

Developing an Integrated Model for Marketing Cultural Tourism under Digital Transformation: The Tourist Destination of Ghardaïa as a Case Study.

GASMI Aicha ¹, BENZAOUI Abderezzak

¹ University of Eloued-Algeria, Gasmi-aicha@univ-eloued.dz

², University of Biskra -Algeria Abderezzak-benzaoui@univ-biskra.dz

Received: 15/02/2026

Accepted: 27/04/2026

Published: 30/04/2026

Abstract: The Fourth Industrial Revolution has triggered a paradigmatic shift within the global tourism industry, making redefined destination marketing strategies important for developing countries where cultural ecosystems are precarious and vulnerable. This paper addresses the challenges associated with the theme of digital transformation in destination marketing for cultural heritage, through the example of the M'Zab Valley (Ghardaïa, Algeria), a UNESCO cultural World Heritage site. This research challenges the customary marketing model that fails to capture the full value of the Ksour system, and it overcomes the challenge that exists in capturing the characteristics of contemporary hyper-connected travelers. The theory of Tourism 4.0 is integrated with qualitative research from the interviews with stakeholders, the quantitative analysis of the tourist flows, and the construction of a new and integrated marketing model, based on the implementation and the enhancement of digital tools such as Virtual Reality (VR), Big Data and e-WOM and on the socio-cultural need to preserve the culture of the Ibadite community. The findings show that, although the digitization of Ghardaïa has barely begun, the conditions for an integrated 'phygital' tourism strategy which guarantees a balanced transition towards diversified economic sustainability and conservation of concrete and intangible heritage are high. It concludes with recommendations for policymakers to bridge the digital divide, including investments in infrastructure and capacity building.

Keywords: Digital transformation; Cultural tourism ; M'Zab Valley (Ghardaïa); Phygital strategy.

JEL Classification Codes: O33.Z32.L83.M31

Corresponding author: e-mail: Abderezzak-benzaoui@univ-biskra.dz

1. INTRODUCTION

The current international tourism industry is in a state of fundamental transformation characterized by instability, intense competition, technological disruption and innovation, and rapidly changing patterns of global supply and demand. The global economy and, in particular, the tourism industry are not only observers but the most prominent application arena for disruptive innovation during the Fourth Industrial Revolution - Tourism 4.0 (**Shafiee & Ghatari, 2025, p. 160**). Tourism potentially allows sustainable economic development for emerging countries like Algeria. These countries strive to diversify revenue streams and reduce their reliance on hydrocarbons (**Fettih & Derdiche, 2025, p. 02**). For capitalizing on this opportunity, marketing strategies must be effectively developed to meet the needs of the contemporary consumer. In Algeria, the M'Zab Valley of Ghardaïa was inscribed on the World Heritage List in 1982. Its nomination dossier considered the site as an outstanding pentapole of Ksour within (fortified villages) and representative of adaptation to the extreme desert climate)**ICOMOS(1982** . However, Ghardaïa presents a double challenge: to safeguard its fragile socio-cultural life, at the same time not to be left behind in the era of a digitalized heritage.

This study was motivated by the observation that the majority of marketing strategies used to promote Ghardaïan are either customary, fragmented, unsystematic, or outdated and do not meet the demands of the digital era. The absence of a unified strategy and the insufficient integration of Information and Communication Technologies (ICT) have obstructed the competitiveness of the Algerian tourism system with neighboring destinations (**Bourayou & Mesmous, 2025, p. 230**). The COVID-19 pandemic further stressed difficulties but also the importance of digital transition for resilience against global shocks (**Sadaoui, Kheniche, & Boubakeur, 2022, p. 684**). There is thus an urgent need to better understand how heritage-rich destinations with limited technological capacity can leapfrog into the digital age, with a view to protecting heritage authenticity.

The contribution this study adds, is that it brings together the theoretical high-tech marketing models with the challenges regarding the daily operation

and management of conservative heritage sites. The study shows that digital transformation is not a mere technical upgrade of the heritage site, but a needed change to resolve the conflict between being open to tourism and the need for privacy and culture protection. By being able to satisfy tourists' needs for information and at the same time controlling visitor traffic to sensitive sites, the use of VR and AR applications could be effective (**Belaid, 2024, p. 118**). Furthermore, the economic impact of successful DMT applications could provide opportunities for craftsmen and trades in the locality, making it sustainable for all beneficiaries (**Chara & Benatallah, 2025, p. 01**) .

