

DIGITAL TRANSFORMATION, DESTINATION COMPETITIVENESS AND TOURIST LOYALTY IN JORDAN: A MEDIATED RELATIONSHIP

Wasef ALMAJALI ¹, Mahmoud ALLAHHAM ¹,
Omar JAWABREH ², Naawaf H. AL-FAWAREH ^{3*}

¹ Amman Arab University, Faculty of Business, Amman, Jordan; w.almajali@aau.edu.jo (W.A.); m.allahham@aau.edu.jo; (M.A.);

² The University of Jordan, Department of Hotel Management, Faculty of Tourism and Hospitality, Amman, Jordan; o.jawabreh@ju.edu.jo (O.J.)

³ Imam Mohammad Ibn Saud Islamic University (IMSIU), Collège of Media & Communication, Riyadh, Saudi Arabia; nalfawreh@imamu.edu.sa; (N.H.A)

Citation: Almajali, W., Allahham, M., Jawabreh, O., & AL-Alfawareh, N.H. (2026). Digital Transformation, Destination Competitiveness and Tourist Loyalty in Jordan: A Mediated Relationship. *Geojournal of Tourism and Geosites*, 66(2spl), 1827–1837. <https://doi.org/10.30892/gtg.662spl51-1812>

Abstract: The study explores the mediating nature of competitive advantage in the digital transformation tourist loyalty relationship within the tourism industry in Jordan. Due to the digital transformation changing the way tourism organizations engage with their visitors, deliver services, and experiences, the direct and indirect effects of digital transformation on loyalty has gained more importance. The research design assumes a quantitative cross-sectional study design, which involves a structured questionnaire that was administered to 185 professionals in the hotel, travel agents and tourism service providers in Jordan. Partial Least Squares Structural Equation Modeling (PLS-SEM) was used to test the hypothesized relationships of the collected data. The results have shown that digital transformation shows a prominent direct impact on tourist loyalty, improving the engagement, satisfaction and retention. Further, the findings show that the competitive advantage partly mediates this relationship, which means that the firms that use digital technologies to enhance their efficiency, innovations, and tailor their services earn better tourist loyalty performance. These findings highlight the fact that digital transformation is an enabler of strategic competitiveness, which enables tourism companies to distinguish their products and to establish long-term relationships with tourists. The research is also an addition to the expanding literature of work by empirically confirming the mediating position of competitive advantage and a conceptual framework of how digital technologies can be incorporated into the loyalty strategy. In practice, the study will inform tourism managers and policymakers in Jordan to focus on technological infrastructure, innovation-oriented strategies, and the development of digital skills to remain competitive and generate loyalty in the digital age.

Keywords: Digital Technologies Adoption, Digital Human Capital, Agility Orientation, Tourist Loyalty, Competitive Advantage

* * * * *

INTRODUCTION

The worldwide tourism and hospitality environment have undergone profound transformation over the past decade due to the digital revolution and the redefined mode of developing, sustaining, and stipulating tourist loyalty (Sudirjo et al., 2024).

The merger of digital technologies, including artificial intelligence, data analytics, and online platforms, has turned the service delivery, marketing, and customer relationship management into data-driven and interactive mechanisms that engage the tourists more and make them more satisfied (Hu et al., 2024; Dengra, 2024). In Jordan, where tourism is a key facilitator of the national economy, digital transformation strategies are becoming more significant in terms of the competitiveness and retention of long-term visitors (Al-Barakat et al., 2025; Li & Chu, 2025; Jawabreh et al., 2025; Saputra et al., 2023; Cordova-Buiza et al., 2025). Although the digital transformation is identified as a strategic performance driver in service industries, its impact on tourist loyalty is conditional on the efficiency of organizations in transforming technological projects into a sustainable competitive advantage (Nordhoff et al., 2020). Competitive advantage helps the tourism organizations to stand out of the crowd in terms of service delivery, responsiveness, and customer relations based on real-time engagement and personalized experiences. With the development of digital systems, companies using data integration and automation of processes are more likely to match the expectations of the visitors as well as adjust to market conditions (Alshurideh et al., 2023). This supports the point that digital transformation could be used as a driver of operational excellence, as well as sustained loyalty when properly aligned with organizational competencies and innovation potential (Fang et al., 2025; Aljabari et al., 2024; Jawabreh et al., 2024a; Yu & Wang, 2025). Although the extent of attention given to digital transformation in the emerging economies has increased, limited research has been conducted to

* Corresponding author

establish the relationship between the transformation and tourist loyalty and especially by means of competitive advantage (Bataineh et al., 2023). This difference is considerable since the investment in technology does not ensure the delivery of a better loyalty results unless it leads to the possibility of the firm developing a stronger value and sustaining a unique position in the market (Chopra & Raja, 2024). With the competition in the tourism industry of Jordan being at a high level and the preferences of tourists rapidly changing, it is critical to explore the role that digital transformation plays in differentiation and customer retention. This relationship needs to be explained critically to make evidence-based decisions and strategic plans in tourism and hospitality organizations (Sacco & Magnani, 2023; Rainoldi et al., 2025). Even though the concept of digitization in the tourism industry in Jordan has enhanced communication efforts, marketing, and service innovation, the intermediary processes by which the technological changes affect loyalty have not been adequately studied (Rossini et al., 2023). The aim of this research, therefore, is to examine how the digital transformation affects the tourist loyalty in Jordan with specific specialization to the mediating role of competitive advantage (Budiarto et al., 2024).

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

The present study investigates how digital transformation in the Jordanian tourism sector contributes to tourist loyalty through the mediating role of competitive advantage. The proposed framework integrates several complementary theoretical lenses: the Resource-Based View (RBV), Dynamic Capabilities Theory (DCT), human capital theory, and the literature on tourist loyalty and destination competitiveness in tourism. Digital transformation refers to the deep integration of digital technologies into an organization's core activities, processes, and value proposition, rather than the isolated adoption of individual tools or platforms (Mutmainah, 2025). In tourism, this process includes online booking systems, mobile applications, AI-powered chatbots, social media platforms, big data analytics, and smart tourism infrastructure (Ku, 2025).

Empirical studies show that effective digital transformation can enhance service quality, efficiency, and innovation in tourism, leading to improved visitor experiences and stronger market positions (Digital Transformation in Tourism and the Competitive Advantage of Global Tourism, n.d.). More specifically, digitalization supports personalized offers, real-time communication with tourists, dynamic pricing strategies, and data-driven decision-making that collectively strengthen both competitiveness and customer loyalty (Al-Hussein, et al., 2023; Marine-Roig, 2021). In this study, digital transformation is conceptualized as a higher-order construct comprising three key dimensions relevant to tourism organizations in Jordan:

Digital technologies adoption (e.g., booking engines, mobile apps, AI tools, CRM systems);

Digital human capital (employees' digital skills, literacy, and readiness for innovation);

Agility orientation (the ability to sense and respond quickly to technological and market changes).

These dimensions jointly represent the capabilities that enable tourism organizations to redesign their business models, co-create value with tourists, and compete more effectively in a rapidly evolving marketplace (Ku, 2025; Mutmainah, 2025).

The Resource-Based View (RBV) provides the foundational logic explaining why some organizations achieve superior and more sustainable performance than others. RBV posits that firms gain sustained competitive advantage when they possess resources and capabilities that are valuable, rare, inimitable, and non-substitutable. These resources may be tangible (e.g., infrastructure) or intangible (e.g., brand reputation, knowledge, skills, organizational culture) (Barney, 2001; Salazar, 2017).

