at 148th in 2024 (Al-Subside et al., 2025, p. 14), revealing the ongoing challenges facing government digitization efforts.

Iraq's e-Participation Index has exhibited significant fluctuations, starting from a very low level of 0.00

in 2005, then reaching an exceptionally high of 0.20454 by 2008, before returning to periods of stagnation finally settling at 0.45721 in 2024 [24]. These trends indicate the difficulties Iraq faces in maintaining strong digital engagement, more effectively supporting citizen participation in e-government services. In contrast, the Iraqi tourism sector witnessed steady growth investments between 2005 and 2014, rising from \$0.3 billion to \$1.9 billion. expansion coincided with a marked improvement in digital participation e-government development, reflecting, to a limited extent, the positive impact of digital transformation on increasing attractiveness of tourism investments. SO, starting in 2014, investments began experience significant fluctuations, declining at certain periods, reaching \$1.5 billion in 2016. This decline continued, reaching \$0.0959 billion by 2024, influenced by pressures of security, political, economic situations prevented sector from significantly benefiting from the potential of (DT) [34].

A comparison between digital transformation indicators, volume of tourism investments reveals a conditionally positive correlation, as relative improvement in the e-government and e-participation indicators during the period (2012–2016) was accompanied by relative stability in tourism investments at good levels. However, with decline in e-participation indicators, Iraq's weak global ranking after 2018, negatively impacted investor confidence, leading to a continuous decline in investments until 2024. This leads us conclude that the weak digital environment and the lack of sustainable government policies directly impacted tourism sector, weakening Iraq's attractiveness for tourism investment. Then, achieving sustainable tourism development requires strengthening (DI), developing e-government mechanisms to ensure transparency, ease of procedures. It will restore the confidence of both local, foreign investors. Based on above, (DT) is a key element in attracting investor interest in Iraq's tourism sector. However, it depends primarily on economic, political stability, as well as government's ability to enhance digital participation, ensure provision of high-quality electronic services. Therefore, improving the (DI), increasing effectiveness of e-government programs are essential transforming Iraq into a tourism hub attracts sustainable investments.

5. Challenges & Future Prospects

5-1 Digital Transformation Policies & Strategies in Iraq:

Iraq has witnessed growing interest in (DT) with the aim of supporting economic . social development, improving quality of government services, enhancing the ability to attract investment, particularly in key sectors such as tourism and energy [35]. The Iraqi government is moving towards designing comprehensive digital strategies aimed at establishing an integrated digital environment that includes developing technical infrastructure, expanding the scope of e-government services, encouraging effective digital participation among citizens. In light of this, a key focus of these efforts is development of e-government programs that focus on digitizing public services facilitate access, reduce administrative complexity, increase transparency in management of public resources. Through the Iraqi government's launch of numerous e-platforms to meet citizens' economic, civil needs, such as commercial registration, licensing, and e-payment services, these initiatives contribute to improving Iraq's position in international e-government rankings [36].

Efforts also included strengthening digital infrastructure by expanding scope of high-speed internet services, improving quality technology of communications, providing advanced cloud solutions, enhancing strength and readiness of cybersecurity. These efforts aim to enable both government , private institutions to leverage digital technology in their daily operations, which in turn positively impacts various economic sectors, including investment in tourism [37]. In addition, policies focus on developing population capital by enhancing digital skills through specialized training programs targeting youth and national competencies in fields such as information technology, data analytics, artificial intelligence. primary goal of these initiatives is to bridge gap between requirements of digital economy, graduates of education system, national training programs [38]. The digital transformation strategy also aims to enhance international, local cooperation by building partnerships with global institutions to transfer expertise, modern technologies, while attracting foreign direct investment and

engaging private sector in improving digital services, their efficiency [39]. Regarding (TS), there are signs of a move toward digital transformation in tourism, such as (DT) Project of Tourism Authority. The Iraqi Tourism Authority launched an ambitious project aimed at modernizing and developing the tourism sector in Iraq by adopting two parallel tracks in first phase: paper track, electronic track. The project aims to build a comprehensive digital database for all Authority's departments, improve administrative performance, raise the efficiency of services provided, enhance transparency, accuracy in completing transactions, provide an attractive digital investment environment for tourism sector. A single-window project was also implemented to facilitate procedures for visitors, investors wishing to enter Iraq, enhancing investment environment, contributing to supporting national economy, and creating new opportunities for growth. Training courses were also organized to develop media performance, enhance modern tourism promotion tools, with aim of enabling personnel to use modern technologies to promote (TS). The Iraqi Tourism Board also collaborated with Spanish company THR to adopt modern management systems, activate smart planning mechanisms, adopt (DT) technologies in tourism promotion and marketing. (Iraqi Tourism Board 2025).