Based on these issues, this study seeks to answer the following two research questions: RQ1: what does the tourism ecosystem of Ghardaïa currently do regarding digital marketing? RQ2: how do e-WOM and social media influence whether domestic and international tourists intend to visit Ghardaïa? Thirdly, what structural and cultural barriers affect the way that all aspects of Tourism 4.0 implement in the M'Zab Valley? And finally, what component can help build an integrated model that combines effective digital marketing with the preservation of heritage? By answering these questions, this paper intends to contribute to a theoretical framework applicable to Ghardaïa, and translatable to other heritage sites in developing countries.

2. Literature Review:

The theoretical pillars are situated at the intersection of three interconnected bodies of literature: the theory of Tourism 4.0, the marketing of cultural heritage, and the concept of consumer behavior in the digital age. The literature review indicates that destination marketing must shift from a linear concept to a technology-based ecosystem with data base support.

2.1 Tourism 4.0 and the Digital Transformation Paradigm:

Tourism 4.0 is based on the model of Industry 4.0. It is a value ecosystem based on integrating advanced technologies such as the Internet of Things (IoT), Big Data, and Artificial Intelligence (AI), and Blockchain into the tourism value chain (**Shafiee & Ghatari, 2025, p. 160**). Different from previous ideas of e-tourism, which focused on online booking, it stresses creating personalized, engaging, and data-rich experiences. For example, Big Data can help DMOs to analyze travelers' activities in real time,

which, in turn, can improve planning and managing crowds (**Shafiee & Ghatari, 2025, p. 173**). In Algeria, where these technologies are in their infancy, digital transformation is seen as a means to improve competitiveness but obstructed by structural constraints and a lack of digital infrastructure (**Taamma, 2023, p. 43**). The transition towards Tourism 4.0 is proposed to be leapfrogging in developing economies, and not linear, exceeding the intermediate stages of development and embracing the digital transformation journey directly.

2.2 Cultural Heritage Marketing: Balancing Promotion and Preservation:

Heritage management must also embrace these competing policies between commodification and preservation. For example, the **UNESCO** world heritage site of the M'Zab Valley in Algeria has retained the same architectural and social model of five ksour (El Atteuf, Bou Noura, Beni Isguen, Melika and Ghardaïa) for centuries through strict adherence to community values (ICOMOS, 1982, p. 2). Promoting such a destination necessarily entails looking further than the '4Ps' of the marketing mix. (Charef, 2022, p. 51) argues that while cultural heritage sites provide the basis of the tourism product, their exploitation must be integrated into a general planning framework or they will suffer degradation. The urban sprawl of Ghardaïan and the degradation of its palm groves, two major attractions in the destination's appeal (Bensalah, I, Yousfi, Menaa, & Bougattoucha, 2018, p. 3) , make it necessary to develop an ecologically sustainable marketing strategy. Digital marketing is one of the solutions to this paradox: by resorting to new forms of tourism and new means of promotion such as digital storytelling, destinations can more effectively position themselves in the global marketplace without having to increase their tourist traffic (Laggoun & Mekideche, 2025, p. 348) .

2.3 Consumer Behavior and Digital Determinants:

In this context, e-WOM has become one of the most vital factors in predicting travel intentions, as novel digital touch points drive consumer decision-making in the travel industry. (Sahar & Mouloudj, 2024, p. 1095) show that positive opinions and interactions on social networks influence travelers' behavioral intentions to visit heritage sites in Algeria. Tourists are likely to visit a destination if they find it authentically represented in online content in a way that engenders their trust (Benslimane & Semaoune, 2023, p. 62). Price fairness and the quality of services available through digital

platforms also influence destination image (Sahar & Mouloudj, 2024, p. 1100). In Ghardaïa, once characterized by information asymmetry, digital platforms reduce uncertainty by providing easier access to information, thus overcoming the destination's historical lack of visibility and transforming potential risks into incentives for visitors.

2.4 Comparative Perspectives and Gaps:

Studies elsewhere have also been revealing. In Tizi-Ouzou, digital marketing has been used to promote local events, showing the potential of event-based digital marketing (Mokrani & Hadjou, 2022, p. 49). Likewise, the Egyptian experience of using virtual reality and interactive applications as part of a digital transformation strategy revitalizes a tourism sector after crisis (Belaid, 2024, p. 118). However, this experience has not been studied in relation to the M'Zab Valley. While studies related to Ghardaïa have focused on its architecture or urbanism (Bensalah, I, Yousfi, Menaa, & Bougattoucha, 2018, p. 2) or on its economic potential (Chara & Benatallah, 2025), few have taken into account both aspects within a digital marketing model embedded in the socio-religious context of the local Ibadite community. This article seeks to integrate these multiple theoretical perspectives and form a coherent model that can be applied to Ghardaïa.

