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The Impact of Smart Tourism Infrastructure and Smart Tourism Governance on Destination Competitiveness with Emphasis on the Mediating Role of Smart Tourism Innovation

Sheyda. Heydari[1], Hamed. Bakhshi[2*], Hamid. Zargham Borujeni[3], Seyed Reza. Kamel Tabbakh[4]

[1] PhD Student in Tourism Management, Jahad Daneshgahi Tourism Research Institute, Mashhad, Iran
[2] Associate Professor, Department of Tourism Sociology, Jahad Daneshgahi Tourism Research Institute, Mashhad, Iran
[3] Associate Professor, Department of Tourism Management, Faculty of Management and Accounting, Allameh Tabatabaei University, Tehran, Iran
[4] Department of Computer Engineering, Ma.C., Islamic Azad University, Mashhad, Iran

*** Corresponding author email address**: h.bakhshi@acecr.ac.ir

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A B S T R A C T

Objective: The objective of this study is to examine the effects of smart tourism infrastructure and smart tourism governance on destination competitiveness, with an emphasis on the mediating role of smart tourism innovation.

Methods and Materials: This study adopts an applied research approach and employs a descriptive–survey design. The statistical population consists of managers, experts, and employees working in tourism companies in the city of Mashhad. A total of 351 respondents were selected using a non-probability convenience sampling method. Data were collected through a standardized questionnaire designed to measure smart tourism infrastructure, smart tourism governance, smart tourism innovation, and destination competitiveness. To analyze the data and test the research hypotheses, structural equation modeling based on the partial least squares approach (PLS-SEM) was used. Reliability and validity of the measurement model were assessed through Cronbach's alpha, composite reliability, average variance extracted, and discriminant validity tests, followed by evaluation of the structural model using path coefficients, coefficients of determination, predictive relevance, and goodness-of-fit indices.

Findings: The results indicate that smart tourism infrastructure has a positive and significant effect on smart tourism innovation and destination competitiveness. Smart tourism governance also shows a positive and significant effect on both smart tourism innovation and destination competitiveness. In addition, smart tourism innovation has a positive and significant effect on destination competitiveness. The mediation analysis confirms that smart tourism innovation plays a significant mediating role in the relationships between smart tourism infrastructure and destination competitiveness, as well as between smart tourism governance and destination competitiveness, indicating that part of the impact of

infrastructure and governance on competitiveness is transmitted through innovation.

Conclusion: The findings demonstrate that destination competitiveness in smart tourism contexts is strengthened through the combined effects of smart infrastructure, effective governance, and innovation, highlighting the central role of smart tourism innovation as a strategic mechanism linking technological and institutional capacities to competitive outcomes.

Keywords: *smart tourism; smart tourism infrastructure; smart tourism governance; smart tourism innovation; destination competitiveness*

1 Introduction

The rapid advancement of digital technologies has fundamentally transformed the structure, management, and competitiveness of tourism destinations worldwide. In recent years, the concept of smart tourism destinations has emerged as a strategic response to increasing competition, changing tourist expectations, and the growing complexity of destination management in the digital era. Smart tourism destinations are characterized by the intensive use of information and communication technologies (ICTs), data-driven decision-making, integrated infrastructure systems, and innovative governance models aimed at enhancing tourist experiences, operational efficiency, sustainability, and long-term competitiveness (Jovicic, 2019). As tourism markets become more globalized and technologically mediated, destination competitiveness is no longer determined solely by natural attractions or traditional services, but increasingly by the capacity to leverage smart infrastructure, governance mechanisms, and innovation ecosystems.

One of the central pillars of smart tourism development is smart tourism infrastructure, which encompasses digital platforms, intelligent transportation systems, sensor networks, big data analytics, and integrated service systems that enable seamless interactions among tourists, service providers, and destination managers. Smart infrastructure provides the technological backbone that supports real-time information exchange, personalization of services, and efficient resource management. Recent studies highlight that destinations with advanced smart infrastructure are better positioned to improve service quality, enhance tourist satisfaction, and respond adaptively to dynamic market conditions (Bentley & Jun, 2024; Sun et al., 2025). In this context, infrastructure is not merely a technical component but a strategic asset that underpins innovation and competitiveness in tourism destinations.

Alongside infrastructure, smart tourism governance has gained increasing scholarly and practical attention as a critical determinant of successful smart destination development. Smart governance refers to collaborative, transparent, and technology-enabled governance frameworks that integrate multiple stakeholders, including public authorities, private firms, residents, and tourists, into decision-making processes. Through digital governance tools, destinations can improve coordination, policy coherence, accountability, and responsiveness to stakeholders' needs (Errichiello & Micera, 2021; Ivars-Baidal et al., 2024). Effective smart governance enables destinations to align technological investments with strategic objectives, ensuring that smart initiatives contribute meaningfully to sustainable development and competitive advantage.

