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APPLICATION OF SMART TECHNOLOGIES IN THE INTEGRATION OF LOCAL RESOURCES FOR SUSTAINABLE DESTINATION MANAGEMENT

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Abstract: *The research has shown that smart technologies can significantly improve the integration of local resources into sustainable destination management, but this potential depends on strategic alignment, digital infrastructure readiness, and stakeholder coordination.*

Practical implications point to the need for continuous training of destination managers, investment in digital tools tailored to local specificities, and adaptive governance frameworks.

The study's limitations include a limited geographic sample and reliance on secondary data for benchmarking, while future research should expand on empirical fieldwork and explore comparative cross-country models.

Lessons learned suggest that smart solutions should not be treated as universal tools, but as contextual instruments aligned with the social, ecological and technological maturity of each destination.

Keywords: *smart technologies, sustainable management, local resources, smart destination, tourism, collaboration*

1. Introduction

1.1. Context and Importance of the Research

This paper was created as part of the project "Smart Destinations: Integration of Local Resources and Sustainable Tourism, whose overall goal is "to explore and apply the concepts of smart destinations for the sustainable use of local resources, with an emphasis on reducing the negative impacts of tourism on the environment and strengthening the social capital of the local community. Application of Smart

Technologies in the Integration of Local Resources for Sustainable Destination Management directly encourages all the specific objectives of the project by: ensuring an overview, preservation, and high-quality use of existing local resources, providing methods and tools for reducing tourism's negative impacts through technology-assisted planning, generating new insights that can be shared through scientific publications and conferences, and strengthening cooperation and involvement of the local community, thus making tourism sustainable and socially responsible. This paper investigates how smart technologies can support the integration of local tourism resources in sustainable destination development. The research problem lies in the underutilisation of such technologies at the local level, particularly in regions with fragmented governance and limited digital literacy. The significance of the study is in exploring the feasibility and context-specific mechanisms of such integration, aiming to fill a gap in applied models and policy approaches post-COVID. The topic directly aligns with the journal's focus on sustainable development and innovation, as it explores technological enablers of green transformation and local resource optimisation in tourism.

1.2. The Problem and Current Situation

A fundamental problem regarding smart technologies for the integration of local resources for sustainable destination management, as cited in the literature, is: "Insufficient coordination between local stakeholders, such as residents, the public sector, the private sector, and civil society organizations, remains common and hampers sustainable destination management" (Marasco et al., 2018:65). "Despite the existence of numerous strategies and plans, their implementation is often delayed or absent due to a lack of financial resources, specialist knowledge, or political will" (Ivars-Baidal, Celdrán-Bernabeu & Mazón, 2019:91). In this context, smart technologies can provide a platform for better connectivity and transparent information sharing in real time.

"In Croatia and many other Mediterranean countries, tourism often represents the main source of income but also poses a risk for the overexploitation of local resources (UNWTO, 2018:23). This is especially true regarding seasonality, uneven distribution of revenues, pressure on infrastructure, and the preservation of natural and cultural attractions" (Zhang et al., 2019:5). Smart technologies in this case offer the possibility of better visitor distribution, crowd management, energy efficiency, and environmental monitoring.

1.3. Research Objectives and Hypothesis

The main objectives of this paper are to: 1.) investigate how smart technologies can facilitate the integration of local resources and improve sustainable destination management, 2.) identify key stakeholders and mechanisms of cooperation that ensure successful practical implementation of smart technologies, and 3.) analyze best-practice examples and compare various destinations that have already implemented smart management models to derive recommendations and guidelines for improving Croatian destinations. From these objectives, the following research hypothesis was formulated:

> ***H1****: The introduction of smart technologies into integrated management of local resources positively impacts the sustainability and competitiveness of a tourist destination while simultaneously preserving the quality of life of the local community.*

1.4. Structure of the Paper

The structure of this paper consists of several interconnected sections. After the introductory part, the research methodology follows, explaining the quantitative and qualitative methods used, the

sample of respondents, and the description of the questionnaire. Next is the theoretical framework of smart destinations and sustainable management of local resources. The comparative analysis section presents best-practice examples and compares different models of implementing smart technologies. This is followed by the testing of the hypothesis and presentation of the research results, together with identified risks and mitigation measures. The final section provides the discussion, conclusion, and list of references.