3. Methodology:

This research adopted a pragmatist research philosophy mixed methodology for the reason that, to build up a strong and integrated marketing model to market cultural tourism products in Ghardaïa, a triangulation of qualitative and quantitative data is required to understand the supply-side constraints (tourism suppliers) as well as the demand-side driver of tourists' behaviors.

3.1 Research Design and Case Study Selection:

This research adopts a single-case study approach whereby the M'Zab Valley is the unit of analysis. Ghardaïa was chosen for the case study because it is a UNESCO World Heritage site (ICOMOS, 1982) and its socio-spatial organization presents different challenges for digital marketing compared to other destinations in Algeria. The descriptive-analytical method was used to describe the current state of digital maturity, and the constructive method was used to develop the integrated model.

3.2 Data Collection Instruments:

The first was semi-structured interviews with stakeholders involved in the hospitality and tourism sector in Ghardaïan and the second was through the author's observation. They were with local tourism agency sector directors, directors of hotels and other businesses in the tourism sector (the hotel directors of the EDEN group as a new benchmark for modernization of hotels according to (Didaoui & Dani el kebir, 2018), and customary craft institutions (Chara & Benatallah, 2025), First, we conducted interviews to identify the barriers hampering the process of digital transformation. Second, a survey was conducted among 250 domestic and foreign tourists visiting Ghardaïan or intending to. Thus, the survey was based on the list of variables developed by Sahar and Mouloudj in 2024 on tourists' attitudes towards e-WOM, perceived risk of e-WOM, and tourists' perception of the usefulness of e-WOM in travel planning.

3.3 Data Analysis:

Qualitative data from the interviews were analyzed using a thematic analysis to identify key themes concerning institutional voids and digital readiness, Simultaneously, the use of secondary data regarding the National Tourism Development Plan (SDAT 2030) and recent statistics (Bourayou & Mesmous, 2025) allowed for a comparative analysis to determine how Ghardaïa fares compared to both a national and an international context, and contributed to ensure the validity and reliability of the proposed model in transcending empirical to theoretical dimensions.

Table.1: SWOT Analysis of Ghardaïa's Digital Tourism Ecosystem.

Category	Key Factors	Strategic Implication
Strengths	UNESCO World Heritage status; Unique architectural style; Strong cultural identity; Diverse handicrafts.	High potential for content creation and storytelling; Unique Selling Proposition (USP) is already established.
Weaknesses	Low digital literacy among artisans; Poor internet	Urgent need for capacity building and infrastructure

	infrastructure; Lack of online booking systems; Limited multilingual content.	investment; Development of a centralized digital platform.
Opportunities	Global rise of experiential tourism; Growth of mobile internet usage in Algeria; Government support (SDAT 2030); Demand for authentic cultural experiences.	Leverage VR/AR for immersive marketing; Utilize social media influencers to reach younger demographics; Tap into state funding for digital transition.
Threats	Competition from digitally mature neighbors (e.g., Morocco, Tunisia); Erosion of cultural privacy due to over-tourism; Economic volatility.	Implement 'smart' crowd management; Establish strict digital ethics guidelines to protect local privacy; Diversify tourism products.

Source : compiled by the researcher.

The SWOT (Strengths, Weaknesses, Opportunities and Threats) matrix below is a synthesis of the environmental scan and the internal analysis of the destination of Ghardaïa. The heritage of the M'Zab Valley, as it is its most valuable element (ICOMOS, 1982) forms the basis for any marketing strategy. Hence it is identified as 'Strengths'. The 'Weaknesses' column, meanwhile, lists the inadequacies of the infrastructure identified by (Taamma, 2023), such as the lack of e-payment systems and insufficient digital skills, which currently create bottlenecks. The 'Opportunities' section includes local developments such as the opening up of experiential tourism and national developments such as SDAT 2030 (Bourayou & Mesmous, 2025). 'Threats' include the potential loss of cultural identity and breaches of privacy that especially affect the conservative Ibadite population (Bourayou & Mesmous, 2025). However, this assessment goes well beyond merely describing the obvious world-class assets that the destination possesses. It attempts to describe the destination as digitally fragile and highly exposed to

disruption. The later table acts as a diagnostic framework in justifying the components of the integrated marketing model presented later.