The relationship between governance and destination performance has been further emphasized in recent studies examining digital and smart governance practices. Digital governance mechanisms facilitate data-driven policymaking, enhance institutional capacity, and support adaptive management in tourism systems. Empirical evidence suggests that destinations adopting smart governance approaches are more resilient to external shocks and better able to sustain tourism development in volatile environments (Abdelmalak, 2024; Wang et al., 2025). These findings underscore the importance of governance structures in translating technological capabilities into tangible outcomes for destination competitiveness.

Innovation represents another core dimension of smart tourism destinations, acting as a bridge between infrastructure, governance, and competitive performance. Smart tourism innovation involves the development and implementation of new digital services, business models, experiences, and organizational processes enabled by advanced technologies. Innovation in smart tourism is not limited to technological novelty but also includes institutional, managerial, and experiential innovations that reshape value creation within destinations (Xu et al., 2025). By fostering innovation, destinations can differentiate themselves, enhance visitor engagement, and create memorable tourism experiences that strengthen destination image and loyalty.

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The growing body of literature emphasizes the role of smart tourism technologies in shaping tourist experiences and behavioral outcomes. Smart applications, personalized services, and interactive platforms contribute to higher levels of tourist satisfaction, engagement, and emotional connection with destinations (Afzal et al., 2024; Elshaer & Marzouk, 2024). These experiential outcomes, in turn, reinforce destination competitiveness by encouraging repeat visitation and positive word-of-mouth. As such, smart tourism innovation serves as a critical mechanism through which technological and governance inputs are transformed into market-level advantages.

Destination competitiveness itself is a multidimensional construct that reflects a destination's ability to attract and satisfy tourists while maintaining sustainable economic, social, and environmental performance over time. Contemporary models of destination competitiveness increasingly integrate technological readiness, innovation capacity, governance quality, and stakeholder collaboration as key determinants (Mior Shariffuddin et al., 2023). In the smart tourism context, competitiveness is closely linked to a destination's ability to orchestrate complex technological systems, foster innovation, and govern tourism development effectively.

Despite the growing recognition of smart tourism infrastructure, governance, and innovation as drivers of destination competitiveness, the interrelationships among these constructs remain insufficiently explored, particularly in emerging and developing tourism contexts. While prior studies have examined the direct effects of smart technologies on tourist satisfaction and loyalty (Tulung et al., 2025), or the role of governance in smart destination management (Errichiello & Micera, 2021; Naveen Kumar et al., 2025), there is limited empirical research investigating how smart tourism innovation mediates the relationships between infrastructure, governance, and destination competitiveness. Understanding these mediating mechanisms is essential for designing integrated smart tourism strategies that maximize the returns on technological and institutional investments.

Recent research highlights that infrastructure alone is insufficient to guarantee competitive outcomes unless it is embedded within supportive governance frameworks and innovation-oriented ecosystems. For instance, studies focusing on smart tourism development in different regional contexts emphasize the need for coordinated infrastructure planning, stakeholder engagement, and innovation policies to achieve sustainable competitiveness (Bourdin et al., 2023; Nourmandipour et al., 2025). These findings suggest that smart tourism innovation may play a pivotal mediating role by enabling destinations to translate infrastructural and governance capacities into competitive performance.

Moreover, the increasing emphasis on digitalization and smart destination strategies in national and regional tourism policies further underscores the relevance of examining these relationships empirically. Comparative and large-scale studies demonstrate that destinations with higher levels of digital innovation and integrated governance frameworks exhibit stronger tourism growth trajectories and resilience (Sun et al., 2025; Wang et al., 2025). However, contextual differences in institutional capacity, technological readiness, and stakeholder collaboration necessitate localized empirical investigations to inform policy and managerial practice.

In this regard, examining smart tourism destinations within specific urban and regional contexts can provide valuable insights into how infrastructure, governance, and innovation interact to shape destination competitiveness. By focusing on these interactions, researchers can contribute to a more nuanced understanding of smart tourism development pathways and offer evidence-based recommendations for destination managers and policymakers seeking to enhance competitive positioning in the digital era (Ivars-Baidal et al., 2024; Xu et al., 2025).

In summary, the literature suggests that smart tourism infrastructure and smart tourism governance are foundational elements of smart destinations, while smart tourism innovation functions as a dynamic mechanism that links these elements to destination competitiveness. Nevertheless, empirical research that simultaneously examines these constructs within an integrated analytical framework remains limited. Addressing this gap is critical for advancing theoretical understanding and supporting the effective implementation of smart tourism strategies in practice. Therefore, the aim of this study is to examine the effect of smart tourism infrastructure and smart tourism governance on destination competitiveness, with an emphasis on the mediating role of smart tourism innovation.