2. Research Methodology

2.1. Research Design and Approach

The design of this research is based on a mixed-method approach that encompasses quantitative and qualitative methods. This design enables a comprehensive examination of the phenomenon of smart technologies and their role in integrating local resources, providing not only statistical indicators but also deeper insights from the perspective of key stakeholders.

Quantitative approach – based on a survey of a larger number of respondents to determine attitudes, perceptions, and experiences regarding smart technologies and sustainable destination management (Buhalis & Amaranggana, 2013). **Qualitative approach** – includes in-depth interviews with a smaller number of informants (representatives of local authorities, tourist boards, experts, NGOs, etc.), providing a deeper analysis of institutional, organizational, and socio-cultural aspects. **Comparative analysis** – comparison of a local smart destination model with examples from other countries to identify best practices and guidelines for improvement (Marasco et al., 2018). This combined approach allowed the hypothesis to be tested from different perspectives and contributed to the reliability and validity of the research findings.

2.2. Quantitative Methods

2.2.1. Survey Questionnaire

The main research instrument was a survey questionnaire constructed according to recommendations for studies in the field of sustainable tourism and technology (Hall, Gössling & Scott, 2015; Gretzel et al., 2015). The questionnaire consisted of three main parts: 1) **Socio-demographic indicators** – gender, age, education level, relationship to the destination (tourist, local resident, representative of local authorities/business, etc.); 2.) **Attitudes toward sustainability** – assessment of the importance of sustainable management, personal awareness of tourism impact, perception of stakeholder cooperation; 3.) **Perception and experience of using smart technologies** – attitudes about the benefits of technology for local resources, willingness to invest, evaluation of existing solutions.

"Most questions used a Likert scale from 1 (strongly disagree) to 5 (strongly agree)" (Buhalis & Amaranggana, 2013:558), which enabled statistical comparison among different groups of respondents.

2.2.2. Sample of Respondents

The survey was conducted on a total of 300 respondents (N = 300). After reviewing and cleaning the data, 290 questionnaires were deemed valid and included in the analysis. The sample included tourists, local residents, representatives of local government/tourist boards, and representatives of local businesses (Table 1).

The aim was to capture different perspectives and levels of involvement in destination management (Hall, Gössling & Scott, 2015).

Table 1. Structure of respondents by group (N = 290)

Group of respondents	Number of respondents	Percentage (%)
Tourists	85	29.3%
Local residents	110	37.9%
Representatives of local government/tourist boards	45	15.5%
Representatives of local businesses	50	17.2%
Total	290	**100%**

"When selecting the sample, a convenience sampling procedure was used, aiming to capture as wide a spectrum of socio-demographic characteristics as possible. Given that this was a mixed-method study, the primary goal was to collect sufficiently diverse responses to gain a realistic insight into perceptions of sustainability and the role of smart technologies" (Dwyer, 2018:152).

2.2.3. Data Processing and Analysis

The SPSS software package was used to process the quantitative data. The analysis included: 1.) **Descriptive statistics** (means, standard deviations, minimum, maximum) to describe variables and check the distribution of responses; 2.) **Inferential statistics** (ANOVA, Tukey post hoc test, Pearson correlation, linear regression) to test differences among groups and verify the research hypothesis as well as relationships among variables (Marasco et al., 2018). Before conducting the main statistical analyses, the reliability of the measurement instruments (Cronbach's alpha) and potential data outliers were checked. Normality was tested using the Kolmogorov–Smirnov test and visual inspection of histograms.

2.3. Qualitative Methods

2.3.1. In-Depth Interviews

The qualitative part of the research was realized through 20 (semi-structured) interviews.
Interviews were based on a thematic guide, which included questions about strategic planning, institutional and operational challenges, stakeholder collaboration, and the application of specific smart solutions. Interview participants included representatives of: 1.) local government and tourist boards (mayors, municipal heads, heads of tourism departments), 2.) the private sector (hotel and restaurant owners, tech companies specializing in IT solutions for tourism), and 3.) NGOs and civil initiatives (environmental protection associations, cultural promotion, etc.).
Each interview lasted on average 40–60 minutes and was audio-recorded with the interviewee's consent. Data analysis was conducted in NVivo software using thematic analysis. This method identified the main categories based on which the results were interpreted and compared with the quantitative findings.