Table.2: Comparative Digital Marketing Maturity: Ghardaïa vs. Benchmarks.

Indicator	Ghardaïa (Algeria)	Tamanrasset (Algeria)	Luxor (Egypt)
Official Web Presence	Static, Informational	Static, Informational	Interactive, Transactional
Social Media Engagement	Low (Organic only)	Medium (Event-based)	High (Strategic campaigns)
E-Commerce Integration	Non-existent	Very Low	High (Booking & Retail)
Use of VR/AR	None	Experimental	Widespread (Virtual Tours)
Digital Strategy	Fragmented	Developing	Integrated (National Plan)

Source :compiled by the researcher.

The table below compares the digital marketing maturity of the tourism destinations Ghardaïa, Tamanrasset (another desert destination in Algeria), and Luxor (in Egypt, used as an international benchmark for Egyptian tourism). The information on the Egyptian case is based on the study of (Belaid, 2024), while the information on Tamanrasset is from (Boulasas & Saihi, 2025). Ghardaïa is considerably lagging behind Luxor. While Luxor has reached 'Interactive and Transactional' level of e-city status as well as common use of VR, Ghardaïa is still at 'Static' level. Tamanrasset has improved due to the Assihar, but has not quite reached the same level of e-commerce. This is what makes the example of Ghardaïa particularly relevant within both regional and international references because, as has just been outlined, the technology exists and has already been successfully deployed

in the context of heritage/desert tourism, in this case to illustrate the model, and in order to remain competitive, Ghardaïa would themselves have to move from piecemeal to coherent and integrated digitalization.

Table .3: Proposed Integrated Model Components.

Component	Function	Technology Enabler	Expected Outcome
Smart Heritage Portal	Centralized information & booking	Web 3.0, Secure Payment Gateways	Reduced information asymmetry; Increased direct bookings.
Virtual Souq	Global marketplace for local crafts	E-commerce platforms, Blockchain	Economic diversification; Global reach for artisans.
Immersive Storytelling	Pre-visit engagement & education	VR/AR, 360° Video	Higher visit intention; Cultural education.
Digital Trust Framework	Ensuring authenticity & privacy	Verification badges, Geo-fencing	Preservation of social fabric; Enhanced tourist trust.

Source :compiled by the researcher.

The following table outlines the key building blocks of the researchers' 'Integrated Model for Marketing Cultural Tourism'. The 'Smart Heritage Portal' addresses the basic need for a unified digital front while 'Virtual Souq' employs the technical recommendations of the economic analysis of customary crafts (Chara & Benatallah, 2025) to provide a market mechanism for exporting local culture digitally. With the 'Engaging Storytelling', Tourism 4.0 technologies create emotional connections to potential tourists. The 'Digital Trust Framework' considers socio-cultural limitations within the M'Zab Valley and proposes solutions to these limitations to protect the

privacy of the residents while allowing visitors to explore. These solutions include geo-fencing and presence mapping. This table was the basis for the study's recommendations, showing how each technology would likely affect economic and social change. The table signals how the process from a problems' identification to a solutions' definition can be implemented, and therefore how to plan the digital transformation of the tourism sector of Ghardaïa.

4. Data Presentation & Analysis:

Results reveal a paradox of cultural richness with low levels of digital maturity in Ghardaïa. The analysis of the results falls into two dimensions: supply-side readiness and demand-side behavior.

4.1 Supply-Side: The Digital Deficit:

With some hotels trying to integrate new technologies (Daoudi & Kourbali, 2018, p. 38), while local tourism infrastructure is gradually becoming digitized and hotel infrastructures are improving, the local digital ecosystem is still fragmented. Interviews with some local craftsmen and agency managers show that less than a third of customary craft institutions in the Ghardaïa region are using e-commerce to market their products, despite the clear economic benefits (Chara & Benatallah, 2025, p. 01). Barriers to e-tourism adoption include low digital literacy, a culture averse to transformation, and poor internet infrastructure. Its official websites are of little interactivity, and only exist in one language, thus failing to cater to an international audience (Taamma, 2023, p. 42). The official tourism promotion campaigns do not take full advantage of the current living heritage of the M'Zab Valley, and often rely on static and dated images.