2 Methods and Materials

In terms of purpose, this study is applied, and in terms of research execution, it adopts a descriptive–survey design. The statistical population consists of managers, experts, and employees working in tourism companies in the city of Mashhad. A sample of 351 respondents was selected using a convenience (non-probability) sampling method, and

questionnaires were distributed among them. The data collection instrument was a standardized questionnaire. In this study, structural equation modeling using the partial least squares method and PLS software was employed to test the hypotheses and assess the validity of the model. PLS is a variance-based approach that, compared with covariance-based structural equation modeling techniques such as LISREL and AMOS, requires fewer assumptions. Its main advantage is that, relative to LISREL-based modeling, it requires a smaller sample size.

3 Findings and Results

Modeling in PLS is conducted in two stages. In the first stage, the measurement model is evaluated through reliability and validity analyses. In the second stage, the structural model is analyzed by estimating the paths between variables and determining model fit indices.

Testing the measurement model is related to examining the validity and reliability of the measurement instruments.

To assess convergent validity, the criteria of AVE (Average Variance Extracted) and CR (Composite Reliability) were used, and the results of these criteria for the four research variables are presented in Table 1. Composite reliability values above 0.70 and average variance extracted values above 0.50 are the two necessary conditions for convergent validity and construct correlation. As shown in Table 1, all composite reliability values are greater than 0.70 and all AVE values exceed 0.50, indicating that the convergent validity of the present questionnaire is at an acceptable level.

To examine the reliability of the questionnaire, Cronbach's alpha method was also used. If the value of Cronbach's alpha exceeds 0.70, the reliability of the items is considered acceptable. To calculate questionnaire reliability, a preliminary sample of 30 questionnaires was pretested. Using the data obtained from these questionnaires and SPSS statistical software, reliability was calculated for each independent and dependent variable, as shown in the table below. As can be observed, all questionnaire items have reliability values above 0.70, indicating a high degree of reliability and trustworthiness of the questionnaire. Based on the results presented in Table 1, the reliability of the questionnaire is confirmed. In addition to Cronbach's alpha, indicator reliability was also used to assess questionnaire reliability. Indicator reliability is calculated by measuring factor loadings through the correlation between the indicators of a construct and that construct. If this value is equal to or greater than 0.30, it indicates acceptable reliability for the measurement model. However, if the factor loading between an item and its related dimension is less than 0.30, that item can be removed from subsequent analyses. As shown in Figures 1 and 2, all factor loading values between constructs and items are greater than 0.30, indicating strong correlations.

Table 1

Assessment of Questionnaire Validity and Reliability

Variables	AVE	CR	Cronbach's Alpha
Smart Tourism Governance	0.569	0.887	0.845
Destination Competitiveness	0.566	0.902	0.889
Smart Tourism Infrastructure	0.578	0.910	0.900
Smart Tourism Innovation	0.583	0.836	0.817

Discriminant validity is the third criterion for assessing the fit of measurement models in the PLS method. Discriminant validity refers to the low correlation of the indicators of one latent variable with other latent variables. According to the method proposed by Fornell and Larcker (1981), discriminant validity is acceptable when the square root of AVE for each construct is greater than the shared variance between that construct and other constructs in the model. Accordingly, acceptable discriminant validity of a measurement model indicates that a construct interacts more strongly with its own indicators than with other constructs. In the PLS method, this is assessed using a matrix in which the cells contain correlation coefficients between constructs, and the main diagonal contains the square roots of the AVE values for each construct. The discriminant validity matrix is presented in Table 2.

As shown in Table 2, the square root of AVE reported for each construct (main diagonal) is greater than its correlations with other constructs in the model, indicating acceptable discriminant validity for the measurement models. After ensuring the adequacy of the measurement models through reliability testing, convergent validity, and discriminant validity, the results of the outer model can be reported.

Table 2

Discriminant Validity Assessment Matrix

	Smart Tourism Governance	Destination Competitiveness	Smart Tourism Infrastructure	Smart Tourism Innovation
Smart Tourism Governance	0.754			
Destination Competitiveness	0.812	0.752		
Smart Tourism Infrastructure	0.787	0.815	0.760	
Smart Tourism Innovation	0.828	0.781	0.760	0.764

Table 3

Obtained Goodness-of-Fit Indices

Dimensions	R^2 Index	Q^2 Index	GOF
Smart Tourism Governance	—	0.44	0.736
Destination Competitiveness	0.753	0.39	
Smart Tourism Infrastructure	—	0.42	
Smart Tourism Innovation	0.716	0.40	

The coefficient of determination indicates the effect of exogenous variables on endogenous variables. This criterion reflects the model's ability to reduce errors in the measurement model and increase variance between constructs and indicators, and it is controlled exclusively in PLS. The values of 0.10, 0.22, and 0.57 are considered weak, moderate, and strong levels of relationship intensity, respectively. Based on the R^2 values reported in Table 3, the coefficients of determination for the endogenous variables are at an acceptable level.