Within the tourism context, digital platforms, data analytics capabilities, and specialized digital skills can satisfy RBV's criteria when they enable organizations to create unique experiences that competitors cannot easily replicate (EHL Hospitality Insights, 2023). However, technologies alone are not sufficient; their value depends on how they are embedded in organizational routines and combined with complementary resources such as human capital and agile management processes (Barney, 2001; Teece et al., 1997). Accordingly, this study conceptualizes digital transformation (technologies, skills, and agility) as a bundle of strategic resources and capabilities that can generate competitive advantage for tourism organizations in Jordan, which in turn is expected to foster higher tourist loyalty. Dynamic Capabilities Theory extends the RBV by focusing on a firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments (Teece et al., 1997; Teece, 2018). These capabilities allow firms not only to possess valuable resources, but also to renew and recombine them over time in response to technological and market shifts (Teece, 2018).

In tourism, characterized by volatility in demand, geopolitical risks, and fast-evolving digital tools, dynamic capabilities are crucial. Agility orientation is treated in this study as a specific manifestation of dynamic capabilities. It reflects the organization's ability to sense opportunities and threats (e.g., new platforms, changing tourist expectations), seize them through timely actions, and reconfigure structures, processes, and resources accordingly. Agile tourism organizations can rapidly adjust their products, digital communication strategies, and pricing to respond to real-time feedback and emerging trends. This responsiveness can strengthen their competitive position and enable them to provide more relevant, personalized, and resilient experiences, which are expected to enhance tourist satisfaction and loyalty (Ku, 2025).

The adoption of digital technologies is one of the most visible manifestations of digital transformation in tourism. Tools such as online reservation systems, mobile check-in, virtual tours, AI-based recommendation engines, and data-driven CRM have reshaped how tourists search for information, make decisions, and consume experiences (Ku, 2025).

From a service-dominant logic perspective, value is co-created through interactions between providers and customers across multiple touchpoints. Digital technologies expand and enrich these interactions, allowing tourists to engage with destinations before, during, and after their trips (Marine-Roig, 2021). When interfaces are reliable, secure, and user-friendly, they enhance convenience, reduce perceived risk, and improve information quality, leading to higher perceived value and satisfaction (Roig, 2021). Research indicates that digital transformation can increase brand visibility, strengthen reputation, and support long-term competitive advantage in tourism. Therefore, the current study proposes that digital technologies adoption contributes to competitive advantage when it is strategically aligned and combined with digital skills

and agile management to produce distinctive value propositions. Human capital theory emphasizes that investments in education, skills, and training enhance worker productivity and organizational performance. In a digitalized tourism environment, digital human capital—employees’ digital competencies, literacy, and innovation mindset—becomes particularly important (García, 2025; Abdullayev, 2025). Studies on tourism and hospitality highlight growing digital skills gaps and the need for systematic upgrading of competencies to keep pace with technological change (Carlisle et al., 2023; Skills Gap Analysis for the Jordanian Tourism Sector, 2022). When employees possess strong digital skills, they can effectively use CRM systems, analyze online reviews, manage social media, and leverage data analytics to personalize communication and design better experiences. From an RBV perspective, digital human capital constitutes an intangible, often tacit resource that can be difficult for competitors to imitate, particularly when it is embedded in the culture and routines of the organization (Barney, 2001). Presidential Professor of Management At the same time, it can be viewed as an enabling factor for dynamic capabilities, because skilled employees are more likely to experiment, adapt, and learn in response to new technologies and market conditions (Teece, 2018). Accordingly, the theoretical framework posits that digital human capital strengthens competitive advantage by improving service quality, innovation, and efficiency, and that it also has a direct positive influence on tourist loyalty, since competent staff can provide seamless integration between digital and physical encounters, build trust, and respond effectively to tourists’ needs.

Tourist loyalty is usually conceptualized as a multi-dimensional construct that includes attitudinal loyalty (favorable beliefs and preferences), affective loyalty (emotional attachment and trust), and behavioral loyalty (revisit intentions, actual repeat visits, and recommendation to others) (Hernández-Lobato et al., 2006; Marine-Roig, 2021). Extensive research has shown that loyalty in tourism is shaped by perceived quality, destination image, satisfaction, and perceived value (Hernández-Lobato et al., 2006; Králiková et al., 2020; Yen et al., 2024). In recent years, scholars have also examined online destination image, user-generated content, and eWOM as important antecedents of loyalty, reflecting the growing influence of digital channels in shaping tourist perceptions (Marine-Roig, 2021).

In the context of Jordan, empirical evidence suggests that improving destination image and tourist satisfaction can significantly enhance loyalty, particularly toward archaeological and heritage sites (Al-Sarhan, 2023; journals.aabu.edu.jo) Given the country’s strong reliance on tourism as a driver of economic development, understanding and strengthening tourist loyalty is essential for long-term sustainability. Building on this literature, the current study views tourist loyalty as the outcome of a chain of digital and strategic processes: digital transformation → competitive advantage → tourist loyalty. It assumes that tourists are more loyal when they perceive that a destination or service provider offers superior value, consistent and transparent information, reliable digital services, and responsive communication. The concept of competitive advantage is central to the theoretical framework. In line with RBV and dynamic capabilities perspectives, competitive advantage is treated as a multidimensional construct encompassing differentiation, innovation, and efficiency (Barney, 1991, 2001; Teece, 2018). Digital transformation—through technologies, digital human capital, and agility orientation—provides the raw material for creating such advantage. Specifically, it allows tourism organizations to:

Offer more innovative and personalized services (e.g., tailored itineraries, AI-based recommendations); Improve operational efficiency (e.g., automation, better capacity utilization, smoother processes); Strengthen market positioning (e.g., enhanced online visibility, improved reputation, better management of online reviews) (Wu et al., 2025).

Empirical research shows that digital transformation in tourism can help maintain competitiveness, achieve long-term advantage, and increase customer loyalty. At the same time, studies on destination image and satisfaction suggest that perceived superiority relative to competing destinations is a critical determinant of loyalty (Hernández-Lobato et al., 2006; Yen et al., 2024). Consequently, this study proposes that competitive advantage mediates the relationships between digital transformation dimensions (digital technologies adoption, digital human capital, agility orientation) and tourist loyalty. In other words, investments in digital capabilities are expected to foster loyalty primarily when they translate into a distinctive and superior value proposition in the eyes of tourists. Synthesizing the above arguments, the theoretical framework can be summarized in an integrated conceptual model with the following key propositions: Digital technologies adoption enhances competitive advantage and tourist loyalty by increasing efficiency, improving information quality, and enriching the customer experience (Ku, 2025). Digital human capital strengthens competitive advantage and loyalty by enabling effective use of digital tools and supporting continuous innovation in service design (Carlisle et al., 2023; García, 2025; Abdullayev, 2025). Agility orientation reflects a dynamic capability that allows tourism organizations to adapt rapidly to environmental changes, thereby reinforcing competitive advantage and tourist loyalty (Teece et al., 1997; Teece, 2018). Competitive advantage mediates the effects of digital technologies adoption, digital human capital, and agility orientation on tourist loyalty, connecting internal capabilities with external market outcomes (Barney, 1991). These relationships form the basis of the hypotheses tested in the empirical section of the study using structural equation modelling.

1. Digital Technologies Adoption and Competitive Advantage.

The digital technologies adoption is defined as the incorporation of innovative technologies like the artificial intelligence, big data analytics, and cloud computing, and the Internet of Things (IoT) into the organizational work. The technologies increase efficiency, efficiency in service provision, as well as better strategic decision-making enabling firms to outperform their competitors (Sharabati et al., 2023). The implementation of digital technologies in the tourism industry helps organizations to develop data-based observations, segmentation, and market responsiveness, which, collectively, provide a sustainable competitive advantage. In the case of Jordan tourism industry where the level of competition is increasing, but the level of digital maturity is not the same, technical adoption can be an innovation and differentiation driver.

