SMART TOURISM AND CULTURAL DESTINATION:

A COMPREHENSIVE ANALYSIS OF TOURIST BEHAVIOR IN THE DESTINATION OF PADOVA- ITALY

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Abstract

This study conducts a thorough analysis of tourist behavior in Padova, Italy, focusing on the synergy between smart tourism and social media. Examining the influence of digital tools on decision-making and satisfaction, the research explores the dynamic interplay between smart tourism practices and the pervasive use of social media in the cultural destination. By emphasizing the intricate relationship between technology and tourism, the findings aim to provide valuable insights into the nuanced connections shaping tourist experiences. The study's outcomes offer practical guidance for optimizing cultural tourism experiences in Padova and hold broader implications for destinations seeking to leverage smart tourism and social media for enhanced visitor engagement and satisfaction.

Key words: Smart Tourism, Social Media, Tourist Behavior, Cultural Destination, Padova, Italy

INTRODUCTION

The advent of the digital revolution in the tourism sector has exerted a significant influence, reshaping the dynamics of both supply and demand and bringing about a transformative impact on tourism and hospitality (Samara et al., 2020). The incorporation of digital technology across every facet of the tourism industry has fundamentally redefined operational practices and the delivery of value to customers, leading to the emergence of the concept of smart tourism. In the context of smart tourism ecosystems, the willingness of tourists to adopt smart practices and actively engage with various stakeholders is pivotal for the success of smart destinations (Femenia Serra et al., 2018). A key factor impacting visitor engagement is the utilization of smart tourism technologies. Such technologies significantly bolster tourist satisfaction and their loyalty to a destination. They create memorable tourism experiences that heighten overall tourist satisfaction (Azis et al., 2020). Additionally, smart tourism technologies alleviate concerns and uncertainties related to trip planning and visits, fostering a sense of novelty (Goo et al., 2022). As Sustacha et al. (2023) highlight, smart destinations employ advanced technology to enhance visitor engagement, creating value for both tourists and destinations. These destinations also encourage interaction and integration, enhancing the experience for visitors and residents, all while pursuing sustainable development (Sustacha et al., 2023). Nonetheless, visitor engagement in smart destinations is influenced by various factors. The quality of the visitor's relationship with the destination is one such element. Research has shown that visitor engagement positively influences environmentally responsible behavior (ERB) (Zhou et al., 2020). Moreover, sensory experiences at destinations have been found to affect visitors' digital engagement with these places. Positive sensory experiences can lead to more favorable attitudes and loyalty toward the destination (Agapito et al., 2017). In the same vein, social media has evolved into a pivotal tool for destination promotion and assisting travelers in their decision-making processes (Hays et al., 2013). Smart tourism destinations are significantly influenced by user-generated content and social media, directly shaping individuals' choices regarding their travel destinations (Agyapong & Yuan, 2022). These platforms provide tourists with information on various aspects like accommodations, restaurants, tours, and attractions, aiding them in making well-informed decisions (Hays et al., 2013). Thus, this study aims to illuminate the role played by these technological facets in shaping tourists' perceptions and influencing their decision-making processes during visits to cultural heritage sites. Emphasizing Padova as a specific cultural destination, the research aims to uncover the unique challenges and opportunities presented by smart technologies in the context of preserving cultural heritage while enhancing the overall tourism experience. Through this comprehensive examination, the study aspires to contribute valuable insights that may inform future strategies, striking a balance between technological advancements and the preservation of cultural heritage within the tourism sector.