The quality of the structural model is assessed using the predictive relevance index (Q^2). The purpose of this index is to evaluate the predictive capability of the structural model using the blindfolding procedure. According to this criterion, the model should be able to predict the reflective indicators of endogenous latent variables. In terms of predictive power intensity, the values of 0.02, 0.15, and 0.35 are considered weak, moderate, and strong, respectively. Given the values obtained for all variables in the above table, the predictive power is acceptable.

The goodness-of-fit criterion (GOF) pertains to the overall structural equation model and allows for the assessment of the overall fit after examining both the measurement and structural components of the research model. The values of 0.01, 0.25, and 0.36 are considered weak, moderate, and strong, respectively. Based on the calculated model, a strong level of fit was achieved.

Table 4

Examination of Research Hypotheses Results

Hypotheses	Standardized Path Coefficient	t-value	Significance	Hypothesis Status
Smart tourism infrastructure has a positive and significant effect on smart tourism innovation.	0.284	3.66	0.016	Supported
Smart tourism governance has a positive and significant effect on smart tourism innovation.	0.604	3.42	0.001	Supported
Smart tourism infrastructure has a positive and significant effect on destination competitiveness.	0.404	2.84	0.005	Supported
Smart tourism governance has a positive and significant effect on destination competitiveness.	0.324	2.41	0.021	Supported
Smart tourism innovation has a positive and significant effect on destination competitiveness.	0.206	4.36	0.000	Supported
Smart tourism innovation mediates the relationship between smart tourism infrastructure and destination competitiveness.	0.314	3.852	0.005	Supported
Smart tourism innovation mediates the relationship between smart tourism governance and destination competitiveness.	0.271	2.69	0.037	Supported

