Exploring the Journey of the European Capital of Smart Tourism 2023: Case Study on How Innovation and Digital Technologies Enable Smart Tourism in Seville.

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Abstract

This research project analyses Seville's journey toward becoming a smart tourism destination, with a specific focus on the role of innovation and digital technologies. While the findings of this study are context-specific to Seville, they offer valuable guidance for destinations that want to develop innovative and digital solutions for smart tourism and enhance sustainability, visitor experiences, and economic growth. The research question addressed in this paper is: *"How do innovation and digital technologies enable smart tourism in Seville, the European Capital of Smart Tourism 2023?"* To answer this question, the study draws upon the technology-enhanced destination experiences model by Neuhofer et al. (2012) and the smart tourism ecosystem framework by Gretzel et al. (2015). Moreover, to examine Seville's journey towards becoming a smart tourism destination, primary data were collected through fieldwork, including observations, and informal conversations and supported by email interviews, and analysis of secondary data. Through a case study, this research critically examines the strategy of the European Commission, its selection criteria, and the evaluation process, as well as the best practice examples shared by Seville. However, the study also highlights concerns about the reliability of the information provided by Seville regarding its digital solutions and smart tourism practices, emphasizing the potential for smartwashing. Furthermore, the research reveals low engagement from local stakeholders, including tourism businesses, and their limited knowledge about smart tourism, which further contributes to these concerns. In the end, the study recommends improvements in Seville's use of innovation and digitalization across all three stages of the travel cycle. This includes actively involving tourists in co-creating their experiences, using platforms like TripAdvisor for data collection and feedback, and implementing immersive reality experiences. Additionally, the observations made in this research call for a deeper examination of Seville's motivation and commitment to smart tourism, as well as the transparency and accountability within the evaluation and selection process for the European Capital of Smart Tourism award. This requires additional research to evaluate whether winning cities in the European Capital of Smart Tourism prioritize genuine implementation of smart tourism or if their commitment is only part of their marketing strategy.

Keywords: *Smart tourism, innovation, digital technologies, Seville, European Capital of Smart Tourism, sustainable development, smart destinations, smartwashing, stakeholder engagement, transparency.*

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1 The Role of Innovation in Shaping the Digital Transformation of the Tourism Industry to Smart Tourism

The tourism industry has experienced significant transformation, driven by the influence of innovation, shaping it into its current state (Hjalager, 2015). Hjalager (2015) identifies 100 innovations originating from various industries that have had an important impact on the tourism industry. The industrial revolution further revolutionized the tourism industry by introducing new transportation opportunities, enhancing tourist experiences, reducing travel risks, and improving mobility and accessibility (ŞENGEL, 2021). Thomas Cook's pioneering train journeys marked the beginning of modern tourism and played a significant role in the development of business management within the industry (Polat & Arslan, 2019). Moreover, the introduction of electricity and automobiles expanded travel possibilities and influenced tourist mobility (Gierczak, 2011). The emergence of computers and the internet led to the era of mass tourism, transforming the production process of tourism experiences through online bookings and sharing economy platforms (ŞENGEL, 2021; Groumpos, 2021). These technological advancements reshaped the landscape of the industry, enabling travellers to access a wide range of destinations and experiences with greater convenience.

The arrival of the fourth industrial revolution, also known as Industry 4.0, driven by information and communication technologies (ICTs), has brought significant changes in the tourism industry, impacting various aspects such as transportation, marketing, tourist expectations, services, and destination management (Rodič, 2017; Gül & Gül, 2018; Pencarelli, 2020). These transformative shifts have given rise to emerging trends in the tourism industry's revolutionary era of digital transformation (Gül & Gül, 2018). The adoption of new technologies and staying ahead of the competition is crucial, particularly within the tourism industry, where technology and innovation have played a significant role in its development transforming tourism into an innovative smart industry (Townsend, 2013). The notion of smartness, which emerged in the 1990s as a technological infrastructure in urban areas to promote economic, social, and environmental well-being, has gained recognition across various industries as a means to foster sustainable development and economic growth (Hollands, 2015; Nam and Pardo, 2011; Cocchia, 2014). Consequently, implementing smartness has become an essential component, even in the tourism industry (Neuhofer et al., 2012).

Within the realm of Smart Tourism, the European Commission has placed significant emphasis on the impact and transformation of digitalization in tourism. Through its European Capital of Smart Tourism initiative, the European Commission actively encourages European cities to strive towards becoming smart tourism destinations and promotes smart and sustainable tourism within the EU (An EU Initiative to Reward Innovative and Smart Tourism in European Cities! n.d.). A smart tourism capital, as defined

in this initiative, encompasses destinations that facilitate access to tourism and hospitality products, services, spaces, and experiences through ICT-based tools. Additionally, it embraces innovative and intelligent solutions while fostering the growth of entrepreneurial businesses and their interconnectedness (Guide for Applicants 2024, 2023). In 2023, the title of European Capital of Smart Tourism was awarded to Seville, Spain.

1.1 Case Study: Seville as a European Capital of Smart Tourism 2023

Seville, also known as Sevilla in Spanish, is the capital of a Spanish region and province, Andalusia. With a population of approximately 700,000 inhabitants, it is the fourth-largest city in Spain. Seville is known for its rich cultural heritage including three UNESCO World Heritage sites and because of the strong Arabic influences, Seville embraces a multicultural identity (Seville City Guide, n.d.). From a tourism perspective, Seville holds the position of being the third most visited urban tourism destination, attracting around 2.9 million visitors (in 2019). The city's services sector represents the highest concentration of companies in Andalusia and tourism contributes to 18% of the region's GDP, with 25% of Seville's residents relying on the tourism industry for their livelihoods (WHY SEVILLE – Seville Smart Tourism Capital, n.d.).