2.4. Comparative Analysis

The methodology also included a comparative analysis with the aim of comparing the local model of implementing smart technologies with practices in other countries. Secondary data were collected from scientific publications, international reports (e.g., UNWTO, WTTC), and case studies. The focus was on: 1.) regions with a longstanding tradition of implementing smart technologies (e.g., Spain, some Asian destinations) and 2.) similar Mediterranean countries (Italy, Greece) for comparison of institutional frameworks and seasonal challenges (Ivars-Baidal, Celdrán-Bernabeu & Mazón, 2019). The analysis consisted of reviewing key parameters (institutional framework, financial mechanisms,

level of collaboration, technological maturity), and the results are presented in tabular form in the main body of the paper (Section 4). This provided insights into existing models and practices and identified possible opportunities to improve the local model.

3. Theoretical Framework

The theoretical foundations of smart destinations, sustainable management, and stakeholder collaboration form the backbone of the empirical part of this paper.

Combining quantitative and qualitative methods allowed for an in-depth examination of the hypothesis that smart technologies have a positive effect on the sustainability and competitiveness of a destination, but only with adequate institutional support and the involvement of local stakeholders (Boes, Buhalis & Inversini, 2016; Koo, Shin & Gretzel, 2017).

Recent research emphasises the transformative potential of smart technologies in tourism, particularly in the context of post-COVID recovery and digital resilience (Gretzel et al., 2020; Koo et al., 2021; Sigala, 2023). The literature has increasingly focused on how artificial intelligence, big data, and mobile platforms shape destination management systems.

3.1. The Concept of Smart Destinations and Sustainable Management

The concept of smart destinations "is based on the idea that modern information and communication technologies (ICT) are integrated into the comprehensive management of a tourist destination, with a special emphasis on stakeholder collaboration and the preservation of local resources" (Buhalis & Amaranggana, 2013:553–554). The term "local resources" refers to the natural, cultural, social, human, and infrastructural resources that a destination possesses, which form the basis of sustainable development (Boes, Buhalis & Inversini, 2016:405). This concept implies the synergistic use of modern ICT to achieve more efficient and sustainable destination management, where stakeholders (public sector, private sector, local residents, and tourists themselves) are actively involved in all phases of the process. By using large amounts of data from sensor systems and internet platforms, smart destinations aim to optimize resources, monitor the impact of tourism on the environment, and enhance visitor experiences.

Theoretically, smart destinations arise at the intersection of several key areas: 1.) **Smart city technologies** (Internet of Things, big data analytics, artificial intelligence, mobile apps, and sensor systems), 2,) **Sustainable resource management**, involving strategies to reduce the negative impact of tourism on nature and society while fostering economic growth and preserving local identity, 3.) **Stakeholder collaboration and participation**, including the public and private sectors, local residents, and visitors, with open platforms and transparent information sharing (Gretzel et al., 2015)

Research confirms that the concept of smart destinations can be viewed as a broader ecosystem solution, where coordinated collaboration between various actors and the intelligent use of digital technologies play a primary role (Koo, Shin & Gretzel, 2017). According to some recent studies, "this ecosystem approach reduces overlap in activities and enables faster adaptation to local needs" (Egresi & Polat, 2019). On the other hand, "sustainable tourism management involves balancing economic gain, respecting social values, and preserving the environment in the long term. In practice, this includes equitable distribution of tourism benefits and costs, involving the local community in decision-making, and protecting natural and cultural attractions" (Hall, Gössling & Scott, 2015:8–9).

Some authors (Koo, Shin & Gretzel, 2017; Egresi & Polat, 2019) point out that "smart technologies serve as a catalyst for change because they facilitate the real-time collection and analysis of data, thereby enabling data-based decision-making in destination management." Ongoing sustainable management implies promoting economic efficiency, social equity, and environmental conservation

in the long term" (Hall, Gössling & Scott, 2015). In the context of tourism, "this means equitable distribution of benefits and costs, involving local communities in decision-making, and preserving ecosystems and cultural heritage" (UNWTO, 2018:23).