H1: Use of digital technologies affects the competitive advantage positively.

2. Digital Technologies Adoption and Loyalty of the tourist

The adoption of digital technologies plays an important role in determining the loyalty of the tourists as it enhances the interaction with the customers, personalization, and satisfaction of the services. Digital channels and automation software add value to the experiences of tourists by enhancing real-time communication and online reviews and smooth booking systems, which enhance trust and satisfaction (Lescop et al., 2025; Haleem et al., 2022). The introduction of innovative technologies can assist tourism organizations in Jordan to retain customers and persuade them to visit the country again because more and more travelers are becoming exhausted with the digital inconvenience and lack of transparency in their traveling. This congruence between digital service provision and customer anticipations reinforces loyalty in a competitive tourism setting.

H2: The introduction of digital technologies positively affects the loyalty of tourists.

3. Competitive Advantage and Digital Human capital.

Digital human capital refers to employees' technological knowledge, digital proficiency, and adaptability to emerging innovations. A workforce equipped with strong digital competencies enables the organization to optimize technology utilization, improve productivity, and foster continuous innovation (Ahmad et al., 2024). Digital human capital can be used in the tourism sector to design value-added services, data-driven marketing and to respond quickly to the market trends. This is why companies investing in the development of digital competencies have a greater chance of achieving and maintaining the competitive advantage.

H3: Digital human capital positively affects the competitive advantage.

4. Tourist Loyalty and Digital Human Capital.

The level of digital skills among the service employees, who interact with travelers directly, also defines tourist loyalty. Digitally trained staff members increase the customer experience through the delivery of correct information, coordination of services, and personalized services (Alhaj et al., 2024). In the tourism sector business in Jordan where technology-based communication is becoming the most important when dealing with customers in terms of service delivery, the digital capabilities of human resources are central to meeting the same quality delivery and satisfaction of the customers. Therefore, digital human capital has a direct impact of increasing the loyalty of tourists with better interaction and service quality.

H4: Digital human capital positively affects tourist loyalty.

5. Agility Orientation and Competitive Advantage.

Agility orientation refers to the ability of an organization to respond fast to changes in the market, emerging technologies, as well as changing customer preferences. Agility enables firms to re-allocate their resources, create fast, and take advantage of new opportunities, which is a highly dynamic tourism environment (Morshed et al., 2024). Digital transformation enhances agility orientation because it facilitates flexible operations whereby tourism businesses can be able to predict demand and respond to it appropriately (Mehrotra et al., 2024; Al-Tahat et al., 2025; Alhasnawi et al., 2025). This responsiveness makes them to have better competitiveness and a better competitive position.

H5: Competitive advantage is positively affected by agility orientation.

6. Tourist Loyalty and Agility Orientation.

Organizational agility helps tourism companies to provide more responsive, customized and quicker services that contribute to an enjoyable tourist experience. When companies are flexible and fast to adapt to the feedback provided by the customers, the latter feel that they are more valuable and reliable and become more loyal (Niu et al., 2024). In the case of the Jordanian tourism organizations, the responsiveness of digital platforms in terms of promotions, services and matching services with the expectations of the travelers can also contribute a lot in terms of retention and repetition intentions.

H6: Agility orientation positively affects tourist loyalty.

7. Competitive Advantage and Tourist Loyalty.

Competitive advantage is a mediating variable between digital transformation activities and outcomes of tourist loyalty. It is an indication of the capability of a firm to deliver high quality by differentiated offerings, innovation, and effective service management (Jawabreh et al., 2024a). Even though tourism companies categorized as having a unique niche in the market, either in terms of technology, service delivery, or pricing, they were likely to establish better relationships with the travelers and prompt them to make repeat visits. Thus, creating competitive advantage can be a strategic course of action towards building and maintaining tourist loyalty within the tourism industry in Jordan.

H7: Tourist loyalty depends on competitive advantage positively.

METHODOLOGY

This study employed a quantitative, cross-sectional design to examine the relationships between digital transformation and tourist loyalty in Jordan while assessing the mediating role of competitive advantage. The proposed model conceptualizes digital transformation through three organizational capabilities—digital technologies adoption, digital human capital, and agility orientation—and tests their simultaneous effects on competitive advantage and tourist loyalty.

The research model was evaluated using partial least squares structural equation modeling (PLS-SEM) implemented in SmartPLS, which enables the estimation of direct and indirect paths within a single analytical framework and is appropriate for prediction-oriented models with multiple latent constructs. The target population comprised tourism-sector organizations operating in Jordan, including hotels, resorts, travel agencies, and other tourism service providers that

actively use digital systems or platforms in their daily operations. These organizations were selected because digitalization and innovation-driven strategies are increasingly essential for improving service quality, customer experience, and competitive positioning in the tourism market. A purposive sampling approach was adopted to ensure inclusion of firms that demonstrate a clear level of digital adoption in their business processes. Invitation links were distributed to 300 eligible organizations, resulting in 185 complete and usable questionnaires. Respondents were professionals with direct responsibility for strategic planning and customer engagement functions—primarily managers, marketing officers, and information technology specialists—thereby ensuring that the survey captured informed assessments of digital initiatives and market outcomes. Data were collected using a structured, self-administered questionnaire distributed electronically via email and professional tourism networks. All items were measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Digital technologies adoption was captured through indicators reflecting the use of tools such as online booking systems, mobile applications, automated customer service, and analytics-based decision support. Digital human capital was assessed by items measuring employees' digital literacy, technical competence, and readiness to learn and adapt to new systems. Agility orientation was measured through the organization's ability to respond rapidly to environmental changes, reconfigure processes, and support flexible decision-making. Competitive advantage was evaluated in terms of service differentiation, innovation, and operational efficiency, while tourist loyalty was measured through repeat visitation, satisfaction, and recommendation intentions. To enhance contextual validity, secondary evidence from sources such as the Jordan Tourism Board, the Ministry of Tourism and Antiquities, and TripAdvisor Insights reports was consulted to triangulate and interpret the findings.

4. Data Analysis

The tools were analyzed with the help of the Partial Least Squares Structural Equation Modeling (PLS-SEM) through Smart-PLS software which is appropriate in a complex model with mediating relationships. To check the construct reliability as well as convergent validity, merits of the measurement model were evaluated based on the Cronbach alpha, composite reliability (CR) and average variance extracted (AVE). The Fornell-Larcker criterion and HTMT ratio were used to measure discriminant validity. Bootstrapping of 5,000 resamples was used to test the structural model to estimate the significance of path coefficients and mediating effects. The appropriateness of the model was checked with model fit indices in the form of Standardized Root Mean Square Residual and Normed Fit Index. The conceptual framework of the research (Figure 1) refers to digital technology's adoption, digital human capital, and agility orientation as independent variables, competitive advantage as the mediating variable, and tourist loyalty as the dependent variable.