6. Challenges Facing Digital Transformation in Iraq

(DT) in Iraq is a strategic step encourages economic development, expands revenue base away from over-reliance on oil. However, this trend faces a number of structural, institutional challenges hinder its progress. most prominent of these challenges are:

- Deficiencies in technological infrastructure: Internet networks in Iraq suffer from significantly weak coverage, high rates of outages, in addition to high browsing costs compared to global market standards. These problems limit ability to effectively utilize digital platforms in the public & private sectors, leading to a decline in level of demand for electronic services, digital participation [36].
- Lack of an appropriate legal, regulatory environment: absence of necessary legislation, such as laws on personal data protection, cybersecurity, and electronic signatures, negatively impacts the confidence of citizens, investors in digital world, limiting investment opportunities in broad areas such as (DT) [35].
- Lack of human capital skills: Despite presence of a large youth segment capable of participating in this transformation, educational curricula and training programs are still not responsive to requirements of (DE), limiting efficient application of modern technologies in both public, private sectors [38].
- Political and security instability: Internal conflicts, political unrest plays a role in delaying implementation of digital transformation policies and reducing the country's attractiveness on investment map [39].
- Limited government financial resources: Iraq relies on oil as a major economic driver, making its general budget more vulnerable to fluctuating crude oil prices. As a result, (DS) suffers from a clear shortage of funding, which reduces chances of achieving a rapid, effective, and comprehensive digital transformation [37]. Other factors include lack of a clear strategy for developing & growing tourism sector in Iraq & failure activate public-private partnerships in investing in tourism projects in Iraq. In addition to bureaucracy, institutional corruption, which represent a major challenge that slows down implementation of digital projects, as well as complex administrative procedures [39].

❖ Future Prospects & Opportunities for Promoting Digital Transformation in Iraq:

(DT) has become a key element in strengthening tourism sector in many countries. Iraq is among the countries that can reap significant benefits from adopting innovative, advanced digital solutions. Investment in developing digital infrastructure, providing electronic services in tourism sector is expected to contribute to improving the tourist experience and enhancing the competitiveness of Iraqi

tourist sites regionally and globally [40].

In addition, digital technology enables collection, analysis of data to monitor tourist behavior, direct tourism marketing efforts in a smart and effective manner, contributing to better resource utilization [34]. Among promising opportunities for (DT) in the Iraqi tourism sector are provision of advanced electronic booking platforms, development of smartphone applications that inform tourists about tourist sites, services related to transportation, hotel accommodation, and cultural events, activities. Reports indicate that use of these technologies helps improve hotel occupancy rates, increase financial returns for tourism sector, attract local, international investment [24]. Furthermore, the use of technologies such as augmented reality, virtual reality is an effective tool for promoting Iraq's cultural, historical heritage, providing a new and richer tourism experience for visitors [21].

In this regard, (DT) in Iraq still faces a number of fundamental challenges, most notably the lack of technical and human capabilities, weak digital infrastructure in some areas, and the urgent need to develop legislation and regulatory policies related to (DS) sectors [41]. To overcome these obstacles, multiple strategies must be adopted, including investing in raising efficiency of national cadres through continuous training, strengthening public-private partnerships, in addition to adopting innovative, low-cost technological solutions that are appropriate to local context. From a policy perspective, the Iraqi government can formulate comprehensive national strategies for digital transformation in tourism sector, including developing (DI), supporting emerging projects in the (DS) field, adopting open data management models to enhance transparency, enable evidence-based decision-making [42]. This is because the use of artificial intelligence and big data analysis technologies has provided opportunities to maximize returns on tourism investment and improve quality of services provided to visitors.