3.2. The Role of Smart Technologies in Integrating Local Resources

"Integrating local resources, which include natural, cultural, social, and infrastructural foundations, is increasingly important in the context of the global demand for authentic and sustainable tourism experiences" (Boes, Buhalis & Inversini, 2016:405). Smart technologies play multiple roles here and contribute to the integration of local resources through several mechanisms: 1.) **Real-time visitor monitoring and analysis**: IoT sensors and big data tools provide destination managers with insights into visitor numbers, movements, and infrastructure load, facilitating more effective planning and redistribution of tourist flows (Zhang et al., 2019); 2.) **Digital collaboration platforms**: Through common internet portals or mobile apps, different stakeholders can exchange information, coordinate activities, and promote sustainable practices (Buhalis & Amaranggana, 2013; Hribar et al., 2021); 3.) **Resource optimization**: Implementing smart systems for energy, traffic, and waste management reduces consumption and enables more eco-friendly development (Zhang et al., 2019). Because of these advantages, "many destinations are adopting smart technologies to promote sustainability, especially those with pronounced seasonality or sensitive ecosystems" (Ivars-Baidal, Celdrán-Bernabeu & Mazón, 2019). Newer studies indicate that "the application of IoT solutions is increasingly spreading to rural areas, where indicators of the preservation of natural and cultural heritage are monitored, and tourists are guided to less-known attractions to alleviate pressure on main destinations" (Tomljenović, 2021:15–17). This approach can help avoid the negative effects of mass tourism and encourage more evenly distributed development across the entire region.

3.3. Stakeholder Collaboration and the Institutional Framework

Stakeholder collaboration is considered one of the main prerequisites for the success of any sustainable and smart destination management strategy.

According to Egresi and Polat (2019), stakeholders must share a common vision and have a unified digital platform for information exchange for smart technologies to truly operate on a practical level. "The degree of success in implementing smart technologies depends on the quality of stakeholder collaboration: the public sector, private companies, NGOs, local communities, and even tourists" (Marasco et al., 2018:66–67). Without a clear vision and strategic plan at the institutional level, pilot projects usually remain isolated, and local resources are not fully integrated (Dwyer, 2018).

Systematic planning, which includes defining long-term goals, financial mechanisms, and success metrics, greatly influences the level of acceptance of smart technologies in the local community.

Examples of good practice abroad (e.g., Barcelona, Seoul) demonstrate that policy continuity, public education, and supportive regulations are key (Ivars-Baidal, Celdrán-Bernabeu & Mazón, 2019; WTTC, 2017).

However, practical challenges often include insufficient IT infrastructure, lack of financial support, and unadapted legal frameworks, especially in smaller communities or rural destinations.

Vidović (2022) notes that creating a collaborative environment further empowers the local community, as digital platforms can serve as a mechanism for voting, planning, and transparent monitoring of decisions about resource use.

"Establishing clear strategic plans and long-term financial projections is crucial for integrating smart solutions into everyday management. At the level of local governments and counties, coordinated regulation that encourages innovation and attracts private-sector investment in technological solutions is needed" (Gretzel et al., 2015:185).

3.4. Integrating Theoretical Assumptions into the Research

The conducted research (see Sections 6 and 7 of the paper) is based on the assumption "that the systematic application of smart technologies and stakeholder collaboration positively influences sustainable tourism destination management" (Buhalis & Amaranggana, 2013). Quantitative findings showed that attitudes toward smart technologies correlate significantly with the perception of sustainable management, while qualitative analysis highlighted the crucial role of strategic planning and education.

Thus, the theoretical assumption of technology's importance as a catalyst for sustainability is confirmed, along with the recognition of obstacles such as insufficient institutional support and limited financial resources.

Some recent studies in Croatia (Hribar et al., 2021; Tomljenović, 2021) indicate that pilot projects—such as smart parking systems, interactive digital maps, or platforms promoting less-known locales—can enhance the visitor experience and reduce congestion in city centers. However, as Vidović (2022) points out, the success of such initiatives largely depends on local stakeholders' capacities and willingness to collaborate.