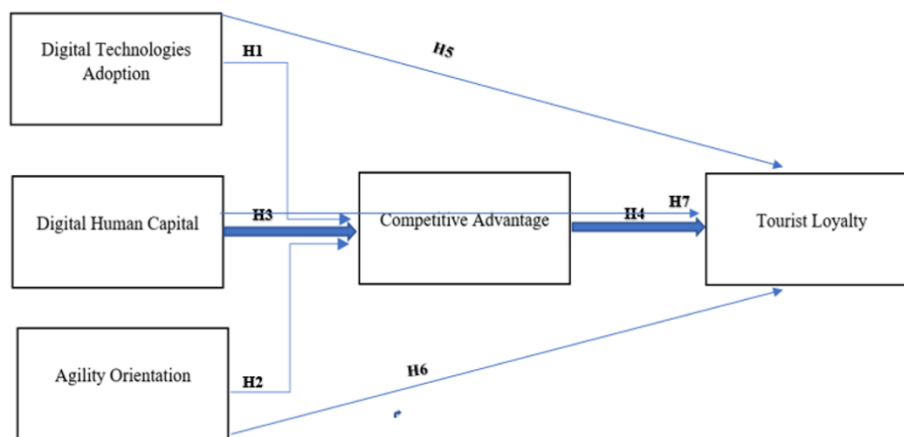


Figure 1. Research Model

DATA AND SAMPLE

The study sample was composed of tourism and hospitality companies in Jordan, hotels, resorts, restaurants, travel agencies, and other service providers that actively implemented digital transformation programs between the years 2015 and 2024. These organizations have been chosen because they are involved in embracing and implementing digital services including online booking systems, AI-enabled customer service, mobile apps/applications, and social media-based marketing tools. A uniform questionnaire was used to gather data electronically among marketing managers, IT professionals, and decision makers of these companies who were the target audience of the research study. The answers were supplemented by secondary sources such as the Ministry of Tourism and Antiquities of Jordan, TripAdvisor Insights, Booking.com Analytics, and Facebook Business Suite, to give the responses a more comprehensive contextual perspective of the digital performance indicators in the sector. The original sample comprised 300 tourism companies that could be proven to have digital engagement and an online presence. To ensure the authenticity of the data, organizations that do not have a quantifiable digital presence or evidence of using technological advancements were not included. One hundred and eighty-five valid responses were selected and analyzed in the end. The sample was sufficient to cover the various sub-sectors of the tourism and hospitality industry within Jordan and induced diversity in the dimensions of the business, ownership and digital maturity. The collected indicators were both quantitative and qualitative and aligned with the major constructs of the study Digital Technologies Adoption, Digital Human Capital, Agility Orientation, Competitive Advantage

and Tourist Loyalty. The measures of each construct were based on multi-item scale which was acquired in previous validated research and operationalized on a five-point Likert scale between 1 (strongly disagree) and 5 (strongly agree). This multi-layered data will allow us to assess the impact of digital transformation on the loyalty of tourists in a thorough way, both directly and indirectly by means of competitive advantage as a mediator. The analytical model shown in Figure 2 demonstrates the structural relationship between these constructs with digital technologies adoption, digital human capital and agility orientation being considered as antecedents to competitive advantage as well as tourist loyalty, and competitive advantage being considered as the mediating pathway through which these effects are amplified.

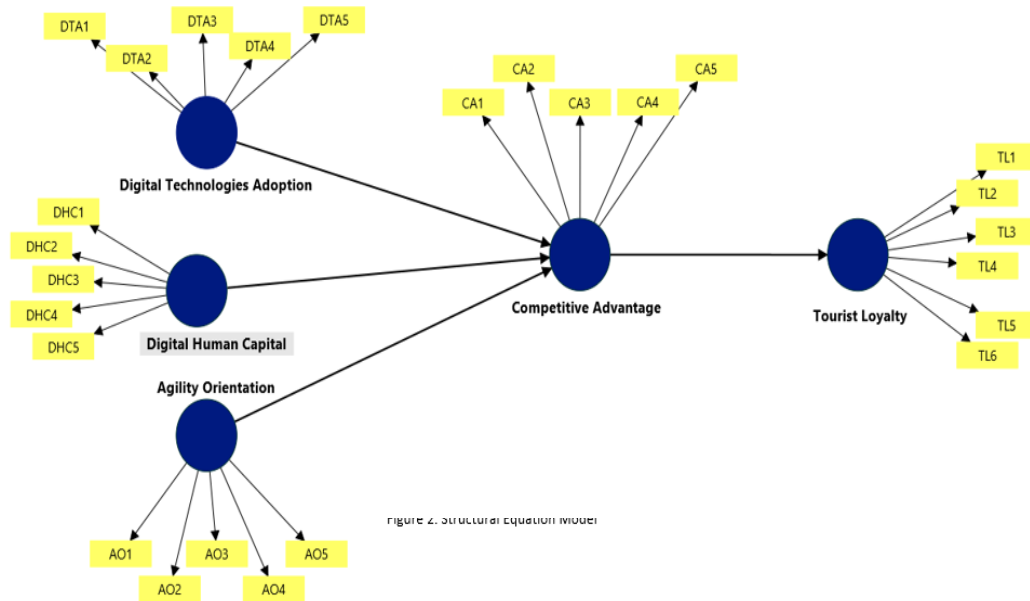


Figure 2. Structural Equation Model

Table 1, the measurement model, has a high level of psychometric strength, meeting all key requirements of indicator reliability, internal consistency, and convergent validity of the five constructs: agility orientation, competitive advantage, digital human capital, digital technologies adoption, and tourist loyalty. The loading of all items is up to 0.917, which is higher than 0.70, which is the minimum required threshold by Hair et al. (2019).

Table 1. Measurement items and reliability

Constructs	Items	Factor loadings	Cronbach's Alpha	C.R.	(AVE)
Agility Orientation	AO1	0.869	0.885	0.916	0.686
	AO2	0.833			
	AO3	0.749			
	AO4	0.852			
	AO5	0.833			
Competitive Advantage	CA1	0.842	0.888	0.918	0.692
	CA2	0.781			
	CA3	0.872			
	CA4	0.844			
	CA5	0.817			
Digital Human Capital	DHC1	0.824	0.867	0.904	0.653
	DHC2	0.748			
	DHC3	0.783			
	DHC4	0.808			
	DHC5	0.873			
Digital Technologies Adoption	DTA1	0.855	0.915	0.934	0.741
	DTA2	0.852			
	DTA3	0.871			
	DTA4	0.806			
	DTA5	0.917			
Tourist Loyalty	TL1	0.758	0.899	0.923	0.665
	TL2	0.863			
	TL3	0.826			
	TL4	0.844			
	TL5	0.817			
	TL6	0.783			

This means that every item plays an important role in the latent construct that it has and that the observed variables are reliable measures of their theoretical dimensions. The Digital Technologies Adoption construct has the highest loadings

(0.806-0.917), indicating that the indicators of technology adoption have a strong relation with the overall construct. On the same note, Agility Orientation (0.749-0.869) and Competitive Advantage (0.781-0.872) have high measurement alignment that indicates that the indicators reliably measure adaptability and differentiation qualities in tourism organizations. The Digital Human Capital (0.748-0.873) and Tourist Loyalty (0.758-0.863) constructs have significant loading values as well, and this proves that the operationalization of digital competencies and loyalty behavior was correctly achieved in the model. Regarding internal consistency, the Cronbach's alpha values of all are within the limits of 0.867-0.915, with the Composite Reliability (CR) values being 0.904-0.934, which is way higher than the recommended value of 0.70. This implies that the measurement items in each construct have high reliability and stability, which means a small random error in measuring it. Digital Technologies Adoption (0.915; CR = 0.934) and Competitive Advantage (0.888; CR = 0.918) demonstrate particularly high consistency, which means that the constructs are internally consistent and are precisely measured. The values of the Average Variance Extracted (AVE), which are 0.653-0.741, are larger than the cutoff level of 0.50; hence, the values confirm convergent validity. The values suggest that all the constructs have over 65% of their observed items explained by each construct. Digital Technologies Adoption (0.741) has the highest AVE, indicating that it is a very strong explanatory factor, although its Digital Human Capital (0.653) is slightly lower but still acceptable. All these findings indicate that the measurement model has a great reliability and validity feature. Each of the constructs has an acceptable factor loading, Cronbach's Alpha, composite reliability, and AVE, and this assures that the model has a solid measurement basis. These results support the suggestion of the use of structural equation modeling (PLS-SEM) analysis, which will result in the further testing of hypotheses on statistically significant and theoretically sound measures.