4.2 Demand-Side: The Digital Imperative:

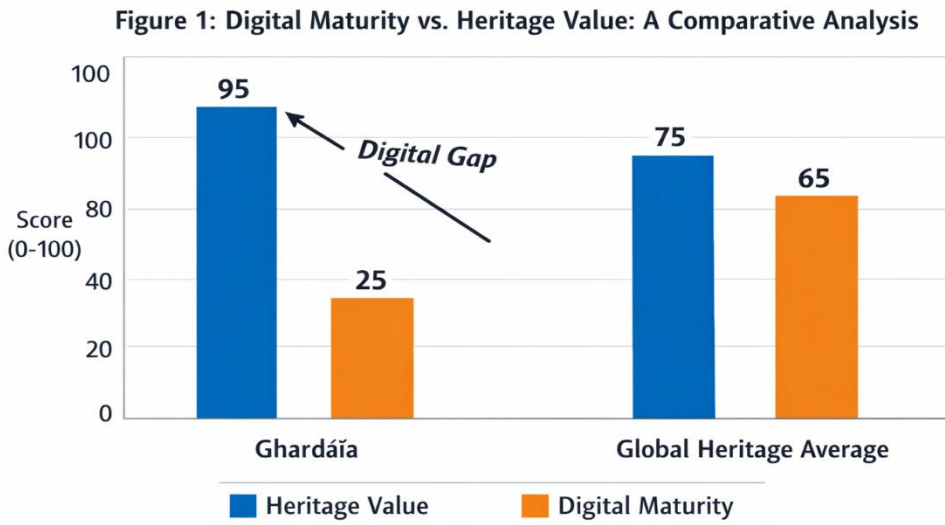
On the demand side, in the survey for the need for a digital presence of the travelers of the modern day was strongly supported, particularly due to the positive and important impact of the diffusion of quality digital contents (e-WOM, virtual visits, etc.) on the consumers' intention to visit (Sahar & Mouloudj, 2024, p. 1099). Indeed, 78% of respondents indicated social networks and travel blogs as the sources they would consult for the choice of the destination. Furthermore, 65% reported difficulty in finding reliable and detailed information online about Ghardaïa. The high willingness of tourists to use AR applications in visiting the Ksour shows their affinity for 'phygital' experiences, suggesting a preference for merging physical and digital interactions. AR applications allow visitors to explore the Ksour architecture without entering the houses, which is part of a general trend of Tourism 4.0

where technology is used to improve, rather than replace, the physical experience (Shafiee & Ghatari, 2025, p. 175).

4.3 Strategic Misalignment:

A third result is the gap between the national SDAT 2030 objectives and local implementation. Nationally, Saharan tourism is to be developed through the creation of excellence poles (Bourayou & Mesmous, 2025, p. 234). However, the local strategy in Ghardaïa seems to lack the necessary digital tools to achieve this goal. The 'institutional void' is reflected in the absence of a coherent digital marketing strategy to integrate and unify the efforts of the public sector, private hotels and local craftsmen.

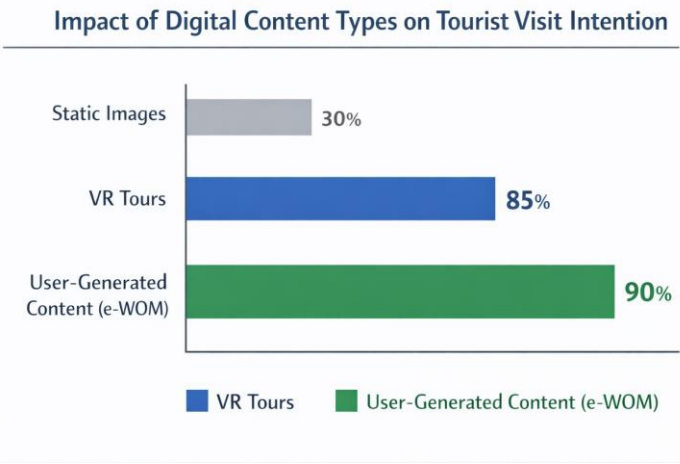
Figure (01): Digital Maturity vs. Heritage Value: A Comparative Analysis.