Figure 1

Model with Beta Values

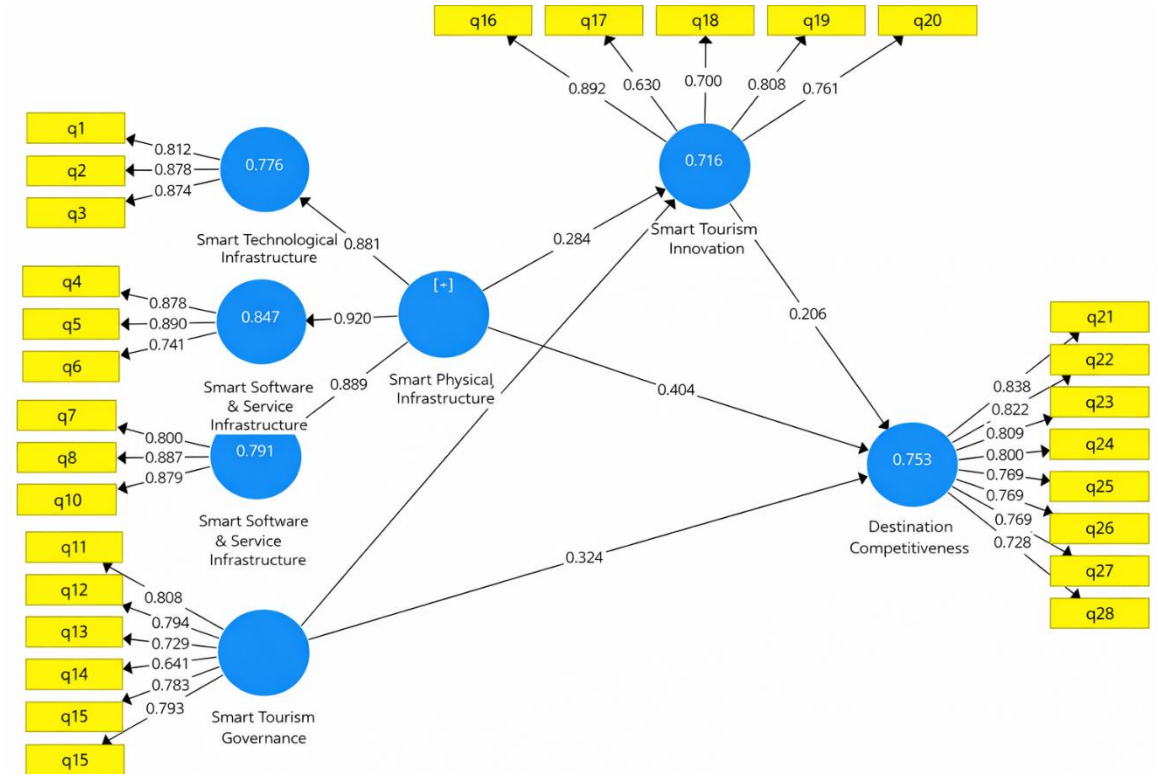
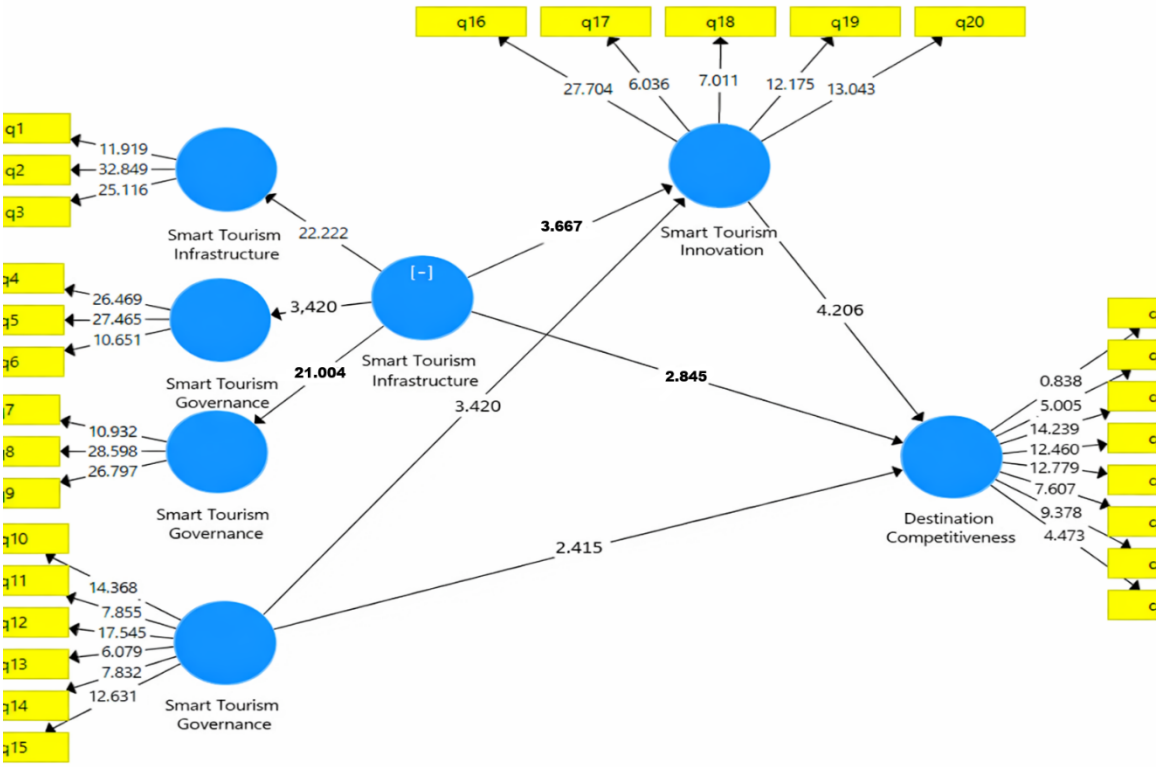


Figure 2

Model with T-Values



The first hypothesis proposed that smart tourism infrastructure has a positive and significant effect on smart tourism innovation. The results of the structural model analysis support this hypothesis, as the standardized path coefficient between smart tourism infrastructure and smart tourism innovation is positive ($\beta = 0.284$) and statistically significant ($t = 3.66$, $p = 0.016$). This finding indicates that the development and enhancement of technological, digital, and information infrastructures in tourism destinations contribute directly to the stimulation of innovative smart tourism practices and solutions, highlighting the foundational role of infrastructure in enabling innovation-oriented activities.

The second hypothesis examined whether smart tourism governance has a positive and significant effect on smart tourism innovation. The findings confirm this relationship, with a relatively strong standardized path coefficient ($\beta = 0.604$) and a statistically significant t-value ($t = 3.42$, $p = 0.001$). This result suggests that effective smart governance mechanisms—such as data-driven decision-making, stakeholder coordination, transparency, and adaptive policy frameworks—play a critical role in fostering smart tourism innovation by creating an enabling institutional and regulatory environment.