Table 2. Discriminant Validity – HTMT Matrix

	Agility Orientation	Competitive Advantage	Digital Human Capital	Digital Technologies Adoption	Tourist Loyalty
Agility Orientation					
Competitive Advantage	0.524				
Digital Human Capital	0.5	0.7			
Digital Technologies Adoption	0.306	0.322	0.385		
Tourist Loyalty	0.655	0.674	0.541	0.354	

Table 3. Fornell-Larcker

	Agility Orientation	Competitive Advantage	Digital Human Capital	Digital Technologies Adoption	Tourist Loyalty
Agility Orientation	0.828				
Competitive Advantage	0.465	0.832			
Digital Human Capital	0.436	0.62	0.808		
Digital Technologies Adoption	0.271	0.316	0.367	0.861	
Tourist Loyalty	0.579	0.612	0.479	0.325	0.816

Table 2, shows the HTMT test and it is observed that all the constructions have positive and significant correlations. The findings indicate that Digital Human Capital ($r = 0.700$) and Tourist Loyalty ($r = 0.674$) have a significant correlation with Competitive Advantage, which implies that competitive positioning is not only related to the digital capabilities of employees but also directly related to the commitment of tourists. Equally, Agility Orientation demonstrates positive correlation to Tourist Loyalty ($r = 0.655$) meaning that corporate flexibility and responsiveness increase the satisfaction and retention of tourists. The presence of moderate r ations between Digital Technologies Adoption and other constructs (0.306 to 0.385) suggests that, although technology use is positively associated with it, it has more significant impacts when mediated by agility and human capital. In general, the conceptual model is supported by the matrix, which demonstrates that digital transformation dimensions all provide a competitive advantage and tourist loyalty to the tourism industry in Jordan.

Table 3 shows the Fornell-Larcker test that is applicable to determine the discriminant validity among the study constructs. The Inter-Extracted-construct-Ratios similar to the square root of the Average Variance Extracted (AVE) at the diagonal are all greater than the inter-construct correlations in rows and columns. This attests to the fact that every construct has a greater amount of variance with its indicators compared to other constructs, which meets the discriminant validity requirement (Fornell & Larcker, 1981). Precisely, the construct distinctiveness is the highest in Digital Technologies Adoption (0.861) and Competitive Advantage (0.832), and the construct of the Tourist Loyalty (0.816) has very clear segregation between it and the constructs Agility Orientation (0.828) and Digital Human Capital (0.808).

The moderate correlations that are found (e.g., $r = 0.612$ between Competitive Advantage and Tourist Loyalty) indicate meaningful but yet non-redundant relationships. Altogether, the findings indicate that all the constructions in the measurement model are empirically differentiated and conceptually sound, which supports the strength of the discriminant validity of the model. The findings on the structural model analysis using the PLS-SEM are reported in Table 2 which examines the correlation between the digital transformation dimensions, competitive advantage, and tourist loyalty of Egyptian tourism in Jordan. The results indicate that competitive advantage is a strong mediating variable that enhances the direct impacts of the digital transformation constructs on tourist loyalty. Digital technologies adoption has a high positive influence on competitive advantage (0.322) and tourist loyalty (0.354), which means that the use of digital systems, AI-based tools, and automated services directly contributes to the organizational competitiveness and retention of clients. On the same note, digital human capital associates highly with both competitive advantage (0.700) and tourist loyalty (0.541),

which validates that the technological ability and flexibility of employees is the key factor in sustaining customer engagement. Moreover, the agility orientation positively affects the competitive advantage (= 0.524) and tourist loyalty (= 0.655), indicating that the quicker the organization adapts to technological and market changes the higher its ability to enhance the area of the traveler satisfaction and loyalty. Relationships between competitive advantage and tourist loyalty are also important (0.674), which means that competitive differentiation in the form of innovation, efficiency and quality service provision is a great factor in determining repeat visitation and brand trust.

The findings prove that digital transformation improves tourist loyalty directly and indirectly via competitive advantage and hence the mediating construct is a strategic connection between digital adoption, human capital development and organizational agility and long-term customer loyalty within the tourism sector in Jordan.

Table 4 shows the value of the R² and adjusted R² of the endogenous constructs, which shows the explanatory capacity of the model. The R² of Competitive Advantage is 0.435 implying that about 43.5 percent of the variance of Competitive Advantage is attributed to the aggregate influence of Agility Orientation, Digital Human Capital, and Digital Technologies Adoption. Such explanatory power is moderate as per the classification created by Hair et al. (2019), which proves that the dimensions of digital transformation have a significant meaning to enhance the competitiveness of the organization. Equally, the R² of Tourist Loyalty is 0.375, which implies that 37.5 percent of the variation in Tourist Loyalty is explained by Competitive Advantage, Agility Orientation, Digital Human Capital, and Digital Technologies Adoption. This means that although there are other external factors that affect tourist loyalty (e.g., destination experience, service quality), the model has a quite large predictive ability even in the environment of digital transformation. The adjusted R² values (0.430 and 0.373) that adjusts the complexity of the model and the sample size are quite similar to their unadjusted equivalents indicating the stability and reliability of the structural model. The overall outcome of the R² shows that the model is sufficiently predictably relevant as digital transformation constructs can predict a significant amount of variance in both competitive advantage and tourist loyalty in the tourism sector of Jordan.

The Table 5 is the hypothesis testing results of the PLS-SEM analysis that indicates that six out of seven proposed relationships are statistically supported. The findings indicate that Agility Orientation has a significant positive effect on Competitive Advantage ($B = 0.229$, $t = 5.046$, $p < 0.001$) and Tourist Loyalty ($B = 0.140$, $t = 4.184$, $p < 0.001$) to imply that flexible and adaptable organizations have better performance and customer loyalty. Competitive Advantage is a strong predictor of Tourist Loyalty ($0.612 = -13.111 = .001$) that demonstrates its mediating position between the strategic capabilities and the outcomes of loyalty. Similarly, Digital Human Capital has a strong effect on Competitive Advantage (0.488 , $t = 10.244$, $p = 0.001$) and Tourist Loyalty (0.299 , $t = 7.955$, $p = 0.001$), which is why digital skills and technological competence are important to keep a business competitive. Even though Digital Technologies Adoption has a positive influence on Competitive Advantage (0.084 , $t = 1.995$, $p = 0.046$) direct effect on Tourist Loyalty (0.051 , $t = 1.919$, $p = 0.055$) is not significant which means that technology will not ensure the loyalty unless it is integrated strategically and with people. On the whole, the results confirm the model, indicating that agility, human capital and competitive advantage are critical channels according to which the digital transformation leads to tourist loyalty within the tourism industry in Jordan.

Table 4. R2 Adjusted

Variable	R-square	R-square adjusted
Competitive Advantage	0.435	0.43
Tourist Loyalty	0.375	0.373

Table 5. Hypothesis testing estimates

	Original sample	Standard deviation	T statistics	P values	Result
Agility Orientation -> Competitive Advantage	0.229	0.045	5.046	0	Supported
Agility Orientation -> Tourist Loyalty	0.14	0.033	4.184	0	Supported
Competitive Advantage -> Tourist Loyalty	0.612	0.047	13.111	0	Supported
Digital Human Capital -> Competitive Advantage	0.488	0.048	10.244	0	Supported
Digital Human Capital -> Tourist Loyalty	0.299	0.038	7.955	0	Supported
Digital Technologies Adoption -> Competitive Advantage	0.084	0.042	1.995	0.046	Supported
Digital Technologies Adoption -> Tourist Loyalty	0.051	0.027	1.919	0.055	Unsupported

CONCLUSIONS

The findings of this study examine how three key dimensions of digital transformation—Digital Technologies Adoption, Digital Human Capital, and Agility Orientation—shape Tourist Loyalty in Jordan, with Competitive Advantage tested as a mediating mechanism. Using the PLS-SEM approach, the results confirm that digital transformation should not be treated as a single, technology-only initiative; rather, it is a multi-dimensional capability in which technology, people, and organizational responsiveness interact to produce tangible market outcomes. The most prominent result is that Competitive Advantage emerges as the strongest and most proximal determinant of Tourist Loyalty. The path coefficient is both large and statistically significant ($\beta = 0.612$, $p = 0.000$), indicating that when tourism organizations succeed in building differentiation, improving service efficiency, and strengthening innovation, they are more likely to retain tourists, stimulate repeat visitation, and generate positive word-of-mouth and brand advocacy. These finding positions competitive advantage as the key “value conversion” channel through which digital transformation initiatives translate into observable loyalty behaviors.