Seville has been recognised by the European Commission as a centre for tourism innovation and business development because of its projects focusing on achieving climate neutrality, fostering technological innovation, implementing low-emission transport systems, and establishing high-capacity bus lines. The city's reputation as a hub for tourism innovation and business stems from its holistic approach, which encompasses infrastructure development, collaborative public and private initiatives, and the hosting of international events such as the Tourism Innovation Summit. This international event showcases the latest innovations within the tourism industry and will be based in Seville until 2030, which is showing the city's position as a hub for tourism innovation (SEVILLE – Winner of the 2023 Competition, n.d.). Moreover, as shared on its official website, sustainability lies at the heart of Seville's urban development and the city's commitment to a new sustainable tourism model with the slogan "Shared and Common City," forms the core of the Strategy Seville 2030. Thus, Seville represents itself as a city that places sustainable tourism as a top priority, with the well-being of its citizens at the forefront (WHY SEVILLE – Seville Smart Tourism Capital, n.d.).

1.2 Problem Area and Research Question

In the era of the fourth Industrial Revolution, characterized by innovation and digital transformation, the concept of smart tourism has gained significant attention. The rise of digitalization is reshaping the travel industry, aligning it with the Sustainable Development Goals (SDGs) and creating new business opportunities while ensuring competitiveness, growth, and sustainability. However, realizing the

positive impacts of digitalization requires the use of innovation, smart assets, and efficient resource management and therefore smart destinations are seen as a key to transforming the tourism sector (UNWTO, n.d.).

Seville's designation as the European Capital of Smart Tourism 2023 can be seen as an example of how the cities can commit to fostering innovation, sustainability, and digital transformation within the tourism sector. Therefore, this research project aims to examine Seville's journey toward becoming the European Capital of Smart Tourism, specifically focusing on how innovation and digitalization have been used as tools for smart tourism development.

It is important to note that the findings gained from this research are context-specific and cannot be used to generalize the phenomenon of smart tourism development. However, they can serve as a guide for destinations in developing innovative and digital solutions to becoming smart destinations and enhancing sustainability, visitor experiences, and economic growth within the tourism sector. The primary objective of this research paper is therefore to analyse and address the following exploratory research question:

How Do Innovation and Digital Technologies Enable Smart Tourism in Seville, the European Capital of Smart Tourism 2023?

2 Literature Review

The literature review section provides an overview of previous studies and existing knowledge regarding the impact of innovation and digitalization on the tourism industry. It explores different perspectives on smart tourism, smart cities, and smart tourism destinations, as well as the challenges and opportunities associated with these topics. The section dedicated to the European Capital of Smart Tourism offers an overview of how this initiative aligns with the digitalization strategy of the European Union. It provides detailed insights into the competition, including the application, evaluation, and awarding process, along with the benefits offered to the winning cities. As the focus of this case study is on Seville, a city in Spain, the final section looks into the development of smart tourism in Spain.

2.1 The Influence of Innovation and Digitalization on the Tourism Industry

Digitalization has changed the travel and tourism industry and transformed it into an innovative and technologically advanced smart sector. According to Happ & Ivancsó (2018) digitalisation, which can be defined as the use of modern Information and Communications Technologies (ICTs) was used in tourism since the 1970s for the Computer Reservation Systems (CRS). Gelter (2022) highlights how digital technologies impact people's lifestyles and behaviours by using smartphones, wearable accessories, augmented reality, 3D printing, action cameras, and robotics. In addition, Pencarelli (2020) emphasizes

the role of new digital technologies such as the Internet of Things (IoT), Virtual Reality (VR), Augmented Reality (AR), Artificial Intelligence (AI), connectivity, and Web 4.0 in enabling smart tourism and Tourism 4.0. While Tourism 4.0 primarily focuses on the use of ICT technologies and devices, Smart Tourism refers to the effective use of technological, human, and social resources to promote sustainability and enhance the quality of life in smart tourist destinations, ultimately enriching the customer's tourism experiences. Pencarelli (2020) further argues that the integration of digital technology and innovation is represented by Web 4.0, the fourth generation of the World Wide Web characterized by enhanced user interaction and the combination of the physical and virtual world. Within the tourism context, Web 4.0 is used in the form of travel advisors and electronic agents that assist tourists in planning and booking their trips, providing relevant online information to enhance their decision-making process and overall tourism experience (Pencarelli, 2020).

Furthermore, digitalization has contributed to the emergence of the Big Data phenomenon. McKinsey Global Institute (2011) defines Big Data as datasets that exceed the capacity for understanding, storing, managing, and analysing typical data. In the tourism industry, companies of all sizes utilize Big Data to gain a better understanding of tourist needs. This digitalized data is collected through various sources, including online and offline activities tracked through the Internet of Things sensors. According to Pencarelli (2020), the information obtained from Big Data enables companies to identify patterns and trends in tourist behaviour, such as travel patterns, social interactions, and purchasing habits. For instance, providing free Wi-Fi access allows for the collection of data on the number of people connected at specific times and locations, which can help enhance tourism forecasting (Buning & Lulla, 2021). The use of Big Data opens up numerous opportunities for the tourism industry, including a better understanding of the psychographic profiles of tourists, enabling a more tailored approach to meet their needs (Fuchs et al., 2022). Destination decision-makers can use this information for marketing purposes and other strategic decisions (Emmer & Holešinská, 2019). Governments have also begun implementing Big Data applications to enhance sustainability and improve transportation, water, and energy usage, leading to cost and resource reductions. However, Centobelli & Ndou (2019) argue that the full value and potential of Big Data analytics are still not fully understood and require further research.

In contrast to Big Data, Open Data refers to publicly accessible data that presents new opportunities for businesses. García-Milon et al. (2020) suggest that Open Data enables various businesses to explore innovative solutions, improve efficiency in public administrations, and increase citizen participation in political life. The European Commission as part of the digital agenda for Europe supports the use of Open Data mainly for the high potential for re-using data, higher chances to discover new innovative

solutions, improved efficiency between public administrations, and increased participation of citizens in political life (European Commission, 2011).

Hence, the evolution of digital technology and the use of innovation, has had a significant impact on the tourism industry, transforming the behaviours of tourists, businesses, and tourist destinations.