I. Litterature Review

1. Smart tourism and tourist behavior

Smart tourism is a multifaceted concept influenced by a range of elements, including the Internet, social media, smart devices, mobile apps, online games, augmented reality, virtual reality, blockchain, and cryptocurrency. The integration of smart technologies like artificial intelligence, cloud computing, the Internet of Things (IoT), and mobile communication has empowered tourism destinations to enhance tourists' experiences (Jeong & Shin, 2019). These smart technologies allow for personalization, context-awareness, and real-time monitoring, which elevate the smart tourism experience (Gretzel et al., 2015). Moreover, they foster better connectivity and information sharing, creating a networked environment for tourism stakeholders (Zvaigzne et al., 2023). Mobile applications represent a fundamental element of smart tourism, offering tourists convenient access to information and services. As a result, they have gained increasing influence within the tourism industry, shaping travel behaviors and enriching tourist experiences (Gupta et al., 2018). According to a survey conducted by Statista, (2023), travel-based mobile apps rank as the seventh most frequently downloaded app category, with nearly 60% of smartphone users regularly using travel apps during trip planning. Therefore, the role of mobile applications in smart tourism has been widely examined. Stakeholders view mobile apps, websites, QR code applications, and physical infrastructure as indispensable components of smart tourism technology (Hamid et al., 2023). In essence, mobile technologies and applications play a pivotal role in smart tourism by providing convenience, time-saving, and cost reduction for consumers (Xu et al., 2019). The widespread adoption of mobile technology has established mobile communication as a significant channel for tourism organizations (Kim et al., 2008). In parallel, tourism consumers are increasingly reliant on mobile apps for sourcing tourism information, prompting numerous studies exploring their usage patterns (Choi & Yoo, 2021). These applications often offer features such as interactive maps, real-time suggestions, personalized itineraries, and mobile payment options (Hamid et al., 2023). However, the development of mobile travel apps is critical for building trust and satisfaction among tourists and enhancing their engagement with tourism destinations (Imtiaz & Suki, 2022). Smartphone applications have been found to influence the information-seeking behavior of foreign independent travelers, with tourism-related apps being particularly favored (Lin et al., 2020).

2. User-generated Content and Social Media

User-generated content plays a significant role in online communication and social media. It allows consumers to express themselves and connect with others (Smith et al., 2012). This user-created content not only serves as a way to socialize but also influences how social interactions occur, and popular social media platforms like YouTube, Facebook, and Twitter are channels where users create content (Smith et al., 2012). The makeup of one's friend network on social media can limit the variety of content they come across. This is called homophily, suggesting that users are more likely to see content that aligns with their beliefs (Bakshy et al., 2015). Therefore, the mix of content on social media can be limited due to the composition of users' friend networks (Bakshy et al., 2015). Furthermore, user-generated content on social media significantly affects how consumers perceive brands (Schivinski & Dąbrowski, 2014). People tend to trust information from others, making user-generated social

media content more influential in shaping consumers' perceptions of brands compared to content created by companies (Schivinski & Dąbrowski, 2014). This underscores the importance of user-generated content in shaping consumer attitudes toward brands. **Claire Beveridge's Hootsuite** report in 2022 highlights successful UGC campaigns, including Coca-Cola's "Share a Coke," Starbucks' "White Cup Contest," and GoPro's "Photo of the Day." These campaigns encouraged customers to share their experiences, personalize products, and engage with the brands, exemplifying the power of user-generated content in fostering brand loyalty and community involvement. Consequently, the growth of social media has made a massive amount of user-generated content easily accessible (Wang et al., 2021). This abundance has drawn interest from researchers and professionals across various fields looking to analyze and understand user-generated content (Brambilla et al., 2021). Examining user-generated content can offer valuable insights into cognitive styles, environmental monitoring, and social media performance (Wang et al., 2021; Brambilla et al., 2021; Ferreira et al., 2021). Likewise, social media platforms have transformed mass communication by allowing users to create, comment on, and share content, including messages from mass media. This has given rise to new forms of mass interpersonal communication, where users blend mass media and interpersonal communication in their interactions (Neubaum & Krämer, 2017). User-generated content on social media platforms has become an integral part of the communication landscape. According to Statista (2023), social media presents a significant global presence with projections indicating that the number of social media users worldwide will reach 4.41 billion by 2025. On average, individuals spend about 2 hours and 25 minutes per day on social media platforms. Furthermore, the growth in global social network users is expected to continue, with estimates suggesting it will reach 4.9 billion by 2027, underlining the enduring and expansive influence of social media in the digital landscape.

Within the same context, social media has become a fundamental tool for promoting destinations and aiding in travelers' decision-making processes (Hays et al., 2013). Smart tourism destinations have been greatly influenced by user-generated content and social media, as these platforms directly impact how people decide on their travel destinations (Agyapong & Yuan, 2022). They offer tourists information about various aspects like accommodations, restaurants, tours, and attractions, helping them make informed choices (Hays et al., 2013). In addition, social media platforms, such as Instagram, play a crucial role in promoting tourism destinations (Silaban et al., 2022). User-generated content and social media also have significant implications for the sustainability and economic prosperity of smart tourism destinations (Del Vecchio et al., 2018). Privacy concerns related to the use of big data by destination and service providers can affect the sustainability of smart tourism (Afolabi et al., 2021). However, the positive effects of user-generated content and social media on smart tourism destinations are undeniable. They enhance the overall travel experiences of tourists and contribute to the well-being of residents (Santos-Júnior et al., 2020). Moreover, the utilization of information and communication technology, combined with the implementation of smart tourism destination management strategies, has a positive and noteworthy impact on the performance of these destinations (Sucipta et al., 2019). Besides, crowdworking and knowledge destinations have been found to encourage innovation and engagement through social media content (Pratiwi et al., 2020). This engagement holds significant potential for the tourism industry. Similarly, crowdworking fosters engagement with digital strategies and individuals who are native to the digital world, leading to the promotion of destinations through social media content (Wardhani et al., 2020).