In parallel, Digital Human Capital proves to be a critical driver within the model. It exerts a significant positive effect on Competitive Advantage ($\beta = 0.488$, $p = 0.000$) and a direct positive effect on Tourist Loyalty ($\beta = 0.299$, $p = 0.000$).

These results highlight that digital skills, technological literacy, and employee readiness to adapt are not optional complements to technology investment; they are essential conditions for turning digital tools into sustainable competitiveness and enhanced customer experience. In practical terms, the presence of advanced systems and platforms alone does not guarantee superior performance unless the workforce can use them effectively, learning continuously, and applying them in ways that improve service quality, personalization, and responsiveness. Agility Orientation also demonstrates meaningful contributions to the model, showing significant positive associations with both Competitive Advantage ($\beta = 0.229$, $p = 0.000$) and Tourist Loyalty ($\beta = 0.140$, $p = 0.000$). This supports the view that tourism organizations that are flexible, responsive, and capable of adjusting rapidly to market shifts and technological change are better positioned to meet evolving tourist expectations and to sustain loyalty over time. However, in relative terms, the magnitude of agility's effect is smaller than that of competitive advantage and digital human capital, suggesting that agility functions more as an enabling force that strengthens outcomes when paired with strategic positioning and skilled human resources.

In contrast, the results provide a more cautious interpretation of Digital Technologies Adoption. The relationship between technology adoption and Competitive Advantage is positive but weak and not strongly supported in practical terms ($\beta = 0.084$, $p = 0.046$). This implies that adopting digital tools, automated systems, and platforms may contribute to competitiveness through improved operational efficiency and information flow, yet the effect remains limited unless these technologies are strategically aligned and supported by human and managerial capabilities. More importantly, the direct link between Digital Technologies Adoption and Tourist Loyalty is statistically insignificant ($\beta = 0.051$, $p = 0.055$).

This indicates that "technology by itself" does not generate loyalty; tourists do not become loyal simply because a firm uses digital systems. Loyalty arises when technology is embedded within a broader capability-building strategy that improves service reliability, convenience, personalization, and overall value. Taken together, the findings empirically confirm that digital transformation is a capability-enhancement process rather than a purely technological shift.

The strongest pathway to loyalty operates through Competitive Advantage, which acts as the central mediating mechanism converting digital transformation inputs into concrete loyalty outcomes. Accordingly, the study suggests that tourism organizations in Jordan will achieve higher returns from digital transformation when they invest not only in digital infrastructure, but also in workforce upskilling/reskilling and agile strategic planning that enables rapid adaptation.

Overall, the evidence indicates that Digital Human Capital, Agility Orientation, and Competitive Advantage are the most influential predictors of Tourist Loyalty, while Digital Technologies Adoption plays a supportive role and cannot be treated as the primary driver unless complemented by strong human and organizational capabilities.

Theoretical Implications

The current study contributes to the theoretical knowledge of digital transformation and tourist loyalty by empirically proving the mediating role of competitive advantage in the Jordanian tourism environment. This work enhances the existing body of literature by incorporating the views of digital technologies adoption, digital human capital, and agility orientation as dimensions that are interdependent to determine loyalty outcomes. The results affirm that digital transformation does not only represent a technological phenomenon, but a strategic capability framework, which is closely related to the propositions of the Dynamic Capability Theory (DCT), which focuses on the capacity of a firm to integrate, reconfigure, and renew resources as a response to technological and market change. The two important functions of digital human capital and organizational agility support the thesis that human and strategic competencies play a crucial role in the transformation of digital investments into a competitive advantage and customer retention. The research also contributes to theoretical discussion by showing that competitive advantage is an essential mediating variable between internal digital resources and external loyalty results, which is dynamic and relational in terms of performance production in the tourism sector. Moreover, the non-significant direct correlation between the adoption of digital technologies and tourist loyalty supports the theoretical statement that the technology itself is not the factor value-creating system that cannot be integrated into a more complex system of human, organizational, and strategic resources. This observation brings a finer tuning on existing theories of digital transformation by establishing technology as a facilitator and not an independent generator of loyalty. Therefore, the model transcends the common linear view to the multi-layered, ability-based model, which explains how the tourism organizations in the growing economies can exploit the digital assets, the workforce preparedness, and adaptable agility to realize sustainable competitiveness and long-term visitor loyalty.

Limitations of the Study

This level of restrictions is there, despite the fact that the present study has provided useful results. The data that was gathered was cross sectional and specific to tourism and hospitality organizations within Jordan and this limits generalization of the findings to other sectors or other geographical environments. The second weakness is the range of variables as the research mainly centered on the adoption of digital technologies, digital human capital, agility orientation, competitive advantage, and tourist loyalty without considering the other possible determinants like the quality of services, destination image, cultural factors and customer experience which could also contribute to the loyalty results. Moreover, the interpretation of self-reported questionnaires might have resulted in common method bias since the respondents might have overrated the effectiveness of digital initiatives or underreported the operation difficulties because of organizational or personal estimations. Also, the study failed to use longitudinal data, which would have given a better insight on causal relationships and how the effects of digital transformation would have changed over time. Further studies may utilize a longitudinal design to evaluate changes over time, include sustainability practices and customer satisfaction measures, and cross-regional or sector-wide comparative studies to increase the external validity of the study and the insight of how digital transformation influences competitiveness and loyalty in various service settings.

Author Contributions: Conceptualization, M.A.; methodology, O.J.; software, W.A and O.J.; validation, N.H.F. and O.A. and M.A; formal analysis, M.A.; investigation, W.A and O.J.; data curation, N.H.F and M.A.; and O.J. writing - original draft preparation, M.A.; writing - review and editing, N.H.F and O.A. visualization, N.H.F. and O.A and O.J.; supervision, O.J. and M.A.; project administration, O.J. and W.A. All authors have read and agreed to the published version of the manuscript.

Funding: Not applicable.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Not applicable.

Acknowledgment : This work was supported and funded by the Deanship of Scientific Research at Imam Mohammad Ibn Saud Islamic University (IMSIU) (grant number IMSIU-DDRSP2604).

Conflicts of Interest: The authors declare no conflict of interest.