2.2 Smart Cities and Smart Tourism Destinations: A Review of Perspectives, Challenges, and Opportunities

This section provides an overview of different perspectives on smart tourism, smart cities and smart tourism destinations, and discusses the challenges and opportunities associated with the idea of "smartness" as commonly discussed in the literature.

The conceptualization of smart tourism varies among scholars. Gretzel et al. (2015) define smart tourism as the use of Big Data for storing, processing, combining, and analysing information to generate novel business operations and services. Buhalis and Amaranggana (2015) emphasize the use of Big Data to analyse patterns and trends in user behaviour, which are then used for improving tourism services and enhancing the overall tourist experience. Shafiee et al. (2019) argue that the implementation of smart tourism aims to enhance competitiveness and foster sustainable practices. Pencarelli (2020) portrays smart tourism as the application of information and communication technologies (ICTs) to achieve sustainability, enhance customer experiences, and improve the quality of life for residents, with specific attention to sustainable mobility, privacy protection, waste and water management, and energy consumption. However, the lack of clarity and universally accepted definition of smart tourism, challenges stakeholders to adopt smart approaches in tourism destinations (Gretzel et al., 2018).

Similarly, the concept of smart tourism destinations (STD) has multiple interpretations. Xiang and Tussyadiah (2014) argue that the concept of smart tourism destinations stems from the development of Smart Cities. According to Vicini et al. (2012), Smart Cities are characterized by the integration of technology to enhance the quality of life for citizens and improve the efficiency of services for both citizens and tourists. However, Jasrotia and Gangotia (2018) contradict Xiang and Tussyadiah's claim, stating that smart cities do not exist on their own but are closely connected with smart tourism destinations. Ronay and Egger (2013) argue that Smart Cities are primarily developed to improve citizens' quality of life and enhance the efficiency of city services, such as energy optimization and traffic monitoring. On the other hand, Caragliu et al. (2011) propose a different perspective, defining Smart Cities as those that achieve sustainable economic growth and high quality of life through investments in human capital, government participation, and infrastructure that supports the dissemination of information throughout the city. Similarly, Komninos et al. (2013) state that smart

cities rely on three main pillars: human capital, infrastructure, and information. Finally, the United Nations World Tourism Organization (UNWTO) defines smart destinations as those encompassing technology, innovation, sustainability, accessibility, and inclusivity throughout the entire travel cycle, taking into account the interests of residents, tourists, seasonal variations, and cultural heritage (UNWTO, n.d.).

Zhuang et al. (2017) further argue that even though smart cities and smart tourism destinations have similar components, they create different experiences for their stakeholders. Moreover, the concept of smart tourism encompasses a broad range of components and topics. For instance, Shafiee et al. (2021) conducted a comprehensive review of the smart tourism literature, offering valuable guidance for future research and smart tourism development. In their review, they identified key elements involved in the development of smart tourism, including stakeholders, structure, processes, technology, and policies.

Wang et al. (2012) looked at the adoption of smart IT features in the tourism industry and concluded that it not only transforms travellers' experiences and behaviours but also reshapes the business model of the tourism industry to provide more innovative experiences through the use of technology. Darianian and Michael (2008) highlighted ethical concerns, particularly regarding privacy, when incorporating smartness into any industry. The utilization of intelligent systems in destinations allows access to personal information about users and their activities, including their physical location, which can be perceived as a potential threat to privacy. Therefore, the authors suggest that the advantages and disadvantages for users should be carefully considered when integrating intelligent systems into tourism.

In a recent study, Gelter et al. (2022) examined stakeholders' understanding of smart tourism destinations in two Swedish destinations. The findings indicate that sustainability is viewed as a primary pillar that should be the main focus of smart tourism development, along with increased knowledge, networking, and collaborative efforts towards a common goal. This perspective is also supported by Gretzel and Koo (2021), who emphasize the importance of collaboration and a holistic understanding of smart tourism development. Furthermore, Gelter et al. (2022) highlight stakeholders' concerns regarding the misuse of technology for economic growth and the lack of transparency. They propose that destinations should be more transparent in showcasing their initiatives to address these concerns.

Overall, the literature indicates varying perspectives on the concept of smart cities and smart tourism destinations. The integration of technology presents both advantages and disadvantages, requiring careful consideration of ethical concerns and sustainability goals. Collaboration, transparency, and a

focus on sustainability emerge as key factors in the successful development of smart tourism destinations.

2.3 European Capital of Smart Tourism Initiative

To support the competitiveness, sustainability, and resilience of the tourism sector in the EU, the European Commission has initiated the European Capital of Smart Tourism, an EU program implemented in 2019. This initiative encourages European cities to showcase their best practices as smart tourism destinations, fostering partnerships and creating unique visitor experiences. By promoting the development of smart destinations, the program aims to strengthen tourism-generated innovative development in European cities, increase their attractiveness, and stimulate economic growth and job creation (European Commission, n.d.).

Figure 1 Description of Four Categories of European Capital of Smart Tourism (Source: Guide for Applicants 2024,2023)

Financed under the COSME Programme for the Competitiveness of Enterprises and Small and Medium-sized Enterprises (SMEs), the European Capital of Smart Tourism competition is based on four categories: Accessibility, Sustainability, Digitalization, and Cultural Heritage & Creativity, further described in Figure 1. Participating cities must provide examples of innovative and intelligent solutions implemented in each category (Guide for Applicants 2024, 2023).

The submitted applications undergo evaluation consisting of two steps. In the first step the experts in tourism score each application based on its merits in the above-mentioned categories. In the second step of evaluation, a maximum of 7 shortlisted cities with the highest scores are invited to present their proposed program for their potential year as the European Capital of Smart Tourism. The cities present their plans to the European Jury, detailing how they intend to use the title to promote their destination, raise their profile, attract tourists from third countries, and contribute to the smart tourism development within the city. Based on these presentations, up to two cities are selected as European Capitals of Smart Tourism (Guide for Applicants 2024, 2023). These selected cities receive expert communication and branding support to promote their destinations through various media channels and online platforms. They also receive a city centre sculpture, a promotional video showcasing their destination and smart tourism practices, as well as other promotional initiatives from the EU. These actions are specifically designed to enhance the city's visibility and attract more visitors (*European Capital of Smart Tourism*, n.d.).