The third hypothesis stated that smart tourism infrastructure has a positive and significant effect on destination competitiveness. The empirical results support this hypothesis, showing a positive standardized path coefficient ($\beta = 0.404$) that is statistically significant ($t = 2.84$, $p = 0.005$). This outcome implies that investments in smart infrastructure, including digital platforms, intelligent transportation systems, and information and communication technologies, enhance a destination's ability to compete by improving service quality, efficiency, accessibility, and the overall tourist experience.

The fourth hypothesis assessed the impact of smart tourism governance on destination competitiveness. The analysis demonstrates a positive and significant relationship between these variables ($\beta = 0.324$, $t = 2.41$, $p = 0.021$), thereby supporting the hypothesis. This finding indicates that smart governance practices—characterized by strategic planning, inter-organizational collaboration, and the effective use of data and technology—contribute to strengthening destination competitiveness by improving policy coherence, resource allocation, and long-term strategic positioning.

The fifth hypothesis proposed that smart tourism innovation has a positive and significant effect on destination competitiveness. The results confirm this hypothesis, as the standardized path coefficient is positive ($\beta = 0.206$) and statistically significant ($t = 4.36$, $p < 0.001$). This evidence suggests that the introduction of innovative smart tourism products, services, and processes enhances a destination's competitive advantage by increasing differentiation, responsiveness to tourist needs, and the capacity to deliver value-added experiences.

The sixth hypothesis examined whether smart tourism innovation mediates the relationship between smart tourism infrastructure and destination competitiveness. The mediation analysis indicates a significant indirect effect ($\beta = 0.314$, $t = 3.852$, $p = 0.005$), confirming the mediating role of smart tourism innovation. This result implies that smart tourism infrastructure not only has a direct impact on destination competitiveness but also exerts an indirect influence by facilitating innovation, which in turn strengthens competitive performance.

The seventh hypothesis investigated whether smart tourism innovation mediates the relationship between smart tourism governance and destination competitiveness. The findings support this hypothesis, as the indirect effect through smart tourism innovation is positive and statistically significant ($\beta = 0.271$, $t = 2.69$, $p = 0.037$). This indicates that smart governance enhances destination competitiveness partly by promoting an innovation-friendly environment, underscoring the pivotal role of smart tourism innovation as a key mechanism through which governance practices translate into competitive outcomes.

4 Discussion

The results of the present study provide robust empirical evidence regarding the relationships among smart tourism infrastructure, smart tourism governance, smart tourism innovation, and destination competitiveness. The findings demonstrate that smart tourism infrastructure has a positive and significant effect on smart tourism innovation, indicating that destinations equipped with advanced technological, digital, and service-oriented infrastructures are more capable of generating and sustaining innovative tourism solutions. This result aligns with the growing body of research emphasizing the foundational role of infrastructure in enabling smart destination development, as digital platforms, data systems, and intelligent services create the necessary conditions for experimentation, service redesign, and innovation diffusion (Bentley & Jun, 2024; Sun et al., 2025). From this perspective, infrastructure is not

merely a passive technical asset, but an active driver of innovation that enhances a destination's capacity to respond to changing tourist demands and competitive pressures.

In addition, the study reveals a strong and significant relationship between smart tourism governance and smart tourism innovation. This finding suggests that governance frameworks characterized by collaboration, transparency, and digital integration play a critical role in fostering innovation within tourism destinations. Smart governance mechanisms facilitate coordination among diverse stakeholders, align strategic objectives, and reduce institutional barriers to innovation. This result is consistent with prior studies highlighting the importance of collaborative governance networks and digital governance tools in supporting innovation-oriented tourism ecosystems (Errichiello & Micera, 2021; Ivars-Baidal et al., 2024). Moreover, recent evidence indicates that destinations adopting digitally enabled governance structures are better positioned to mobilize resources, share knowledge, and accelerate innovation processes (Abdelmalak, 2024; Wang et al., 2025). The present findings reinforce the argument that governance quality is a decisive factor in transforming technological potential into innovative outcomes.

The direct effects of smart tourism infrastructure and smart tourism governance on destination competitiveness were also found to be positive and statistically significant. These results indicate that both technological readiness and governance effectiveness independently contribute to enhancing a destination's competitive position. Smart tourism infrastructure improves competitiveness by increasing operational efficiency, service quality, accessibility, and personalization, thereby strengthening the overall tourist experience. This finding is in line with previous research demonstrating that technologically advanced destinations are more attractive to tourists and better able to differentiate themselves in increasingly competitive markets (Afzal et al., 2024; Tulung et al., 2025). Similarly, the positive impact of smart tourism governance on destination competitiveness underscores the role of effective policy frameworks, stakeholder coordination, and strategic management in shaping long-term competitive advantage. Governance systems that leverage digital tools and participatory approaches enhance decision-making quality and destination resilience, which are critical components of sustained competitiveness (Abdelmalak, 2024; Errichiello & Micera, 2021).