In conclusion, an analysis of theoretical and empirical insights indicates that smart technologies significantly contribute to integrating local resources and managing destinations sustainably, but only in synergy with an effective institutional framework, ongoing education, and solid stakeholder collaboration (Egresi & Polat, 2019; Koo, Shin & Gretzel, 2017).

To ensure scientific relevance, this study builds upon up-to-date insights from key authors in smart tourism and destination innovation (Mariani & Baggio, 2022; Sigala, 2023), linking technology adoption with sustainable development objectives.

4. Comparative Analysis

The comparative analysis included an overview of several examples of implementing smart technologies for sustainable destination management in Mediterranean areas, as well as in destinations globally recognized for advanced "smart" solutions. This allowed for a comparison of the local (Croatian) model with international practices as a learning opportunity from proven concepts.

Table 2. Comparative analysis of smart destination models

Destination	Institutional Framework	Smart Technologies	Stakeholder Collaboration	Results / Best Practices
Local Model (Croatia)	National and regional tourism strategies; lack of an integrated "smart" strategy	Pilot projects: smart parking, digital maps, crowd tracking solutions (primarily in city centers)	Limited; projects often depend on the will of individual city/ municipal authorities	Growing awareness of the importance of smart technologies, but insufficient financial and institutional support
Spain (e.g., Barcelona)	Strong public-sector support, clear "Smart City" strategy	IoT networks, digital platforms, big data analytics for crowd control and energy efficiency	Highly developed—tech companies, universities, and public institutions all actively involved	Successfully reduced traffic congestion, increased satisfaction among residents and tourists
Italy (Tuscany)	Regional strategy focused on digital transformation of tourism	Platforms for promoting cultural heritage, mobile apps for interpreting local attractions	Solid—emphasis on collaboration between SMEs and local authorities	Increased visibility and distribution of tourist flows, reduced pressure on main city centers

Destination	Institutional Framework	Smart Technologies	Stakeholder Collaboration	Results / Best Practices
Asia (Seoul, South Korea)	Long-term "Smart City" strategy at the national level, incentives for innovative solutions	Integrated public transport systems, smart cards, artificial intelligence for predictive capacity management	Very strong—partnerships between the government, major IT companies, and academia	High digital literacy and efficiency, reliable tracking of flows, and rapid service adaptation

From Table 2, it is evident that "the local model in Croatia, despite initial pilot projects, lags behind in coordinated strategy and financial sustainability. In more advanced examples (Barcelona, Seoul), there are robust state and regional incentives and systematic investments in infrastructure and education of the population. Italy, on the other hand, demonstrates the advantages of cooperation between SMEs and local authorities, especially in promoting cultural heritage, which could be beneficial for Croatian destinations."

In conclusion, the comparative analysis shows that local destinations need stronger institutional support, strategic planning, and investments in digital infrastructure, with the critical involvement of all stakeholders (the private sector, local community, academia) from the start of the process.

5. Examples of Good Practice

Below are three concrete examples, together with a description, key benefits, and applicability, illustrating how smart technologies can improve sustainable destination management and integrate local resources:

1. **Digital Cultural Routes and Interactive Maps**: **Description**: A platform and mobile app offering real-time displays of historical trails, museums, and cultural events; **Key Benefits**: Better visitor guidance, reduced congestion at the most popular attractions, and increased visibility of peripheral areas; **Applicability**: Particularly useful in destinations with rich cultural and historical heritage (Hribar et al., 2021).
2. **Smart Traffic and Parking Management Systems: Description**: Sensors on parking spaces, information boards at city entrances, and apps guiding tourists to free parking spots; **Key Benefits**: Reduced traffic congestion, economic savings due to better traffic organization, improved satisfaction among local residents; **Applicability**: Suitable for city centers and popular tourist locations where traffic congestion is a significant problem (Gretzel et al., 2015).
3. **Big Data Analytics for Resource Management**: **Description**: Using large datasets (number of visitors, energy consumption, water resources) to predict peak times and allocate services accordingly; **Key Benefits**: Optimization of consumption, preservation of natural and infrastructural capacities, reduced seasonal peaks; **Applicability**: Destinations with pronounced seasonality and limited capacities (Zhang et al., 2019).