It is important to note that while the European Commission shares examples of best practices from some cities, the presentations prepared by cities for the second step of evaluation are not available to the public.

2.4 Smart Tourism Development in Spain

It is important to note that Seville's recognition as the European Capital of Smart Tourism is not an isolated occurrence. Spain has actively embraced the development of smart tourism through the Smart Tourism Destinations project. Launched by the Secretariat of State for Tourism and implemented by Sociedad Mercantil Estatal para la Gestión de la Innovación y las Tecnologías Turísticas, S.A.M.P (SEGITTUR) under the Ministry of Industry, Trade and Tourism, this project aims to promote innovation within the Spanish tourism sector. SEGITTUR's objective is to drive the digital transformation of tourism areas in Spain, enhancing sustainable development, ensuring tourist satisfaction, and improving the quality of life for local communities (Smart Tourism Destinations - SEGITTUR | Segittur.es, 2021). The following chart in Figure 2 provides an overview of tourism bodies in Spain to better understand where SEGITTUR stands.

In its "Tourist Destinations Report: Building the Future," SEGITTUR (2015) outlines the action guidelines on how to become a smart tourist destination. These actions focus on five specific pillars: governance, technology, innovation, accessibility, and sustainability. The aim is to develop a comprehensive and integrated vision of the destination that includes all areas (SMART TOURIST DESTINATION - SEGITTUR, 2022).

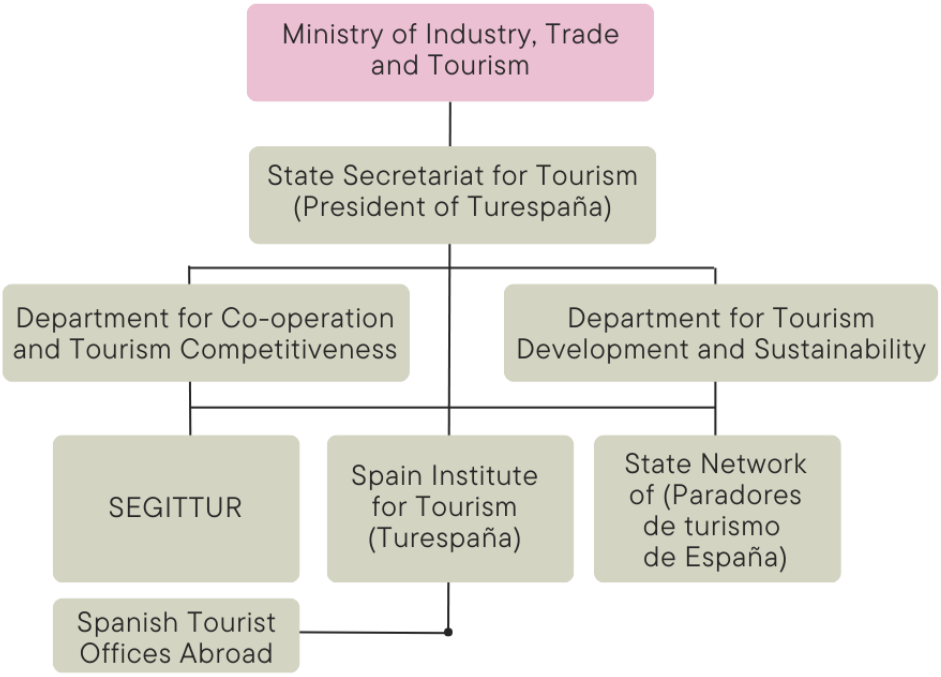


Figure 2 Organisational Chart of Tourism Bodies in Spain, Source: OECD, Adapted From Ministry of Industry, Trade and Tourism, 2020

Moreover, Spain is co-funding various projects to foster digitalization for tourism destinations within the Spanish Smart Destinations Network and tourism companies. For example, in 2022, 45 million EUR was spent on implementing Artificial Intelligence in companies in the tourism sector, and 115 million EUR was spent on fostering the digital development of tourism destinations. By prioritizing innovation and technology, Spain is developing new ways for the future of the tourism industry, increasing the competitiveness of Spain as a destination, and building a more sustainable and profitable tourism model (OECD, n.d.).

Looking at the research conducted on smart tourism in Spain, González-Reverté (2019) analyzed the impact of smart tourism development on sustainability. The author analysed the action plans and strategy documents, which revealed that smart tourism often prioritizes creating new tourism products using technology, rather than addressing sustainability and the needs of residents. Many pilot projects also show limited interest in comprehensive sustainable initiatives. Therefore, the author argues that smart tourism destinations should go beyond regional concerns and address global sustainability issues while using technology more effectively.

Another study conducted by Antonovica et al. (2019) focused on tourists' perspectives in Madrid, examining the role of technology in enhancing their destination experience. The findings suggest that tourists in Madrid consider technology crucial for improving their overall experience. Technology, such as hotel Wi-Fi, allows visitors to access information about the hotel and contribute to sustainability practices, such as reusing towels, saving water, and managing room amenities responsibly. Information technology enables tourism companies to gather valuable data for customizing tourism experiences, better understanding individual preferences, and reducing long-term customer relationship costs. This study highlights the importance of new technological solutions for the future of destinations.

3 Theoretical Framework

The theoretical framework of this study encompasses the smart tourism ecosystem, technology-enhanced destination experiences, and smartwashing. These theories collectively contribute to the evaluation of how innovation and digitalization facilitate the development of smart tourism in Seville.