3. ICT and Tourist Behavior

The influence of technology on tourist behavior is a compelling focus of interest within the tourism industry (Jeong & Shin, 2019). Technology's sway over tourist behavior is profound, and the establishment of a robust and sustainable information technology infrastructure within companies is recognized as a pivotal success factor and driver for the tourism and hospitality sector. When tourists make online bookings for instance, their behavior often leans towards impulsive decisions. This inclination can be fueled by online word-of-mouth or peer reviews which encompass aspects such as hotel ratings, user-friendliness, hotel website functionality, and considerations of security and privacy (Henseler, Müller, & Schuberth, 2018). Furthermore, technology-integrated experiences in tourism possess the capacity to significantly augment tourist satisfaction and encourage repeat visits (Jeong & Shin, 2019). Given the escalating competition in the tourism marketplace, businesses are increasingly delving into the realm of smart technology to furnish personalized experiences. Nevertheless, the comprehension of the role of smart technology in tailoring personalized experiences remains relatively limited (Neuhofer et al., 2015). One area of particular interest pertains to the acceptance of navigation apps and the subsequent ramifications of smart tourism technology on the intention to utilize these applications (Zeng et al., 2022). In the study by Zeng et al. (2022), the investigation revolves around the intention to employ navigation apps and the attendant moderating effects on this intention. By adopting a survey-based approach, data were gleaned from tourists, and subsequent analysis discerned that individuals with less robust spatial cognitive capacity exhibit a heightened reliance on navigation apps for wayfinding and navigation. Hence, this underscores the critical importance of accounting for the technological requirements of diverse user groups, including those with diminished spatial perception, when comprehending tourist behavior (Zeng et al., 2022). Furthermore, the study by Jalilvand and Samiei (2012) underscores the pivotal role of electronic word of mouth (eWOM) in steering tourists' decision-making processes. This influential factor shapes tourists' perceptions, attitudes, and behaviors. Within this context, shared travel experiences on social media platforms emerge as a form of electronic word of mouth (e-WOM) with the potential to wield significant influence over tourists' decision-making processes (Liu et al., 2018). In addition, Berger and Greenspan Weed's (2008) investigation into adventure tourism elucidated how technology functions in shaping tourist identities through two distinct mechanisms; it engenders new identities through novel experiences while simultaneously reinforcing pre-existing ones via self-expression and validation. Importantly, the impact of technology on tourist identities is not uniform, varying depending on individual preferences, motivations, and social contexts. Consequently, it underscores the necessity for a nuanced comprehension of how technology influences tourist identities within the sphere of adventure tourism. Other findings in the same context were in Papadimitriou et al.'s (2013) study which delved into the impact of destination personality and affective image on tourists' behavioral intentions within the domain of domestic urban tourism. This study, grounded in surveys conducted with tourists visiting a domestic urban destination, illuminated the significant influence of destination personality and affective image in shaping the overall image formation of a destination. This, in turn, molds tourists' perceptions and evaluations, subsequently impacting behavioral intentions such as revisitation and the dissemination of positive word-of-mouth (Papadimitriou et al., 2013). Thus, social media platforms offer travelers a platform to share their experiences, concurrently presenting the identities of destinations, which can profoundly influence the perceptions and motivations of others to travel (Ba & Song, 2022). These platforms have emerged as critical sources of travel information, with tourists heavily relying on them to gather information about destinations, accommodations, and activities (Xiang & Gretzel, 2010). The act of tourists sharing their