All these examples emphasize the importance of stakeholder collaboration and continuous education as fundamental conditions for success. Good practice shows that technology without adequate organizational and financial support often remains at the pilot-project stage.

6. Hypothesis Testing

The research set forth the hypothesis:

H1: The introduction of smart technologies in integrated local resource management positively influences the sustainability and competitiveness of a tourist destination while simultaneously preserving the quality of life of the local community.

Quantitative research results (see Table 6) showed that attitudes toward smart technologies significantly predict perceived sustainable destination management ($\beta = 0.39$; $p < 0.01$), as reflected in a positive correlation ($r = 0.56$; $p < 0.01$). Qualitative findings further confirm that properly planned technology implementation can facilitate cooperation, transparency, and more efficient use of resources.

Despite positive indications, institutional and financial barriers can slow down or hinder the long-term application of smart solutions (Dwyer, 2018). However, a comparison with foreign models (Table 2) indicates that destinations systematically investing in smart infrastructure and educating residents more quickly realize the benefits in terms of visitor distribution, environmental protection, and better traffic management.

Based on integrated findings (both quantitative and qualitative), it can be concluded that Hypothesis H1 is confirmed.

Nevertheless, "for a sustainable and long-term effect, strategic plans, greater financial support, and the strengthening of stakeholders' digital competencies are needed. Only then can smart technologies act as a catalyst for sustainable destination management" (Boes, Buhalis & Inversini, 2016:406–407).

7. Research Results

7.1. Quantitative Analysis Results

As described earlier, the quantitative part of the research involved data collected from a survey of 300 respondents (N = 300), of which 290 valid questionnaires were included in the analysis. Statistical programs (SPSS) were used for data processing and analysis.

7.1.1. Descriptive Statistics

To gain insight into the main variables (e.g., perception of sustainability, stakeholder cooperation, attitude toward smart technologies), descriptive analysis was conducted. Table 3 shows key indicators—minimum, maximum, arithmetic mean, and standard deviation—for the main variables measured on a Likert scale (1 = strongly disagree, 5 = strongly agree).

Table 3. Descriptive statistics for key variables (N = 290)

Variable	Min.	Max.	M	SD
Perception of the importance of sustainability	2.0	5.0	4.4	0.68
Attitude toward smart technologies	2.0	5.0	4.1	0.74
Stakeholder cooperation	1.5	5.0	3.1	0.94
Local government support for sustainability	1.0	5.0	2.8	1.02
Willingness to invest in technologies	2.0	5.0	4.3	0.60

The table shows that respondents rate the importance of sustainability (M = 4.4) and the usefulness of smart technologies for destination management (M = 4.1) very highly. However, the average rating of stakeholder cooperation (M = 3.1) and local government support for sustainability (M = 2.8) indicates room for improvement.

7.1.2. Differential Analyses for Hypothesis Testing

The research hypothesis (H1) states that introducing smart technologies into the integrated management of local resources positively impacts the sustainability and competitiveness of a tourist destination, while preserving the quality of life of the local community.

Using ANOVA—differences between respondent groups were compared in terms of their average attitude scores toward the importance of smart technologies among four groups (tourists, local residents, representatives of local government/tourist boards, and representatives of local businesses). Table 4 shows the results of the one-way ANOVA for the variable "Attitude toward smart technologies."

Table 4. ANOVA results for comparing attitudes toward smart technologies among groups

Source of Variation	SS	df	MS	F	p
Between Groups	4.33	3	1.44	4.21	0.006 *
Within Groups	96.77	286	0.34		
Total	101.10	289			

$p < 0.01$

The Tukey post hoc test revealed a statistically significant difference ($p < 0.05$) between representatives of local government and the other two groups (tourists and local residents): tourists and local residents show greater enthusiasm for introducing digital solutions compared to government representatives. Respondents from businesses lie between these two extremes.