3.1 Smart Tourism Ecosystem

Various authors have described different variations of ecosystems such as Gretzel et al. (2015) defined the smart tourism ecosystem (STE) as a concept consisting of digital ecosystems and smart business networks, where technologies play an essential role. Data emerging from these technologies act as drivers for new business models. A digital ecosystem, characterized by Boley & Chang (2007), is an open, flexible, demand-driven, interactive network for collaborative environments. McCormack (2012) argues that digital ecosystems focus on the interaction between technological devices, databases, and programs that facilitate information flow, forming the infrastructure for digital business ecosystems. While these descriptions have a technological perspective, Gretzel et al. (2015) looked at digital ecosystems in the context of tourism and describes it as an "intelligent" tourism system that supports flexible communication through information and communication technologies, enabling information access anywhere, anytime, and creating value-enhanced experiences throughout the travel cycle. Furthermore, Werthner and Klein (1999) argue that the use of information and communication technologies has been essential in tourism ecosystems, connecting different players, supporting the value chain and its stakeholders, and completely changing traditional distribution channels. Sigala (2018) suggests that tourism ecosystems involve a wide range of actors both located within a destination but also globally, which is making it difficult to determine system boundaries. With the use of information and communication technologies, new stakeholders can easily emerge, even in the online world, such as Booking.com, Expedia, TripAdvisor, or Airbnb.

Akaka et al. (2013) discuss that the use of ICTs has influenced consumer behaviour, increased market transparency, and facilitated social exchange. With the increased use of technology, tourism consumers

are seen as value co-creators within tourism ecosystems, actively contributing to the experience. Gretzel et al. (2015) describe the digital ecosystem as the main component that makes tourism destinations smart, supporting them with intelligent systems, cloud computing, Linked Data, social networks, the Internet of Things, and mobile applications. Authors further argue that connecting tourism and digital ecosystems creates a smart ecosystem, where ICTs, sensor networks, and wireless communication systems form the fundamental base for integration and data exchange among tourism stakeholders. On the other hand, Buhalis and Amaranggana (2013) describe smart tourism destinations as places where stakeholders are interconnected through technological platforms to collect, create, and exchange information, ultimately creating and enriching sustainable tourism experiences in real time.

Lamsfus et al. (2015) identify mobile and wireless technologies as important elements of the STE, providing mobility to the final consumer. Xiang and Gretzel (2010) emphasize the significance of social media, as consumers produce, share, and consume social content instantly. Intelligent systems, location-based services, and sensor technology also provide crucial data for smart tourism ecosystems (Lamsfus et al., 2013). Gretzel et al. (2015) provide the most in-depth description of the smart tourism ecosystem, as shown in Figure 1. They describe it as consisting of a variety of "species," including touristic consumers who have resources and often interact with residential consumers through, for example, sharing economy. These two species consume and produce data through social media activities and the use of location-based services, and they also consume data produced by other species, often through mobile applications. Tourism suppliers can connect with other business-focused species through smart technology and create new services or products. Other suppliers, such as telecommunications companies and banking services, represent important species in the STE as they provide critical information and offer opportunities for enhanced value creation. Government agencies ensure data openness and regulate data privacy, as suggested by Buhalis & Amaranggana (2013). However, Porter and Kramer (2019) argue that in the shared-value economy, smart tourism ecosystems are self-regulating through traditional and non-traditional media sources such as blogs and social media channels. Destination Marketing Organizations (DMOs) provide information, develop marketing initiatives, and focus on quality control of products and services using data. Gretzel et al. (2015) further argue that the STE not only provides opportunities for technological innovation, new business models, and new interactions between species but also questions the roles of already existing species, such as Destination Marketing Organizations, whose role in an STE is no longer clear, and whose value creation activities might be taken on by other species.

Sigala (2018) examined the benefits that smart tourism ecosystems provide to tourists. They highlight the tourists' crucial role as co-creators and users, influencing decision-making processes through

suggestions for context-specific activities, improving experiences by providing information and encouraging the sharing of their experiences. From the perspective of tourism companies and other stakeholders, smart tourism ecosystems bring benefits such as process automation, efficiency gains, new product development, demand forecasting, crisis management, and overall value co-creation (Yoo et al.,2017). However, there are also various challenges associated with STE, especially related to security and privacy, as well as dependence on technology, primarily due to location-based services that, while useful for travellers, make them vulnerable (Andrejevic and Burdon, 2015).

3.2 Technology-Enhanced Destination Experiences

In her study titled "Exploration of the Technology Enhanced Tourist Experience," Neuhofer (2016) examined how information and communication technologies (ICTs) can enhance tourist experiences through co-creation between companies and consumers in the pre, during, and post-stages of travel. The study introduced the concept of technology-enhanced destination experiences, which addresses the holistic impact of ICTs on tourist experiences. The conceptual framework presented in the study illustrates how the use of ICTs acts as a catalyst for change in experience co-creation, transforming how companies and consumers integrate technology to co-create tourist experiences. To fully grasp the Technology-Enhanced Destination.

Multiple authors have argued that the dynamic nature of the tourism industry and the increasing use of ICTs, have challenged the traditional notion of the tourist experience. Consumers now actively participate in creating their experiences (Ramaswamy, 2009) with ICTs serving as tools for co-creation (Tussyadiah and Fesenmaier, 2009). Cutting-edge examples of technology improving the experience include websites, online travel guides, and virtual realities (Binkhorst & Den Dekker, 2009). Web 2.0 allows online consumers to become co-marketers, co-producers, and co-designers of their service experiences, making it a significant development for co-creation among various available ICTs (Sigala, 2009). In this context, the Technology-Enhanced Destination Experience, as argued by Buhalis et al. (2008), represents how technology enhances the destination experience, maximizes co-creation potential, generates added value, and provides a competitive advantage for destinations.

The model of Technology-Enhanced Destination Experiences shown in Figure 3. represents an extended experience space, blurring the boundaries between the home and away phases. This shift has led to suggestions for Destination Management Organizations (DMOs) to focus on experience creation within an extended physical and virtual experience space, rather than only improving on-site destination experiences (Prahalad & Ramaswamy, 2004). Additionally, technology has facilitated connectivity among tourists, their friends, family, and peers. Thus, there is an opportunity for DMOs to bring

together the network of individuals associated with the destination and encourage them to co-create their own destination experiences.