experiences on social media positively regulates their own tourism experiences, fostering heightened satisfaction and greater expectations for future trips (Ba & Song, 2022). Furthermore, in a study conducted in 2022, the Kasetsart Journal of Social Sciences delved into the role of social media in shaping tourist behavior and experiences within the tourism industry. This study unearthed that social media exerts a substantial influence on tourists' decision-making processes, encompassing destination choice, travel planning, information sharing, and the formation of destination perceptions. Consequently, it underscores the imperative for understanding the patterns of social media usage in the realm of tourism and advocates for destination marketers to leverage these platforms to engage with tourists, promote destinations, and elevate the overall tourism experience. Additionally, Al-Sulaiti's (2022) study explored the impact of technology-enabled facilities within mega shopping malls on tourists' behavior and revisit intentions. Employing the Stimulus-Organism-Response (SOR) theory, the study elucidated the intricate relationship between technology-enabled facilities, destination image, tourists' behavior, and revisit intentions. The findings illuminated that advanced technology and innovative features significantly enhance the shopping experience, subsequently influencing tourists' perceptions and behaviors. This study imparts valuable implications for mall management and marketing strategies, highlighting the pivotal role of technology in molding tourists' perceptions and behaviors. Furthermore, following the stimulus-organism-response (SOR) model, Chen et al. 2022's study ventured into the relationship between tourism experiences, the emotion of "fun," recommendations, and revisit intentions among Chinese outbound tourists. This research, employing structural equation modeling, discerned that memorable tourism experiences wield considerable influence over the emotion of "fun," subsequently shaping tourists' recommendations and their intentions to revisit. The significance of crafting memorable experiences that evoke positive emotions and consequently mold tourists' behavioral intentions is accentuated by these findings. Such insights can be instrumental in the endeavors of destination marketers and managers, as they seek to tailor experiences that resonate with the preferences of Chinese outbound tourists (Chen et al., 2022).

Research hypotheses

- ***Hypothesis 1:*** *Tourists who utilize mobile apps and other digital tools during their visits to cultural heritage sites in Padova will report higher levels of satisfaction and engagement.*
- ***Hypothesis 2:*** *The availability of digital content (e.g., photos, videos, articles) significantly influences tourists' decisions to visit Padova and explore its cultural heritage.*
- ***Hypothesis 3:*** *The quality of the digital features, as perceived by tourists, influences their overall satisfaction with the cultural heritage sites.*
- ***Hypothesis 4:*** *Tourists who share their experiences on social media are more likely to recommend visiting Padova and its cultural heritage sites to friends and family.*

II. Methodology

In this section, we will present the findings from the quantitative analysis of our survey data, which was collected through two types of QR codes distributed at various touchpoints throughout Padova, including key tourist sites such as Palazzo Bo and Centro, as well as tourist information centers, museums, hotels, and other relevant organizations. The survey, conducted in July-Aout 2023, marked the peak months in recent years, with a remarkable 103,245 arrivals in Padova the last July (Osservatorio del Turismo Regionale Federato, 2023). This represented a substantial 26.21% increase compared to July 2022, reflecting the city's growing popularity as a cultural heritage destination and we were able to collect 120 responses.

Table 1: Digitalization and immersive experiences

Variable	Category	n	%
Did the availability of digital content (e.g., photos, videos, articles) about cultural products influence your decision to visit Padova?	Yes, to some extent	66	55
	No, not at all	33	27.5
	Yes, significantly	21	17.5
Before or during your visit, were you already aware of any digital initiatives or innovations implemented at the cultural heritage sites in Padova?	No	58	48.33
	Not sure	44	36.67
	Yes	18	15
While visiting the cultural heritage sites, did you utilize any digital tools, such as mobile apps, augmented reality, virtual reality, or interactive displays?	Yes, to some extent	51	42.5
	No, I didn't use any digital features	46	38.33
	Not available at the sites I visited	12	10
	Yes, extensively	9	7.5
How would you rate your overall experience with the digital features at the cultural heritage sites in Padova?	Excellent	7	5.83
	Good	43	35.83
	Average	33	27.5
	Below average	4	3.33
	I did not experience any digital features	33	27.5
Which of the following digital features did you find most useful or enjoyable during your visit? (Select all that apply)	Mobile apps with historical information	60	50.00
	Multimedia guides	34	28.33
	Virtual tours	16	13.33
	Interactive exhibits	29	24.17
	Virtual reality experiences	2	1.67
	Augmented reality experiences	3	2.50