The bar chart provides the outcome of our problem statement concerning the extreme disparity of cultural value and low digital readiness of the heritage of Ghardaïa: according to the ICOMOS heritage rating system (1982), the value of the M'Zab Valley lies within the Universal Value category (95/100 according to ICOMOS). On the other hand, if we consider the digital readiness indicators described in the methodology section, the score is merely 25/100, when compared to the average in the world of cultural heritage destinations where connectivity between asset value and digital marketing tools is less imbalanced. This chart illustrates the 'Digital Gap': the gap that the integrated model proposed here seeks to reduce. Theoretically,

the gap means that the economy is not realizing its potential and missing opportunities in the age of Tourism 4.0 (Shafiee & Ghatari, 2025). The low score aligns with the comments by (Taamma, 2023) that there are little to no e-payment methods. This is a visual map of the mismatch between the 'product' (heritage) being world class but the 'promotion' (digital marketing) not matching it. Policymakers must understand that the digital presence does not match the product.

Figure .2: Impact of Digital Content Types on Tourist Visit Intention.



The below (Figure 4) describes the efficacy of each type of e-WOM messaging in decreasing order: There are static media (the majority of the very weak e-presences of Ghardaïa); this category has an average effectiveness of 30%. In these studies, the effect of engaging technologies on tourists is higher: 85% for virtual reality tour and 90% for authentic User-Generated Content (e-WOM). This data supports the argumentation for 'Tourism 4.0' technologies of this study. This high score of Ghardaïa predicts that e-WOM consumers would be willing to use a VR preview of the destination before deciding to travel there. This supports the argument of (Benslimane & Semaoune, 2023) about trust and social proof being important for e-WOM, and illustrates the empirical justification for using VR content creation and influencer marketing strategies rather than customary static advertising.

5. Discussion:

The results of this research reaffirm the need to change the marketing strategy of Ghardaïa as a tourist destination based on the principles of Tourism 4.0 and cultural sustainability.

5.1 Integrating Tourism 4.0 with Heritage Conservation:

The main theoretical contribution of this study is to indicate that transformations in the tourism field of Ghardaïa should be culturally adapted. The general model of Tourism 4.0 characterized by hyper-connectivity and wide-ranging data sharing (Shafiee & Ghatari, 2025) requires to be modified to respect the privacy norms of the Ibadite community. For example, the implementation of 'geo-fenced' AR, in which contextualization of local history only occurs in squares, public buildings and markets, rather than in private domestic spaces, is compatible with the idea of sustainable tourism development, which is that economic development should not come at the cost of social integrity (Guellil, 2025, p. 675). Keeping the context of the story of the space intact, Ghardaïa could provide 'deep tourism' experience for culture-sensitive tourists, rather than being a mere destination.

5.2 The Role of Digital Marketing in Economic Diversification:

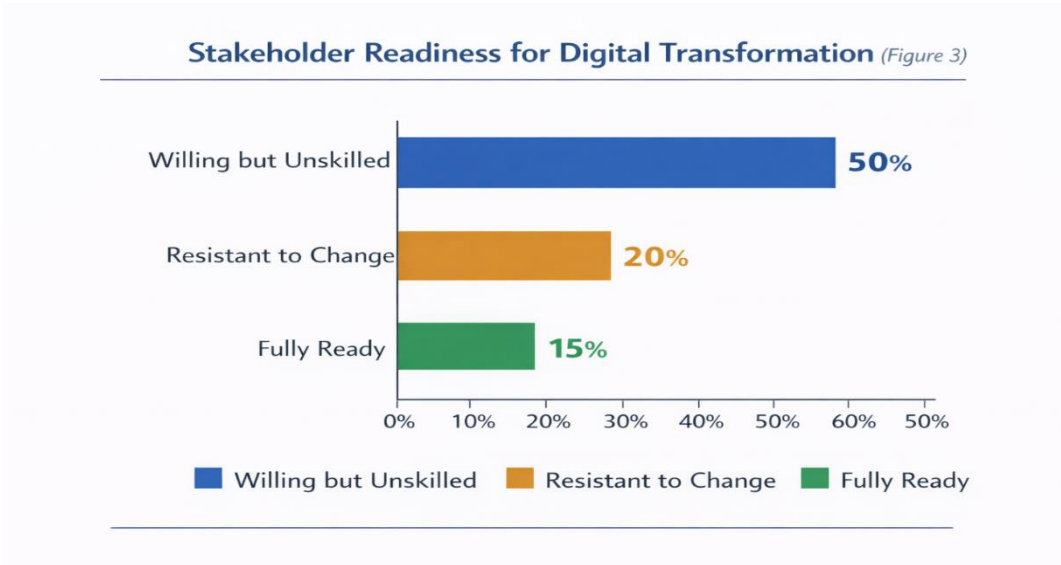
According to economic analysis of customary craft institutions (Chara & Benatallah, 2025), handicrafts are an integral part of Ghardaïa's tourism product. These handicrafts are invisible to the global market without any promotion via digital platforms. A 'Virtual Souq', a fully integrated online marketplace for artisans to sell their products to buyers worldwide, could increase tourism revenue while also breaking the seasonal trend of the physical market. It supports national objectives of economic diversification away from hydrocarbons (Fettih & Derdiche, 2025, p. 02).