Tourist experience. To achieve, we must rely on integrated strategies combine advanced technology, qualified human resources, and appropriate regulatory policies. Investing in this field is a long-term investment that can contribute to redefining Iraqi tourism's position on the global tourism map. (DT) here represents a strategic step toward modernizing economic, service sectors of Iraqi economy. This is translated practically into tourism sector through tourism digitization, which relies on smart applications, electronic platforms, data analysis. This digitization contributes to development of tourism services and supports tourism marketing programs, increasing sector's attractiveness to local, foreign tourism investments. This, in turn, is a key driver for improving infrastructure efficiency, providing job opportunities, generating sustainable economic revenues. This contributes to promoting sustainable economic development, transforming Iraq into a competitive tourism destination at the regional and international levels.

Conclusions

The study reached a set of results that answer the research hypotheses and questions. Based on these results, recommendations will be formulated that can contribute to enhancing the tourism digitalization process and attracting investments in a sustainable manner, as follows:

- The study results demonstrated (DT) represents a strategic economic variable in enhancing the attractiveness of tourism investment, as leads to increased efficiency of electronic services, reduced transaction costs, and increased transparency and information flow. This improves the business environment and enhances investor confidence, supporting the validity of first hypothesis.
- The study demonstrated that weak digital infrastructure and limited human capacity are among most significant obstacles to (DT) in tourism sector, reducing economic efficiency, limiting ability to attract investment. Therefore, investing in (DI) (HCD) represents a strategic economic option for achieving effective digital transformation and ensuring sustainable growth in tourism sector, which confirms validity of second hypothesis.
- The absence of a unified national strategy for (DT) transformation, weak coordination between

government and private entities, deficiencies in legislative regulatory framework in areas of data protection, cybersecurity, electronic signatures, as well as political and security instability, bureaucracy, administrative corruption, have all contributed to weakening investor confidence, reducing Iraq's readiness for (DT). These factors have negatively impacted position on e-government and digital participation indicators.

- There is a clear digital gap between Iraq's rich tourism potential and level of use of modern technologies in promotion, management, which limits the optimal utilization of tourism resources.
- (DT) represents a strategic tool for enhancing Iraq's attractiveness for tourism investments, contributes to achieving sustainability in three dimensions: economic, through increased revenues; social, through creation of new job opportunities; environmental, through reducing pressure on natural resources.
- clear that digital transformation is a key factor in enhancing efficiency of the tourism sector in Iraq, increasing its attractiveness for investment. However, achieving transformation requires addressing structural and technical challenges, developing supportive policies, strategies by state ensure sustainable economic development in vital sector.

Recommendations

- The study recommends the development of a comprehensive national strategy for digital tourism transformation based on modernizing (DI) & adopting (AI), virtual reality tools, given their role in reshaping tourist experience and strengthening Iraq's position on international tourism map.
- Creating an integrated technological, legislative environment by improving internet quality, reducing its cost, while establishing a modern legal system for data protection, activating electronic signatures, enhancing cybersecurity, thus contributing to building investor confidence and increasing attractiveness of the Iraqi tourism market.
- Emphasizing importance of investing in human capital, as it represents a fundamental pillar of desired (DT), by launching specialized training programs in information technology, digital marketing, data management, ensuring advancement of employee skills and achieving high operational efficiency for sector.
- Developing innovative models for (DT) e-marketing by digitizing archaeological, cultural, religious sites using advanced technologies, employing interactive electronic promotional campaigns capable of addressing global markets in a contemporary manner that attracts tourists and increases tourism sector revenues.
- Accelerating development of national infrastructure, strengthening investment partnerships in fields of transportation, communications, tourism services is essential to creating an integrated environment capable of attracting investment achieving (SD) for the Iraqi tourism sector.
- The study also recommends developing an integrated national framework for (DT) transformation in Iraq based on an assessment of tourism sector's reality, an analysis of its digital readiness, adoption of supportive policies, strategies, while addressing challenges hindering implementation, thus enhancing Iraq's ability to attract tourism investment and achieve sustainable development.

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