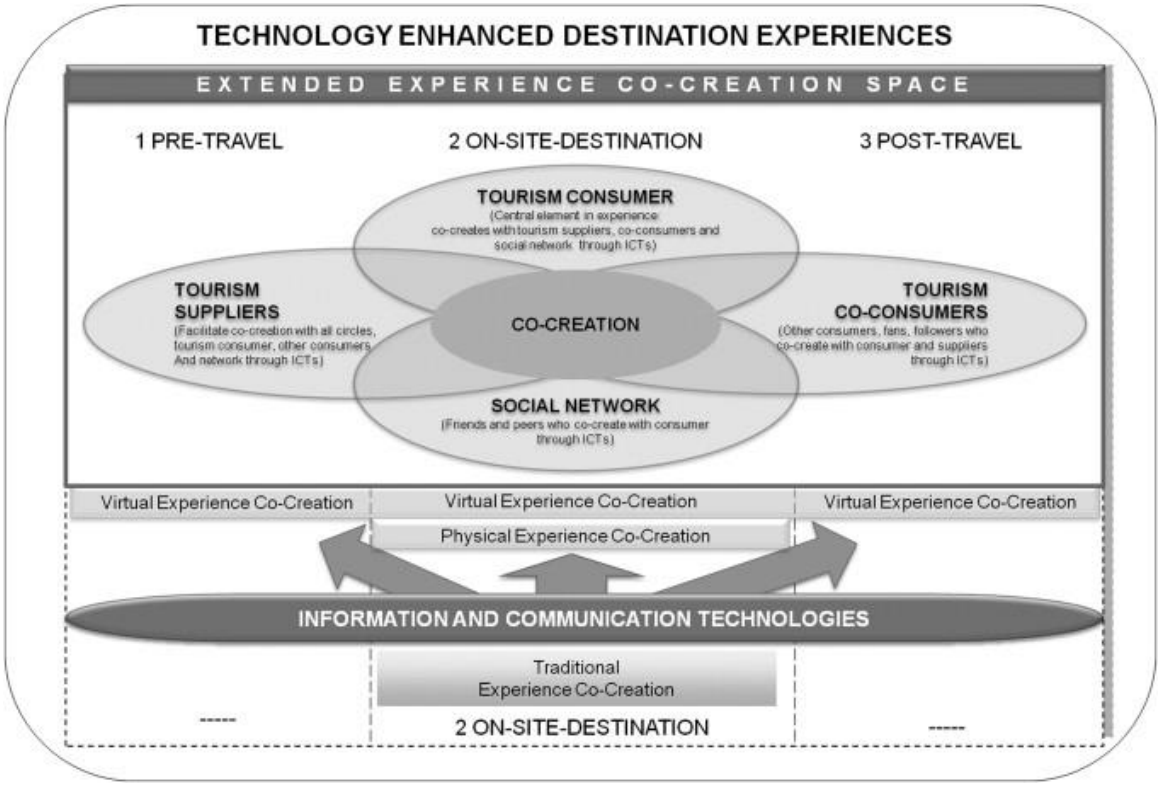


Figure 3 Technology Enhanced Destination Experiences, Source: Neuhofer (2016)

Further research by Neuhofer et al. (2015) investigated best practices in the tourism industry regarding the use of ICTs to enhance tourist experiences. The study revealed that companies use interactive websites, ordering systems, mobile platforms, social media channels, and mobile applications. The findings also emphasized the importance of differentiating between technologies that play a supplementary role in supporting the tourism experience, such as interactive online platforms for travel inspiration, and technologies that become an integral part of the experience itself by providing interactivity and trip suggestions to enhance the trip planning phase. The authors proposed distinguishing technology as either a core or supplementary element of the experience, which led to the development of an experience typology matrix that links technology and co-creation.

In a study by McCabe et al. (2012), stakeholders from the UK were engaged in a scenario-based process to see whether there is a collaboration between stakeholders who are developing technology-based tourism services. The study found increased collaboration among tourism-related suppliers but a lack of collaboration with wider groups, such as academics, locals, and visitors. This limited engagement had an impact on creativity and innovation in destination product development. Thus, it is suggested

that while stakeholder engagement at the local level is important, involving a broader range of interest groups is beneficial for the development of technology-enhanced tourism services.

Overall, the Technology-Enhanced Destination Experiences framework serves as a valuable tool for DMOs on how to use innovation and communication technologies for engaging, co-creating, and enhancing tourism experiences across all stages of travel. It enables DMOs to remain competitive and innovative in an era where digitalization and technology play a crucial role (Neuhofer et al., 2012).

3.3 Smartwashing

According to Basiri et al. (2017), smartwashing is a new form of brainwashing that involves misrepresentation and commercial propaganda of the term "smart" implying that a product or service is more advanced or innovative, in the context of smart city development. While smartwashing has not been extensively studied concerning tourism, some studies have analysed its use in the development of smart cities (Devine-Wright and Davies, 2023; Jung & Kang, 2023; Anand, 2021). Basiri et al. (2017) argue that if the government aims to advance ecological infrastructure and develop smart cities, a holistic approach is necessary. They suggest several characteristics required from smart cities, such as the collection of increasing amounts of data about city life, easy accessibility of data from various sources, provision of detailed, measurable, real-time knowledge about the city, and the use of analytics and decision-making systems. This knowledge should be effectively utilized by city managers, planners, and citizens, and through continuous interaction between the physical and digital worlds to foster more open and inclusive decision-making processes. The authors also emphasize the importance of effective collaboration among citizens, policymakers, and businesses to manage the city's life for the benefit of all.

In a recent study by Devine-Wright and Davies (2023), the role of citizens in the Smart Dublin program, which aims to transform public services and enhance the quality of life, was examined. The authors argue that although academics and government representatives acknowledge the need to involve citizens, there was no clear strategy to ensure inclusive involvement or transparent response to the outcomes of that involvement. Residents in Smart Dublin reported that their involvement only superficially addressed the root causes of the issues that were supposed to be improved, which can be considered smartwashing. Furthermore, the engagement of citizens failed to include diverse groups, such as community associations, non-profit organizations, or elderly people.