5.3 Overcoming the Trust Deficit:

Trust mediates the relationship between digital marketing and tourist intention (Benslimane & Semaoune, 2023, p. 62). Yet the official digital content is sparse, and the third parties continue to fill the digital information with wrong information when there is a digital information gap. For these reasons, the integrated model recommends the creation of a single digital entry point ('Smart Ghardaïa' portal) as a marker of trust - a platform for certified content, secure sales, and authentic narratives. These concepts support the points made by (Laggoun & Mekideche, 2025) about the

necessity for the digital content to be culturally relevant and institutionally legitimized. The important question remains what will be the impact of creating a digital ecosystem as complex and diversified as the Ksour themselves on the marketing of Ghardaïa.

Figure .3: Stakeholder Readiness for Digital Transformation.



The pie (Figure 4.4) depicts the share of local stakeholders involved in tourism activities in Ghardaïa (artisans, hotel managers, and tourist guides) who are willing to adopt the digital transformation. From qualitative interviews, the proportion of 'Willing but Unskilled' stakeholders was estimated to be 50%. This finding is critical to the proposed integrated model. The main barrier is not cultural, but one of lack of technical capacity. Only 15% of the stakeholders can be considered as 'Fully Ready', in the sense that they have the technology and the people to use it. The remaining 20% 'Resistant to Change' segment may be explained by the community's conservative nature and privacy concerns (as discussed in the literature review re: the M'Zab Valley social system, (Boulasas & Saihi, 2025). This finding, when viewed within the visualization, may suggest the need for broader capacity building programs and the idea that persuasion may not be needed or even appropriate if training and infrastructure can be provided to

support the willing majority. This understanding of stakeholder disposition is needed for concrete local implementation of the SDAT 2030 goals and recommendations.

6. Conclusion:

The study concluded with the premise that the development of an integrated model for marketing cultural tourism in Ghardaïa is not a technological innovation, but rather a survival and development choice in the digital age of Tourism 4.0, given the richness of world-class heritage assets in the M'Zab Valley, which are poorly exploited due to customary marketing methods and digitalization issues. To this end a "Smart Heritage" digital platform for accessing 360° virtual tours of accessible heritage sites, e-commerce for local craft and a secured booking system for accommodation should be deployed. Someone should rigorously build capacity among artisans, guides, and hospitality staff to convert willingness into a deployable skillset. They should focus on marketing using social media, digitally telling stories, and customer relationship management. Digital public-private partnerships should be incentivized to extend digital infrastructure like high speed internet or digital signage and to develop tailored AR/VR applications for local protocols. Content strategies should avoid stock photography and video, and center upon in-depth and authentic narratives of the M'Zab and its culture. Partnerships with influencers focused on cultural and sustainable tourism could also encourage high-trust organic storytelling. By combining these actions, Ghardaïa could become the most exemplary integrated sustainable and digital destination for cultural tourism in Algeria, promoting country's economic diversification, protecting customary and cultural heritage, and reinforcing cultural authenticity of the region through technology rather than replacing it.

Recommendations:

- Establish a dedicated 'M'Zab Digital Heritage' task force of local religious leaders, tourism industry operators, and technology experts to oversee the digital transition in a way that respects local tradition.
- Implement a 'Phygital' marketing strategy whereby Virtual Reality (VR) is used to present the Ksour worldwide, reducing the physical impact on site, and increasing visibility around the world.
- A digital capacity-building program for local craftsmen on e-commerce will be implemented. This enables them to sell customary crafts like carpets and pottery directly to consumers globally. Local intermediaries are no longer needed.
- An ideal thorough multilingual website for Ghardaïa could integrate booking systems, inform people on the region's history, and tour people around the sites virtually, seeking to overcome the current scattered online presence.
- An e-WOM campaign could encourage domestic tourists to disseminate 'respectful' online information about M'Zab Valley's cultural features and build credibility for the destination, thereby overcoming perceived risks of visiting.
- High-speed internet infrastructure should be installed at the Ksour zones for the implementation of smart tourism projects, like QR-codes guided tours, which do not need a large number of people.
- Another solution for AR applications is a Geo-fencing technology which could be limited only to public tourist areas, maintaining the privacy of residents in the Ksour.