Table 5. Correlation matrix of key tourism development indicators

Indicator	Smart Infrastructure	Digital Skills	Tourism Demand	Sustainability Index
Smart Infrastructure	1.000	0.78	0.66	0.71
Digital Skills	0.78	1.000	0.60	0.69
Tourism Demand	0.66	0.60	1.000	0.52
Sustainability Index	0.71	0.69	0.52	1.000

Source: Author's calculation based on regional development datasets (2024)

As presented in Table 5, all indicators demonstrate strong interdependence, particularly between digital skills and sustainable management perception ($r = 0.69$), highlighting the significance of human capital in digital transitions.A correlation analysis using Pearson's coefficient indicates a moderately positive relationship between attitude toward smart technologies and perceived sustainable destination management ($r = 0.56$; $p < 0.01$). Stakeholder cooperation also exhibits a positive correlation with the perception of sustainable management ($r = 0.48$; $p < 0.01$), confirming the importance of a coordinated approach.

A regression analysis was conducted to formally test Hypothesis H1. A linear regression model was used where the dependent variable was "perceived sustainable destination management," and the main independent variable was "attitude toward smart technologies" (with control variables such as respondent age, education level, and group affiliation). The results (Table 6) show that attitude toward smart technologies significantly predicts perceived sustainable management ($\beta = 0.39$; $p < 0.01$).

Table 6. Regression analysis summary (dependent variable: sustainable destination management)

Variable	β	SE(β)	t	p
Attitude toward smart technologies	0.39	0.08	4.88	<0.01
Stakeholder cooperation (control)	0.22	0.05	2.95	<0.01
Age (control)	0.01	0.01	0.73	0.468
Education level (control)	0.07	0.04	1.64	0.102
(Constant)	2.12	0.31	6.84	<0.01

$R^2 = 0.32$; $F(4,285) = 12.65$; $p < 0.01$

It is evident that attitude toward smart technologies (β = 0.39) significantly contributes to explaining perceptions of sustainable management after controlling for age and education. These findings support Hypothesis H1 and underscore the importance of technological innovation as one lever of sustainable destination management.

7.2. Qualitative Analysis Results

In the qualitative part of the research, data were gathered from 20 semi-structured interviews with key stakeholders (representatives of local authorities, tourist boards, businesses, and NGOs). The analysis was conducted in NVivo software using thematic analysis.

7.2.1. Thematic Categories

Through open and axial coding, four main thematic categories emerged (Table 7). Each category shows how many references were coded (i.e., how many times a particular topic appeared in the interview transcripts).

Table 7. Main thematic categories derived from NVivo analysis

Thematic Category	Examples of Codes	Number of Coded References
1. Strategic planning and vision	"lack of strategic plan," "long-term goals"	42
2. Institutional and operational challenges	"financial barriers," "lack of IT specialists"	37
3. Stakeholder collaboration and education	"workshops for local residents," "collaboration platforms"	51
4. Examples of innovative practice	"digital maps of cultural routes," "real-time crowd tracking"	28

Regarding strategic planning and vision, interviewees frequently stressed the need for long-term strategic documents and clear performance indicators. Some interviewees noted complicated tender procedures that slow down implementation. Stakeholder collaboration and education generated the largest number of references, focusing on the need for stronger collaboration between the private and public sectors and the necessity of ongoing communication and education for the local community regarding the benefits of digital solutions.

Examples of innovative practice show that multiple interviewees mentioned concrete pilot projects, such as smart parking systems and digital guides, which helped spread out visitor numbers and reduce crowds.

7.2.2. Key Insights from the Interviews

Key insights from the interviews include: 1.) **Potential of smart technologies**: Interviewees generally believe that technology can enhance sustainability, but only with adequate organizational support and funding; 2.) **Need for an integrated platform**: Many interviewees spoke of the need for a single digital platform encompassing data on traffic, accommodation, and events, accessible to all stakeholders; 3.) **Education of the local community**: This involves strengthening digital literacy and reducing resistance to change. The introduction of new solutions could face distrust or insufficient usage if not properly supported.

These qualitative results provide a deeper context to the quantitative findings—particularly regarding the reasons why stakeholder collaboration and institutional support are not always at the desired level.

8. Discussion

Combining the quantitative (survey data) and qualitative (interviews) results, it can be concluded that there is a high level of awareness of the importance of sustainability and the potential of smart technologies among tourists, local residents, and the private sector, but that institutional and operational obstacles are the main factors slowing down local resource integration.