Anand (2021) also supports this statement, arguing that smart city projects are often used as a form of smartwashing. One reason for this is the use of these projects as a means of gaining an electoral advantage in local, state, or national elections, changing attention from mismanagement of urban public services. Rather than addressing the actual urban challenges, cities often create smart city

projects and invest public funds to market themselves as being smart. By the time citizens realize that the core problems have not been addressed. Anand (2021) suggests that to avoid smartwashing, citizens and stakeholders should ask critical questions to ensure that projects are appropriately positioned. In an earlier publication, Anand & Nath (2019) stated that truly smart cities promote healthy lifestyles, employ clever designs informed by behavioural insights, and encourage the use of space by different stakeholders. They prioritize sustainability and inclusion which requires policymakers to provide a different kind of leadership and create multi-layered and citizen-based models.

4 Methodology

This section starts by presenting the research design and the philosophy of science and describes the selection of a research paradigm, as well as the use of ontology and epistemology to guide the study. Furthermore, the section provides an overview of the data collection methods used, including detailed steps involved in ethnographic research, email interviewing, observations, and informal conversations. The last part describes chosen techniques for data analysis, followed by a discussion on how the validity and reliability of the collected data were ensured. Additionally, this section ends with ethical considerations that were taken into account in the research process, as well as an acknowledgement of the limitations that occurred in this research paper.

4.1 Research Design: Case Study

According to Priya (2021), the case study is widely recognized as one of the most used strategies in qualitative social research. It involves conducting an in-depth examination of a specific phenomenon within its real-life context (Yin, 2009). Yin (2009) emphasizes that a case study is not just a method of data collection but an entire research strategy or design. In this qualitative research design, the case study approach was chosen to achieve a comprehensive understanding of the subject under investigation, specifically how smart tourism is enabled in Seville through innovation and digitalization.

Case studies typically involve the use of multiple data collection methods, allowing the researcher to explore a phenomenon in depth over an extended period (Creswell, 2021). Various techniques of data collection, such as questionnaires, interviews, observations, document analysis, and natural conversations, are suggested in case study research to gain insights into the complexity of the case (De Vaus, 2001). These diverse data sources provide rich and detailed information, facilitating a holistic exploration of the research topic. Therefore, this case study will employ ethnographic research, observations, email interviews, informal conversations, and analysis of documents.

Critics of case studies, including Blatter and Haverland (2012) and Flyvbjerg (2006), argue against generalizing findings from a single case study. However, as stated in the introduction, while the findings

of this research cannot be generalized, they can serve as valuable guidance for destinations seeking to develop innovative and digital solutions to become smart destinations.

Yin (1998) identifies three research designs suitable for case studies: exploratory, explanatory, and descriptive, each of which can focus on single or multiple case studies. This case study took an exploratory approach, aiming to study a phenomenon to explore the research question in depth. The findings from this study can serve as a valuable foundation for future research, allowing for a more extensive investigation of the topic (Priya, 2021).

Case studies are particularly valuable when research questions seek to understand the "how" and "why" behind a phenomenon, capturing underlying processes that may not be easily captured through other research methods. Furthermore, a single case study is often conducted when the case under study is unique, atypical, serves as a test for a hypothesis, or represents an example of a particular phenomenon (Hollweck, 2016). Following Hollweck's recommendation, Seville was selected as the case study to investigate a specific phenomenon - smart tourism. As Seville was awarded the title of European Capital of Smart Tourism in 2023, it serves as an excellent example for this case study.

4.2 Research Approach

This research project began with an inductive approach, gradually transitioning to a deductive approach, and incorporating abductive reasoning. This sequence of approaches, often referred to as the research funnel, enabled a comprehensive exploration of the research topic.

According to Thomas (2006), an inductive process enables the researcher to gather broad and raw data on various topics, which facilitates the identification and narrowing down of specific research areas. This collected data can then be further analysed to establish connections and draw more specific conclusions by the end of the research. Inductive reasoning played a significant role in this study, as the researcher initially analysed secondary data to identify specific topics. The topic of smart tourism was broad initially, but through secondary data analysis, the focus narrowed down to the European Capital of Smart Tourism, with a specific case study on Seville, the 2023 winner. However, the research question was not fully developed at this stage.

Once the topic was chosen, the reasoning shifted to a deductive approach. The deductive approach involves collecting data and identifying topics through a more focused and hypothesis-driven process. Unlike the inductive approach, deduction aims to generate hypotheses from the collected data and test them afterwards. Moreover, the data collected through deduction is more specific to areas and does not inherently produce new assumptions as in the inductive process (Yom, 2015; Woo et al., 2017). In this case study, the researcher planned to examine the journey of Seville towards becoming the

European Capital of Smart Tourism. Data collection methods were designed to explore Seville's smart tourism development and its alignment with the criteria of the European Capital of Smart Tourism. However, during the field trip, observations raised concerns regarding smartwashing practices, particularly about digital technology. As a result, the research question became more defined, driven by curiosity and the desire to delve deeper into the topic of innovation and digitalization.

When content analysis of the collected data was done, the theoretical framework was defined. However, unexpected results emerged during the process of writing the analysis part of this project and required the use of abductive reasoning. Abductive reasoning involved generating new explanations to make sense of the observed data. As Schurz (2008) suggests abduction is based on inspection of data but leads up to finding an explanation for the phenomenon, in the end, the data is thoroughly analysed. Consequently, the researcher planned for additional data collection methods to further explore and explain these findings.

Thus, the process of using a combination of approaches throughout the study, allowed for a comprehensive understanding of the research topic and the generation of new knowledge as supported by Woo et al. (2017).

To illustrate the evolving research approach throughout the study, a research journey map was created, showing its progression over the research period. The map is presented in Figure 4.