REFERENCES

- Abdullayev, A., & Alakbarov, A. (2025). Human Capital and Digital Skills as Drivers of Firm-Level Competitiveness in Azerbaijan's Transition Economy. *Luminis Applied Science and Engineering*, 2(3), 27-34. <https://doi.org/10.69760/lumin.2025003002>
- Alawneh, O. M., Allahham, M., Habeeb, A. F. H., Almajali, W., Al-Nsour, I. A., & Jawabreh, O. (2025). Evaluating How Big Data Analysis Mediates the Impact of Digital Marketing Strategies on Tourism Development in Jordan. *GeoJournal of Tourism and Geosites*, 62(4), 2053–2062. <https://doi.org/10.30892/gtg.62405-1571>
- Al-Hussein, M. A.-H. A., Alabdallat, W. I. M., Abu, M. A., Rumman, O. J., & Ali, B. J. (2023). Impact of E-Government Applications on Reducing Administrative Burden in Delivering Public Service. *Information Sciences Letters*, 12(3), 1663-1671. <https://doi.org/http://dx.doi.org/10.18576/isl/120350>
- Al-Barakat, A. A., Al-Hassan, O. M., AlALI, R. M., & Al-Saud, K. M. (2025). The role of e-professional development programs in developing digital technology skills among primary geography teachers. *GeoJournal of Tourism and Geosites*, 59(2), 661–673. <https://doi.org/10.30892/gtg.59213-1445>
- Alhaj & Abdullah. A. (2024). Efficient and Secure Data Transmission: Cryptography Techniques Using ECC. *Indonesian Journal of Electrical Engineering and Computer Science*, 36(1), 486-492. <https://doi.org/10.11591/ijeecs.v36.i1>
- Alhasnawi, M. Y., Alshdaifat, S. M., Mansour, M., Saleh, M. W., & Hu, G. (2025). How does performance-based budgeting enhance sustainable performance? A mediated-moderated model of innovation and information quality. *International Journal of Innovation Science*, 1–19. <https://doi.org/10.1108/IJIS-08-2025-0418>
- Aljabari, M., Althuwaini, S., Bouguerra, A., Sharabati, A. A. A., Allahham, M., & Allan, M. (2024a). The impact of digital marketing strategies on innovation: The mediating role of AI: A critical study of SMEs in the KSA market. *International Journal of Data and Network Science*, 8(4), 2029–2036. <https://doi.org/10.5267/j.ijdns.2024.7.006>
- Al-Sarhan, A., & Al-Azzam, A. (2023). The mediating effect of tourists' satisfaction on the relationship between destination image and tourists' loyalty: a study of selected archaeological sites of Jordan. *Business Series*, 2(2), 169–190. <https://doi.org/10.59759/business.v2i2.244>
- Alshurideh, M. T., Alquqa, E. K., Alzoubi, H. M., Al Kurdi, B., & Hamadneh, S. (2023). The effect of information security on e-supply chain in the UAE logistics and distribution industry. *Uncertain Supply Chain Management*, 11(1), 145–152. <https://doi.org/10.5267/j.uscm.2022.11.001>
- Al-Tahat, S., Bani-Khaled, S., Jaradat, Z., Mansour, M., & Al-Zoubi, A. M. (2025). State ownership as a moderator in the relationship between board characteristics and ESG performance: Evidence from Asia-Pacific markets. *Journal of Business and Socio-Economic Development*, 1–22. <https://doi.org/10.1108/JBSED-05-2025-0145>
- Barney, J., Wright, M., & Ketchen, D. J. (2001). The resource-based view of the firm: Ten years after 1991. *Journal of Management*, 27(6), 625–641. <https://doi.org/10.1177/014920630102700601>
- Barney, J. B. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17, 99-120. <https://doi.org/10.1177/014920639101700108>
- Bataineh, A. Q., Abu-Alsoudos, I. A., Idris, M., Mushtaha, A. S., & Qasim, D. M. (2023). The Role of Big Data Analytics in Driving Innovation in Digital Marketing. *2023 9th International Conference on Optimization and Applications, ICOA 2023 - Proceedings*, 1–5. <https://doi.org/10.1109/ICOA58279.2023.10308854>
- Budiarto, B. W., Wulandari, Sugeng, K., Loso, J., & Wenny, D. F. (2024). Analysis Of The Influence Of Spiritual Capital, Motivation And Work Competencies On Performance Of Human Resource In Smes Sector. *JEMSI (Jurnal Ekonomi, Manajemen, Dan Akuntansi)*, 10(1), 240–246. <https://doi.org/10.35870/jemsi.v10i1.1906>
- Carlisle, S., Ivanov, S., & Dijkmans, C. (2021). The digital skills divide: evidence from the European tourism industry. *Journal of Tourism Futures*, 9(2), 240–266. <https://doi.org/10.1108/jtf-07-2020-0114>
- Cohen, S., & Hannonen, O. (2025). A review of research into lifestyle mobilities and digital nomadism. *Annals of Tourism Research*, 116, 104067. <https://doi.org/10.1016/j.annals.2025.104067>
- Chopra, B., & Raja, V. (2024). *Toward Enhanced Privacy in Digital Marketing : An Integrated Approach to User Modeling Utilizing Deep Learning on a Data Monetization Platform* Product manager Google Software engineer , Meta Article History : 1(01).
- Culek, C. (2025, September 6). Dynamic capabilities: The source of competitive advantage. *Bâton Global*. <https://www.batonglobal.com/post/dynamic-capabilities-the-source-of-competitive-advantage>
- Dengra, B. M. (2024). *Impact of Celebrity Endorsement on Customer ' s Buying Behaviour with Reference to Indore City. 05003.*
- Cordova-Buiza, F., Grillo-Torres, C. M., & Vega, C. R. (2025). Gastronomic culture and social networks: the impact of digital strategies on the promotion of traditional colombian cuisine. *GeoJournal of Tourism and Geosites*, 59(2), 587–594. <https://doi.org/10.30892/gtg.59207-1439>
- Fang, M., Nguyen, V. T., Minh, T. L., Louie, J., Pham, L. N., & Hewson, C. (2025). Leadership networks: Shaping AI innovations through responsible practices in Vietnamese tourism and hospitality firms. *Tourism Management*, 113, 105317. <https://doi.org/10.1016/j.tourman.2025.105317>
- García, R. M. R., Ruiz, J. a. C., García, M. D. A., & Corona, A. K. A. (2024). Digital skills in the formation of human capital for tourism activity. In *Advances in human resources management and organizational development book series* 221–236. <https://doi.org/10.4018/979-8-3693-7086-5.ch009>