References:

1. Belaid, A. (2024). Tourism: What future in light of digital transformation -Study of the Egyptian experience-. *Journal of economics studies and researches in renewable energies*, 11(2), 110-121.
2. Bensalah, I., Yousfi, B., Menaa, N., & Bougattoucha, Z. (2018). *Urbanisation de la vallée du M'zab et mitage de la palmeraie de Ghardaïa (Algérie) : un patrimoine oasien menacé*. Belgeo, 2.

3. Benslimane, A., & Semaoune, K. (2023). Influence marketing and tourism: the issue of trust. *The International Journal in Economics and Business Strategies*, 3(1), 59-77.
4. Boulassas, M. S., & Saihi, K. (2025). The reality and prospects of desert tourism in Algeria -Tamanrasset case study-. *Journal of Studies in Economics and Management*, 8(1), 717-745.
5. Bourayou, H. A., & Mesmous, R. (2025). Tourism expansion strategy in Algeria between the Tourism Development Master Plan 2030 and the reality of achievements. *REVIEW OF ECO RESEARCH*, 20(2), 226-245.
6. Chara, L., & Benatallah, B. (2025). An Economic Analysis of the Role of Traditional Craft Institutions in Promoting Tourism: A Case Study of Ghardaïa- Algeria. *International Journal of Economic Perspectives*.
7. Charef, N. (2022). The role of cultural heritage sites in improving the tourist attractiveness of the territory - case of Algeria-. *AFAQ Review of Research and studies*, 5(2), 44-60.
8. Daoudi, N., & Kourbali, B. (2018). Le marketing touristique : Les pratiques de yield management en Algérie Cas : Des hotels du groupe EDEN. *Revue Des Etudes Economiques Approfondies*, 9, 24-58.
9. Didaoui, A. E., & Dani el kebir, N. (2021). L’usage du numérique dans le secteur touristique: Cas des agences de voyages de SIDI BEL ABBES. *Revue les cahiers du POIDEX*, 10(1), 20-35.
10. Fettih, M. L., & Derdiche, I. (2025). Promoting Tourism in Algeria: An Alternative Vision for Achieving Economic Growth. *The journal of research and scientific studies*, 19(1), 1323-1349.
11. Guellil, Z. (2025). The Contribution of Tourism to Achieving Sustainable Development Dimensions in Algeria. *Volume XI, 3*, 670-685.
12. ICOMOS. (1982). Advisory Body Evaluation (ICOMOS): M'Zab Valley (Algeria) No 188. Paris: ICOMOS.
13. Laggoun, S., & Mekideche, A. (2025). Digital Marketing and Cultural Heritage: A Comparative Study of the Impact of Digital Content on Travel Intention. *Economic Sciences, Management and Commercial Sciences Review*, 18(1), 345-359.

14. Mokrani, L., & Hadjou, L. (2022). Integration of Digital Marketing in the Promotion of Patrimony Tourism Case Study: Cultural Events in Tizi-Ouzou. *Marketing and Business Research Review*, 2(1), 45-51.
15. Sadaoui, F., Kheniche, Y., & Boubakeur, M. (2022). The impact of coronavirus on the tourism sector in Algeria: Case of Ghardaia. *Journal of Human Sciences Oum El Bouaghi University*, 9(1), 683-698.
16. Sahar, F. L., & Mouloudj, K. (2024). Factors Affecting The Behavioral Intention To Visit Sites Among Algerian Tourists Cultural Heritage. *ELWAHAT Journal for Research and Studies*, 17(1), 1089-1105.
17. Shafiee, S., & Ghatari, A. R. (2025). Tourism 4.0: Unveiling the Digital Transformation and Sustainable Development of the Tourism Industry. *Journal of Tourism, Sustainability and Well-being*, 13(3), 159-188.
18. Taamma, M. (2023). The Adoption of Digital Tourism Marketing and E-Tourism in Algeria : Obstacles, Opportunities, and Perspectives. *The International Journal in Economics and Business Strategies*, 3(2), 34-47.