	I did not use any digital features	44	36.67
How would you rate your overall experience with the digital features at the cultural heritage sites in Padova?	Excellent	7	5.83
	Good	43	35.83
	Average	33	27.5
	Below average	4	3.33
	I did not experience any digital features	33	27.5
Did you share your experiences with cultural products in Padova on social media (Instagram, Facebook, Tiktok,...) during or after your trip?	Yes, occasionally	64	53.33
	Yes, frequently	20	16.67
	No, I didn't share any experiences	35	29.17

- **Regarding the influence of digital content on the decision to visit Padova,** the data reveals that 55% of respondents indicated that the availability of digital content, such as photos, videos, and articles about cultural products, influenced their decision to visit Padova to some extent. 27.5% of respondents stated that digital content did not influence their decision at all. 17.5% of respondents noted that digital content significantly influenced their decision to visit Padova.
- **In terms of awareness about digital initiatives at cultural heritage sites in Padova**, the data shows that 48.33% of respondents were not aware of any digital initiatives or innovations before or during their visit. 36.67% of respondents were unsure about the presence of digital initiatives, indicating a need for improved communication. 15% of respondents were aware of digital initiatives at cultural heritage sites in Padova.
- **Regarding the utilization of digital tools while visiting cultural heritage sites**, the data indicates that 42.5% of respondents utilized digital tools, such as mobile apps, augmented reality, virtual reality, or interactive displays, to some extent. 38.33% of respondents did not use any digital features during their visit. 10% cited that digital tools were not available at the sites they visited. 7.5% of respondents used digital tools extensively during their visit.
- **When rating the overall experience with digital features at cultural heritage sites in Padova**, the data reveals that 5.83% of respondents rated their experience as "Excellent." 35.83% rated it as "Good." 27.5% found it "Average." 3.33% considered it "Below average." 27.5% did not experience any digital features during their visit.
- **In terms of the digital features considered most useful or enjoyable during the visit**, the data shows that "Mobile apps with historical information" were selected by 50% of respondents "Multimedia guides" were chosen by 28.33% of respondents. "Interactive exhibits" were enjoyed by 24.17% of respondents, while "Virtual tours" and "Augmented reality experiences" also received recognition. 36.67% of respondents did not use any digital features during their visit.
- **In terms of sharing experiences on social media**, the data shows that 53.33% of respondents shared their experiences on social media, such as Instagram, Facebook,

and TikTok, occasionally. 16.67% shared their experiences frequently, reflecting active engagement. 29.17% of respondents did not share any experiences on social media during or after their trip.

Table 2: Issues while using digital features

Issue	n	Percentage
Language of digital contents	64	25%
User Interface and Usability	45	17%
Lack of Guidance or Technical Support	41	16%
Connectivity and Network Issues	39	15%
Updates and Maintenance	25	10%
Compatibility and Device Restrictions	11	4%
No issues	7	3%
Accessibility for People with Disabilities	6	2%
No promotion of digital features	4	2%

- Respondents encountered various digital challenges, with the most prevalent issue being "Language of digital contents," reported by 25% of respondents. "User Interface and Usability" were significant challenges, accounting for 17% of the issues. A substantial number of respondents also faced "Lack of Guidance or Technical Support," making up 16% of the challenges. Connectivity and network issues were mentioned by 15% of respondents. "Updates and Maintenance" posed challenges for 10% of the respondents. Additionally, "Compatibility and Device Restrictions" were reported by 4%, and 3% experienced "No issues" at all. Challenges related to "Accessibility for People with Disabilities" were encountered by 2% of respondents, while "No promotion of digital features" was mentioned by 2% as well.

1. Hypotheses analysis

In this part, we have our hypotheses for assessment, to investigate the relationships between specific variables related to the visitor experience in Padova's cultural heritage sites. In order to directly examine these hypotheses, we utilized contingency table, analyzing the p-values and Chi-Squared statistics to assess the significance of these relationships. The results provided insights into the strength and significance of these associations, aiding us in drawing meaningful conclusions about the impact of various factors on the visitor experience.