- Haleem, A., Javaid, M., Asim Qadri, M., Pratap Singh, R., & Suman, R. (2022). Artificial intelligence (AI) applications for marketing: A literature-based study. *International Journal of Intelligent Networks*, 3(July), 119–132. <https://doi.org/10.1016/j.ijin.2022.08.005>
- Hernández-Lobato, L., Solis-Radilla, M. M., Moliner-Tena, M. A., & Sánchez-García, J. (2006). Tourism Destination Image, Satisfaction and Loyalty: A study in Ixtapa-Zihuatanejo, Mexico. *Tourism Geographies*, 8(4), 343–358. <https://doi.org/10.1080/14616680600922039>
- Hu, B., E. X., Zheng, T., & Zhang, K. (2024). Can digital transformation promote hospitality and tourism firms' investment? Moderating effect of financing constraints and economic policy uncertainty. *Current Issues in Tourism*, 1–21. <https://doi.org/10.1080/13683500.2024.2420852>
- Hussain, K., Sun, H., Ramzan, M., Mahmood, S., & Zubair Saeed, M. (2024). Interpretive structural modeling of barriers to sustainable tourism development: A developing economy perspective. *Sustainability*, 16(13), 5442. (2024). 16, 5442.
- Jawabreh, O., Fahmawee, E. A. D. A., Al-Ansari, R. W., Mahmoud, R., & Nassar, U. A. (2025). Geomorphological structure of landform characteristics as a reference for development recommendations in wadi rum protected area. *GeoJournal of Tourism and Geosites*, 58(1), 433–445. <https://doi.org/10.30892/gtg.58140-1425>
- Jawabreh, O., Fahmawee, E. A. D. Al, Jahmani, A., Ali, B. J. A., & Jahameh, S. S. (2023). a Comprehensive Analysis of Coastal and Marine Tourism: Evaluating the Impact of Activities, Intentions, and Reason for Visiting on Visitor Satisfaction: The Moderating Influence of Visitor Types. *Geojournal of Tourism and Geosites*, 50(4), 1339–1349. <https://doi.org/10.30892/gtg.50414-1132>
- Jawabreh, O., Fahmawee, E. A. D. A., Masa'deh, R., & Abdelrazaq, H. (2024a). service quality and organizational excellence and their relationships with the wadi rum protected area employees' job satisfaction. *Geojournal of Tourism and Geosites*, 53(2), 620–630. . <https://doi.org/10.30892/gtg.53223-1235>
- Jawabreh, O., Allahham, M., Alawneh, O. M., Habeeb, A. F. H., Almajali, W., & Al-Nsour, I. A. (2025). The Impact of IoT on Tourist Satisfaction: The Mediating Role of HRM Capabilities in the Hotel Industry. *GeoJournal of Tourism and Geosites*, 62(4), 2158–2169. <https://doi.org/10.30892/gtg.62415-1581>
- Jawabreh, O. (2020). Innovation management in hotels industry in Aqaba Special Economic Zone authority; hotel classification and administration as a moderator. *GeoJournal of Tourism and Geosites*, 32(4), 1362–1369. <https://doi.org/10.30892/gtg.32425-581>
- Jawabreh, O., Abdelrazaq, H., & Jahmani, A. (2021). Business sustainability practice and operational management in hotel industry in Aqaba Special Authority Economic Zone Authority (Aseza). *GeoJournal of Tourism and Geosites*, 38(4), 1089–1097. <https://doi.org/10.30892/gtg.38414-748>
- Ku, E. C. (2024). Tourism digital transformation and future supply chain competition: an integrated perspective on real options theory and digital competencies. *Journal of Tourism Futures*, 11(2), 240–260. <https://doi.org/10.1108/jtf-10-2023-0232>
- Lescop, D., Keen, C., Alayo, M., & Sanchez-Famoso, V. (2025). Translating sustainability into performance: the role of digital transformation and CEO gender in small and medium-sized hotels. *Journal of Sustainable Tourism*, 1–24. <https://doi.org/10.1080/09669582.2025.2591127>
- Li, H., & Chu, C. (2025). Digital anthropomorphism of accommodation: The influence of contextual and content-based femininity imagery of hotels on tourist satisfaction. *Annals of Tourism Research*, 114, 103996. <https://doi.org/10.1016/j.annals.2025.103996>
- Mehrotra, A., Agarwal, R., Awan, U., Walsh, S. T., & Yaqub, M. Z. (2024). Zero waste solutions in hospitality: technology alignment and agile management practices for responsible consumption and production of food. *Journal of Sustainable Tourism*, 33(12), 2715–2748. <https://doi.org/10.1080/09669582.2024.2427821>
- Marine-Roig, E. (2021). Measuring Online Destination Image, Satisfaction, and Loyalty: Evidence from Barcelona Districts. *Tourism and Hospitality*, 2(1), 62–78. <https://doi.org/10.3390/tourhosp2010004>
- Morshed, A., Maali, B., Ramadan, A., Zoubi, M., & Allahham, M. (2024). The impact of supply chain finance on financial sustainability in Jordanian SMEs. *Uncertain Supply Chain Management*, 12(4), 2767–2776. <https://doi.org/10.5267/j.uscm.2023.12.013>
- Niu, P., Sun, K., Sun, L., & Chang, C. W. (2024). The political economy and green innovation: A scientometric analysis. *Innovation and Green Development*, 3(2), 100116. <https://doi.org/10.1016/j.igd.2023.100116>
- Nordhoff, S., Louw, T., Innamaa, S., Lehtonen, E., Beuster, A., Torrao, G., Bjorvatn, A., Kessel, T., Malin, F., Happee, R., & Merat, N. (2020). Using the UTAUT2 model to explain public acceptance of conditionally automated (L3) cars: A questionnaire study among 9,118 car drivers from eight European countries. *Transportation Research Part F: Traffic Psychology and Behaviour*, 74, 280–297. <https://doi.org/10.1016/j.trf.2020.07.015>
- Mo, Z., Liu, X., Zhu, M., & Liu, M. T. (2025). How the cross-level interaction of AI awareness and digital transformational leadership can prompt tourism and hospitality employees' service performance. *Current Issues in Tourism*, 1–20. <https://doi.org/10.1080/13683500.2025.2571892>
- Rainoldi, M., Ladkin, A., & Buhalis, D. (2025). Digital nomads' work-leisure management practices. *Annals of Tourism Research*, 111, 103904. <https://doi.org/10.1016/j.annals.2025.103904>
- Rossini, M., Powell, D. J., & Kundu, K. (2023). Lean supply chain management and Industry 4.0: a systematic literature review. *International Journal of Lean Six Sigma*, 14(2), 253–276. <https://doi.org/10.1108/IJLSS-05-2021-0092>
- Sacco, F., & Magnani, G. (2023). *Sustainability and Resilience in the Extended Value Chain: The Case of STMicroelectronics*. February 2023, 197–218. <https://doi.org/10.1108/s1876-066x20230000037011>
- Salazar, L. A. L. (2017). The resource-based theory of competitive advantage: Implications for strategy formulation. *Revista de Administração da UFSM*, 10(2), 177–196.
- Saputra, K. A. K., Subroto, B., Rahman, A. F., & Saraswati, E. (2023). Mediation Role of Environmental Management Accounting on the Effect of Green Competitive Advantage on Sustainable Performance. *Journal of Sustainability Science and Management*, 18(2), 103–115. <https://doi.org/10.46754/jssm.2023.02.008>
- Sharabati, A. A., Allahham, M., Yahya, A., Ahmad, B., & Sabra, S. (2023). Effects of artificial integration and big data analysis on economic viability of solar microgrids: Mediating role of cost benefit analysis. *Operational Research in Engineering Sciences: Theory and Applications* 6(3), 360–379.
- Sudirjo, F., Palembang, S. P., Desembrianita, E., Ode, H., & Radnan, Y. (2024). Study of the effect of cultural integration, marketing innovation, and brand positioning on brand awareness in Indonesia. *West Science Journal Economic and Entrepreneurship*, 2(02), 136–144. <https://doi.org/10.58812/wsjee.v2i02.880>
- Wu, J., Tuo, Y., Bai, C., & Lin, Z. (2025). Curating wellness: Exploring healing experiences in digitally transformed museums. *Tourism Management*, 111, 105207. <https://doi.org/10.1016/j.tourman.2025.105207>
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509–533. [https://doi.org/10.1002/\(SICI\)1097-0266\(199708\)18:7%3C509::AID-SMJ882%3E3.0.CO;2-Z](https://doi.org/10.1002/(SICI)1097-0266(199708)18:7%3C509::AID-SMJ882%3E3.0.CO;2-Z)
- Teece, D. J. (2017). Business models and dynamic capabilities. *Long Range Planning*, 51(1), 40–49. <https://doi.org/10.1016/j.lrp.2017.06.007>
- Yen, N. T. H., Quynh, N. T. T., Dinh, T. D., Mai, T. T. H., Duyen, N. T. H., Hong, P. N., & Duc, B. M. (2024). The Impact of Destination Quality and Image on Tourists' Loyalty. *Journal of Law and Sustainable Development*, 12(1), e2728. <https://doi.org/10.55908/sdgs.v12i1.2728>
- Yu, J., & Wang, H. (2025). When responsibility fails: understanding customer responses to corporate digital responsibility in the hospitality and tourism industry. *Current Issues in Tourism*, 1–19. <https://doi.org/10.1080/13683500.2025.257143>