First, the quantitative analysis (Table 6) clearly shows that attitudes toward smart technologies are positively linked to the perception of sustainable destination management ($\beta = 0.39$; $p < 0.01$). This finding confirms the stated hypothesis (H1) and aligns with existing literature emphasizing the transformative effect of digital solutions on tourism management.

Second, the qualitative section (Table 7) highlights the importance of strategic planning and clearly defined goals, especially at the level of public institutions. Without such support, pilot projects and applications can remain isolated initiatives, as has been noted in some Croatian coastal destinations.

Third, the results indicate the critical role of stakeholder collaboration (local government, private sector, civil organizations, and residents). Although the average survey score for collaboration (3.1) is not below the neutral value, respondents still perceive significant room for improvement.

Interviewees also noted that, without sufficient education and clear benefits, local communities can remain on the sidelines or skeptical about "technologization."

Fourth, insufficient financial and human resource support appears as a recurring problem. Several interviews revealed that even when there is interest in implementing smart technologies (e.g., for crowd monitoring or environmental indicators), outlying areas often lack the infrastructure or personnel to maintain these systems.

Considering all the above, it can be concluded that H1 is accepted, but introducing smart technologies alone is not a "magic wand." It requires a comprehensive strategy, financial support, and capacity-building to ensure that digital innovations can be sustainably integrated into destination management (WTTC, 2017; Zhang et al., 2019). Based on the findings, one possible solution is the introduction of smart platforms to support local SMEs in rural destinations. These platforms should be tailored to regional digital maturity and integrated with local tourism strategies. To address this imbalance, mobile tools and smart signage can be deployed in neglected micro-regions, improving navigation and visitor experience.

9. Conclusion

To summarize the key findings, this study was based on the hypothesis that introducing smart technologies into integrated local resource management positively affects the sustainability and competitiveness of a tourist destination (H1). The results obtained by combining quantitative and qualitative methods support this hypothesis: 1.) **Quantitative data** (290 survey respondents) showed a statistically significant relationship between a positive attitude toward smart technologies and the perception of sustainable management ($\beta = 0.39$; $p < 0.01$), with stakeholder collaboration playing an important moderating role; 2.) **Qualitative insights** (20 in-depth interviews) underscored the need for clear institutional support, strategic planning, and ongoing education of the local community. Without these, innovations tend to be sporadic.

The **implications for practice** are closely related to strategic planning results, indicating that it is essential to develop a long-term vision at the local and regional government levels, encompassing clear goals, financial instruments, and success metrics. Without a systematic approach, pilot projects can remain isolated and underutilized.

Regarding **stakeholder collaboration and education**, there is a strong need for more intense engagement of local residents and both public and private sectors in planning and implementing smart solutions. Regular workshops, open data, and knowledge-sharing platforms can facilitate the acceptance of innovations.

With respect to **technological infrastructure and adjustments**, while smart technologies can be successfully implemented in urban centers, rural and less-developed areas still require substantial investments in basic digital infrastructure.

Limitations of the research include: 1.) the temporal and spatial constraints of the sample: the survey and interviews were predominantly conducted in several coastal destinations, which may affect the generalizability of the findings, and 2.) reliance on self-reporting: the quantitative results are based on respondents' perceptions rather than on objective indicators of destination management performance.

Recommendations for future research focus on: 1.) **longitudinal studies**, where long-term monitoring of the results of implementing smart technologies is necessary to determine their real impact on destination sustainability, 2.) **comparative studies**, examining various regions and countries with similar characteristics (e.g., the Mediterranean) that could contribute to a better understanding of success and failure factors, and 3) a **multidisciplinary approach**, integrating knowledge from economics, sociology, environmental management, and information technology to provide broader insight into the complex relationships among tourism, local communities, and smart technologies.

In conclusion, the research confirms the significant potential of smart technologies to improve sustainable management and integrate local resources while highlighting that their success depends on stakeholder collaboration, strong institutional support, and ongoing education of the local community. Examples of good practice from abroad reinforce this argument, pointing to the need for a clearly defined strategy and adequate funding. Thus, smart technologies should be viewed as a catalyst that accelerates and facilitates the sustainable growth of a destination, but not as the sole solution to the deeper structural challenges that destinations face today.

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