A particularly important contribution of this study lies in confirming the positive and significant effect of smart tourism innovation on destination competitiveness. This result highlights innovation as a central mechanism through which destinations create value, differentiate offerings, and strengthen their market position. Smart tourism innovation enables destinations to develop novel experiences, integrate digital services, and enhance tourist engagement, all of which contribute to improved destination image and loyalty. This finding is consistent with prior studies emphasizing that innovation-driven destinations are more successful in creating memorable tourism experiences and sustaining competitive performance (Elshaer & Marzouk, 2024; Xu et al., 2025). By demonstrating the direct link between innovation and competitiveness, the study reinforces the strategic importance of fostering innovation capabilities within smart tourism destinations.

Beyond direct effects, the mediation analysis provides deeper insights into the structural relationships among the study variables. The results show that smart tourism innovation plays a significant mediating role in the relationship between smart tourism infrastructure and destination competitiveness. This finding suggests that infrastructure investments alone are insufficient to fully enhance competitiveness unless they are effectively translated into innovative tourism products, services, and processes. In other words, smart infrastructure contributes to competitiveness primarily by enabling innovation, which then drives market-level outcomes. This interpretation is consistent with earlier research indicating that the competitive benefits of digital and technological investments depend heavily on an organization's or destination's innovation capacity (Bourdin et al., 2023; Nourmandipour et al., 2025). The mediating role of innovation underscores the need for destinations to adopt an integrative approach that connects infrastructure development with innovation strategies.

Similarly, the study confirms that smart tourism innovation mediates the relationship between smart tourism governance and destination competitiveness. This result implies that governance structures influence competitiveness not only directly, but also indirectly by shaping the innovation environment within destinations. Smart governance fosters innovation by promoting collaboration, reducing regulatory constraints, and encouraging knowledge sharing among stakeholders. These conditions, in turn, facilitate the development and diffusion of innovative tourism solutions that enhance competitiveness. This finding resonates with recent governance-focused studies suggesting that the effectiveness

of smart governance is largely determined by its ability to stimulate innovation and adaptive capacity in tourism systems (Naveen Kumar et al., 2025; Wang et al., 2025). The mediation effect highlights innovation as a key transmission mechanism linking governance quality to competitive outcomes.

Taken together, the findings of this study contribute to the smart tourism literature by empirically validating an integrated model that connects infrastructure, governance, innovation, and destination competitiveness. The results support the theoretical argument that smart tourism destinations function as complex socio-technical systems in which technological, institutional, and innovative components are deeply interdependent (Jovicic, 2019). Rather than operating in isolation, smart tourism infrastructure and governance interact through innovation processes to shape competitive performance. This integrated perspective advances existing research by moving beyond fragmented analyses of individual factors and offering a more holistic understanding of smart destination development.

5 Conclusion

From a contextual standpoint, the findings are particularly relevant for destinations seeking to enhance competitiveness in an increasingly digital and experience-driven tourism market. The evidence suggests that policymakers and destination managers should prioritize not only the deployment of smart technologies, but also the establishment of governance frameworks and innovation ecosystems that maximize the strategic value of these technologies. This conclusion is consistent with recent comparative studies indicating that destinations with integrated smart strategies exhibit stronger tourism growth and resilience (Sun et al., 2025; Xu et al., 2025). By empirically demonstrating these relationships, the study provides a solid foundation for evidence-based decision-making in smart tourism development.

Despite the valuable insights generated by this study, several limitations should be acknowledged. First, the research relies on cross-sectional data, which limits the ability to capture dynamic changes and causal relationships over time. Second, the use of a single urban context may restrict the generalizability of the findings to other destinations with different institutional, cultural, or technological conditions. Third, the study focuses on selected dimensions of smart tourism infrastructure and governance, while other potentially influential factors, such as social capital or environmental sustainability, were not explicitly examined.

Future research could address these limitations by adopting longitudinal research designs to explore how the relationships among infrastructure, governance, innovation, and competitiveness evolve over time. Comparative studies across multiple destinations or countries would also enhance the generalizability of findings and allow for the examination of contextual differences. In addition, future studies could expand the conceptual model by incorporating additional variables, such as sustainability performance, resident satisfaction, or data governance quality, to provide a more comprehensive understanding of smart tourism destination dynamics.

From a practical perspective, the findings suggest that destination managers and policymakers should adopt an integrated approach to smart tourism development. Investments in smart infrastructure should be accompanied by initiatives that strengthen governance capacity and foster innovation-oriented cultures. Encouraging collaboration among stakeholders, supporting experimentation with new digital services, and aligning smart tourism strategies with long-term competitiveness goals can significantly enhance destination performance. By focusing on innovation as a strategic bridge between infrastructure, governance, and competitiveness, destinations can better position themselves for sustainable success in the digital tourism era.