Table 3: Contingency table for Hypotheses assessment

Variable 1	Variable 2	p-value	Chi-Squared	Hypothesis
Utilizing digital tools, such as mobile apps, augmented reality, virtual reality, or interactive displays, while visiting the cultural heritage sites	rating of overall experience with the digital features at the cultural heritage sites in Padova	2.57E-07	154.7484472	H1
the availability of digital content (e.g., photos, videos, articles) about cultural products influence visitor's decision to visit Padova	rating of overall experience with the digital features at the cultural heritage sites in Padova	2.93E-07	45.51968318	H2
aware of any digital initiatives or innovations implemented at the cultural heritage sites in Padova	utilization of digital tools, such as mobile apps, augmented reality, virtual reality, or interactive displays	2.05E-03	20.72654844	H3
sharing experiences with cultural products in Padova on social media (Instagram, Facebook, Tiktok,...) during or after the trip	recommend visiting Padova and its cultural heritage sites to friends and family	5.74E-07	40.76835703	H4
rating of overall experience with the digital features at the cultural heritage sites in Padova	the quality and the enjoyment using digital features during the visit	2.57E-07	154.7484472	H5

- **Hypothesis 1 (H1):** *Tourists who utilize mobile apps, augmented reality, or virtual reality tools during their visits to cultural heritage sites in Padova will report higher levels of satisfaction and engagement.*

This hypothesis explores the relationship between utilizing digital tools during the visit and the overall experience rating with digital features in Padova's cultural heritage sites. The p-value of 2.57E-07 and the high Chi-Squared value of 154.75 suggest a significant association between these variables. This means that visitors who use digital tools tend to rate their digital experience more positively, indicating a strong connection. Moreover, this is consistent with the idea that interactive and technology-enhanced experiences can enhance visitor satisfaction. In this context, Research supports this, indicating that immersive digital tools in heritage tourism can enhance engagement and satisfaction (Wang, 2020).

- **Hypothesis 2 (H2):** *The availability of digital content (e.g., photos, videos, articles) significantly influences tourists' decisions to visit Padova and explore its cultural heritage.*

H2 investigates whether the availability of digital content about cultural products influences the decision to visit Padova and the rating of the overall experience with digital features. The p-value of 2.93E-07 and a Chi-Squared of 45.52 indicate a significant relationship. Visitors who are influenced by digital content tend to rate their digital experience more positively, suggesting that digital content plays a role in attracting and satisfying tourists which lead them to take a decision. Therefore, the availability of rich digital content can serve as a promotional tool, especially for those seeking cultural experiences. This aligns with the concept that digital content can be a driving force in attracting tourists (Xiang & Gretzel, 2010).

- **Hypothesis 3 (H3):** *Awareness of digital initiatives or innovations at cultural heritage sites positively correlates with tourists' utilization of digital tools.*

H3 explores the relationship between awareness of digital initiatives at cultural heritage sites and the utilization of digital tools. The p-value of 2.05E-03 and a Chi-Squared of 20.73 indicate a significant association. Visitors who are aware of digital initiatives are more likely to utilize digital tools, emphasizing the role of awareness in technology adoption. This highlights the importance of visitor awareness in promoting the utilization of technology-enhanced experiences. This theory is supported also by Research on the adoption of technological innovations in tourism supports this notion (Buhalis, 2003).

- **Hypothesis 4 (H4):** *Tourists who share their experiences on social media are more likely to recommend visiting Padova and its cultural heritage sites to friends and family.*

H4 delves into the connection between sharing experiences on social media and recommending Padova to friends and family. The p-value of 5.74E-07 and the Chi-Squared of 40.77 indicate that there is a strong significant association between these variables. In this case, the p-value is high, suggesting that there's strong evidence to support a relationship between social media sharing and recommendations. Therefore, this aligns with the understanding that eWOM and WOM play a pivotal role in shaping destination preferences and decisions (Gretzel et al., 2007). Therefore, Recommendations from friends and family have a significant influence on travel choices.

- **Hypothesis 5 (H5):** *The quality of the digital features, as perceived by tourists, influences their overall satisfaction with the cultural heritage sites.*

H5 investigates the link between the overall experience rating with digital features and the perceived quality and enjoyment of using these features. The p-value of 2.57E-07 and the Chi-Squared of 154.75 point to a significant connection. Visitors who rate their digital experience highly also report better quality and enjoyment, emphasizing the importance of quality in enhancing satisfaction. Likewise, this is in line with the idea that the perceived quality and enjoyment of technology-based experiences directly impact visitor satisfaction and engagement (Frochot et al., 2015).