Authors' Contributions

All authors have contributed significantly to the research process and the development of the manuscript.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

In this research, ethical standards including obtaining informed consent, ensuring privacy and confidentiality were observed.

References

Abdelmalak, F. (2024). Smart tourism destinations: Governance and resilience: The use of ICTs in destination governance and its impact on resilience. *Journal of Smart Tourism*, *4*(2), 35-45. https://doi.org/10.52255/smarttourism.2024.4.2.5

Afzal, I., Majid, M. B., Tariq, M. I., & Nasir, A. (2024). Investigating the impact of smart tourism technologies on tourist satisfaction, engagement & image and with the mediation of memorable tourist experience. *Pakistan Journal of Humanities and Social Sciences*, *12*(1), 164-177. https://doi.org/10.52131/pjhss.2024.v12i1.1942

Bentley, L., & Jun, Y. (2024). Smart Tourism Infrastructure. *International Journal of Environmental Research*, *3*(2), 17-25. https://scholar.google.com/citations?user=l1R8GR0AAAAJ&hl=en

Bourdin, S., Jean-Pierre, P., & Perrain, D. (2023). European smart specialisation strategies (RIS3): catalysts for tourism innovations? *Eastern Journal of European Studies*, *14*(0), 0-0. https://doi.org/10.47743/ejes-2023-SI02

Elshaer, A. M., & Marzouk, A. M. (2024). Memorable tourist experiences: the role of smart tourism technologies and hotel innovations. *Tourism Recreation Research*, *49*(3), 445-457. https://doi.org/10.1080/02508281.2022.2027203

Errichiello, L., & Micera, R. (2021). Smart tourism destinations governance: A collaborative network approach. *Journal of Destination Marketing & Management*, *20*(0), 0-0. https://doi.org/10.1016/j.jdmm.2021.100548

Ivars-Baidal, J., Casado-Díaz, A. B., Navarro-Ruiz, S., & Fuster-Uguet, M. (2024). Smart tourism city governance: exploring the impact on stakeholder networks. *International Journal of Contemporary Hospitality Management*, *36*(2), 582-601. https://doi.org/10.1108/IJCHM-03-2022-0322

Jovicic, D. Z. (2019). From the traditional understanding of tourism destination to the smart tourism destination. *Current Issues in Tourism*, *22*(3), 276-282. https://doi.org/10.1080/13683500.2017.1313203

Mior Shariffuddin, N. S., Azinuddin, M., Hanafiah, M. H., & Wan Mohd Zain, W. M. A. (2023). A comprehensive review on tourism destination competitiveness (TDC) literature. *Competitiveness Review: An International Business Journal*, *33*(4), 787-819. https://doi.org/10.1108/CR-04-2021-0054

Naveen Kumar, R., Janani, M., Pavithra, R., & John William, A. (2025). The role of TIAS in shaping smart tourism: governance perspectives on choosing intelligent destinations. *Business Analyst Journal*, *0*(0), 0-0. https://doi.org/10.1108/BAJ-02-2024-0009

Nourmandipour, V., Faraji, A., & Esmaeili Mahyari, M. (2025). Identifying and Analyzing the Future Studies of Infrastructure in Achieving Smart Tourism Destinations in Iran. *Urban Economics and Planning*, *6*(1), 128-143. https://doi.org/10.22034/uep.2025.506741.1599

Sun, D., Zhou, Y., Ali, Q., & Khan, M. T. I. (2025). The role of digitalization, infrastructure, and economic stability in tourism growth: A pathway towards smart tourism destinations. *Natural Resources Forum*, *49*(2), 1308-1329. https://doi.org/10.1111/1477-8947.12437

Tulung, L. E., Lapian, S. L. J., Lengkong, V. P., & Tielung, M. V. (2025). The role of smart tourism technologies, destination image and memorable tourism experiences as determinants of tourist loyalty. *Revista De Gestão Social E Ambiental*, *19*(4), 1-26. https://doi.org/10.24857/rgsa.v19n4-013

Wang, H. R., Fang, Y., Shao, J. P., & Li, C. (2025). Digital governance driving tourism development: The mediating role of tourism resources and the moderating effect of provincial economic comprehensive competitiveness. *Sustainability*, *17*(9), 3831-3831. https://doi.org/10.3390/su17093831

Xu, J., Shi, P. H., & Chen, X. (2025). Exploring digital innovation in smart tourism destinations: insights from 31 premier tourist cities in digital China. *Tourism Review*, *80*(3), 681-709. https://doi.org/10.1108/TR-07-2023-0468