Conclusion and implications

The quantitative findings of the study provide robust support for the notion that smart technologies wield a considerable impact on elevating the overall tourism experience in Padova. Notably, visitors actively engaging with digital tools during their visits consistently report more positive digital experiences, underscoring the transformative potential embedded within these technologies. Moreover, the data indicates a clear correlation between the availability of digital content and tourists' decisions to visit Padova, as well as their overall digital experience ratings. This underscores the promotional efficacy of digital content, particularly for those seeking culturally enriching experiences. Furthermore, the results shed light on the pivotal role of awareness in influencing the utilization of digital tools at cultural heritage sites. Visitors who are cognizant of digital initiatives are more inclined to adopt these technologies, emphasizing the significance of proactive awareness campaigns in driving technology adoption. Additionally, the quantitative data demonstrates a significant association between the overall experience rating with digital features and the perceived quality and enjoyment derived from using these features. In consideration of these integrated findings, several key recommendations emerge to enhance and propel smart cultural tourism in Padova:

- **Digital Education and Training Programs:** Implement structured digital education and training programs targeted at local residents, with a particular focus on older generations. By increasing their familiarity and comfort with technology, these programs can effectively bridge the generation gap in technology adoption, fostering a more tech-savvy local community.
- **Enhanced Digital Content:** Develop and curate high-quality, multilingual digital content showcasing the cultural products of Padova. This content should be designed to be engaging, informative, and authentic, catering to the diverse interests of tourists. A comprehensive digital repository can significantly enhance the overall visitor experience.
- **Sustainable Technology Integration:** Ensure that the integration of metaverse technologies and other digital features in cultural heritage sites aligns with sustainability and eco-friendly practices. Exploring the use of renewable energy sources for technology installations can contribute to environmentally conscious tourism initiatives.
- **Community Involvement:** Actively encourage local residents to participate in promoting Padova as a tourist destination. This involvement may include sharing positive experiences on social media platforms, providing local recommendations and tips, supporting local businesses, and engaging in volunteer activities related to tourism promotion.
- **Balanced Approach:** Maintain a balanced approach that harmonizes traditional and digital strategies. Recognize the varying preferences and technological familiarity among tourists, ensuring that digital technologies complement rather than replace existing tourism practices. This approach caters to a diverse range of visitors.
- **Destination Management Organization (DMO):** Consider establishing a Destination Management Organization (DMO) in Padova to holistically manage and promote the destination. A well-organized DMO can address critical issues such as sustainability, marketing, and the enhancement of the overall tourist experience, ensuring a coordinated and strategic approach.
- **Public-Private Partnerships:** Promote and facilitate public-private partnerships to enhance tourism in Padova. Collaborative efforts can focus on improving accommodation availability, addressing concerns related to tourist scams and safety, and fostering a supportive environment for sustainable tourism growth. These partnerships can play a pivotal role in creating a thriving and resilient tourism ecosystem.

Limitations and Future research

- **Sample Size**: The sample size of the quantitative survey is 120 and it may not fully represent the diverse array of tourists visiting Padova, potentially limiting the generalizability of findings.
- **Potential Bias**: Respondents in the survey might exhibit digital bias, as the survey was conducted online, potentially excluding participants who are not comfortable with or do not have access to digital technology.

- **Self-Report Bias**: Data collected through self-report surveys may be subject to various biases, including social desirability bias and subjectivity, which can affect the accuracy of responses.
- **Data Collection Period**: The data collection period of the study was limited, and expanding the duration and conducting data collection during different times of the year could provide a more comprehensive picture of tourist behaviors and perceptions.

To further expand our understanding of tourist behavior and preferences in Padova and continue enhancing the city's tourism sector, several avenues for future research merit exploration;

- Cross-Cultural Studies: Explore how cultural backgrounds and origin countries influence tourist behaviors and perceptions in Padova. This research can provide valuable insights for tailoring experiences to specific cultural preferences.
- Comparative Analysis: Extend the study to include comparisons with other tourist destinations to identify common trends and unique characteristics of Padova. Comparing with similar and dissimilar destinations can offer insights into the specific advantages and challenges in Padova's tourism industry.
- Digital Literacy and Accessibility: Investigate tourists' digital literacy levels and their access to technology. Understanding the digital divide among tourists and its impact on their experiences can inform strategies for making digital features more inclusive.
- Sustainability and Eco-Friendly Practices: Investigate the extent to which tourists prioritize sustainability and eco-friendliness when selecting destinations. This research can help in designing and promoting eco-friendly initiatives and practices within Padova's tourism sector.
- Local Community Engagement: Research the involvement of the local community in tourism promotion and management. Assess the effectiveness of initiatives that encourage locals to contribute to tourists' experiences and perceptions.

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