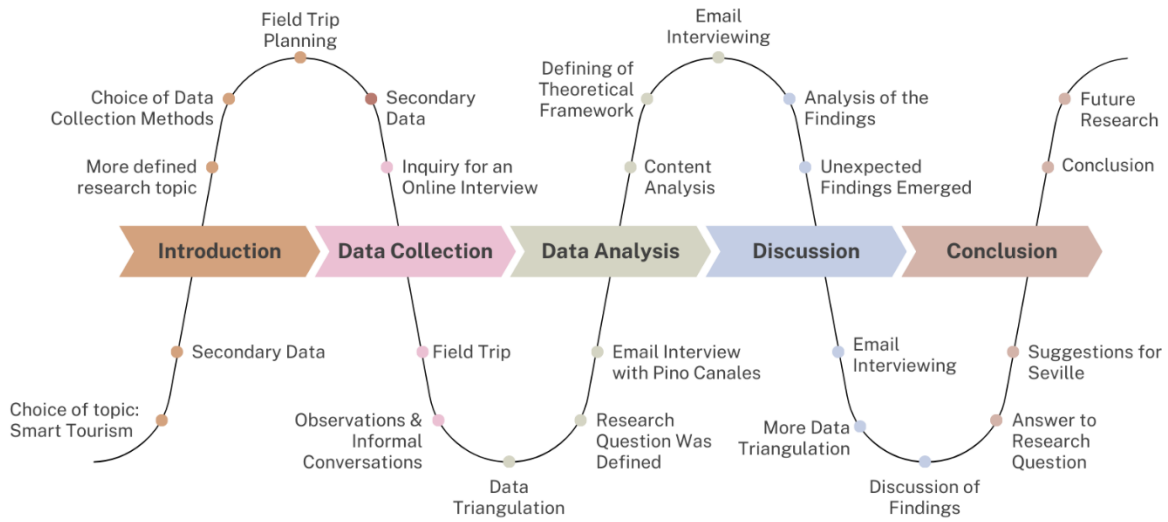


Figure 4 Research Journey Map of this Case Study

4.3 Philosophy of Science

Philosophy of science is the basis of the research, which involves the choice of research approach, formulation of the problem, data collection, processing, and analysis. It plays a crucial role in qualitative research as it guides the researcher's approach to understanding and interpreting social and cultural phenomena (Matta, 2021). Ontology, epistemology, and research paradigm are also important concepts in research that shape how researchers approach their questions and the methods they use to answer them. Understanding these concepts can help researchers to be more aware of their assumptions and biases and to make more informed choices about their research practices (Ginting & Anzela, 2019).

According to Guba and Lincoln (1994), a research paradigm is seen as a set of beliefs that guides research investigation. Similarly, Denzin and Lincoln (2000), define paradigms as human constructions, indicating how the researcher will construct meanings embedded in data. Therefore, knowing a research paradigm which consists of epistemology and ontology is important as it influences what should be studied, how it should be studied, and how the results of the study will be interpreted. Moreover, defining the research paradigm improves the overall quality of research (Kivunja & Kuyini, 2017).

In this research paper, the interpretivist - constructivist paradigm was the most dominant as it emphasizes the use of qualitative methods and the study of meaning and interpretation. This paradigm is the most used in qualitative research and is concerned with exploring the meanings and interpretations that individuals give to their experiences and the social and cultural contexts in which those experiences occur (Cohen & Manion, 1994). However, it is crucial to mention that while some authors argue that these two paradigms differ in the way they understand realities and they cannot be used interchangeably as constructivists describe that realities are socially constructed while interpretivism argues that realities are experienced (Guba & Lincoln, 1994). Smith (2008) concluded that the constructivist-interpretative paradigm states that reality is constructed through interactions between a researcher and the research subject and that knowledge can be created by experiences and conversations, showing how they can be used compatibly. Moreover, both paradigms ontologically emphasize that there are multiple realities, created through experiences of individuals meaning different people can experience the same event differently based on their reality (Lincoln and Guba, 1985; Schwandt, 1997).

And while some researchers often draw on multiple paradigms in their work depending on the research question being addressed, the goals of the study, and the researcher's own theoretical and methodological preferences, the researcher in this study decided to use these two paradigms

interchangeably, as the knowledge about smart tourism in Seville was created and influenced by both personal experiences when the researcher was exploring offerings of a destination and social world through conversations.

Furthermore, the interpretivist - constructivist paradigm is the most used in qualitative research and is concerned with exploring the meanings and interpretations that individuals give to their experiences and the social and cultural contexts in which those experiences occur (Cohen & Manion, 1994). This is further supported by Deshpande (1983) stating that qualitative research is based on interpretivism and constructivism.

However, as both paradigms highlight that there is no single reality, but multiple realities based on one's interpretation of reality is viewed as subjective as it is dependent on people's points of view, interests, and purposes (Slevitch, 2011). Sale et al. (2002) emphasized that the truth of such subjective findings can be questionable, and further described it as a matter of credibility, referring to what degree the descriptions of research findings are credible. Therefore, as objectivity and generalizability are not used in qualitative methodology, as they are both seen as unachievable from an ontological and epistemological point of view, multiple strategies were employed in this research to provide the credibility of findings and are described below in chapter 4.7. Validity and Reliability.

Moreover, sample sizes are also irrelevant in qualitative studies, as the main aim is to understand the views and opinions of a small number of participants rather than to test the hypothesis on a large sample (Walsh, 2015). Therefore, qualitative research often uses methods such as ethnography (Hammersley, 2006) and observations, in-depth focus group interviews, and participatory activities as techniques. In this study the qualitative methods for collecting data were ethnography and a case study, where data were collected through observations, spontaneous conversations and email interviews and helped to gather rich, detailed data about how smart tourism can be experienced with the use of digitalization and innovation in Seville. Gathered data were analysed with the use of interpretive analysis techniques, specifically thematic analysis to identify patterns and themes in the data and to develop an understanding of the data. Finally, a detailed description of the findings is presented in the analysis section of this paper.

4.4 Data Collection Methods

This section provides an overview of the data collection methods that were used throughout the research project, which are divided into three stages: pre-ethnographic research, during ethnographic research, and post-ethnographic research as shown in Figure 6. Each stage includes a detailed description of the specific data collection methods used during that particular phase. This approach

ensures a systematic collection of data and by using various data collection methods at different stages, the research project increases the validity and reliability of the findings.

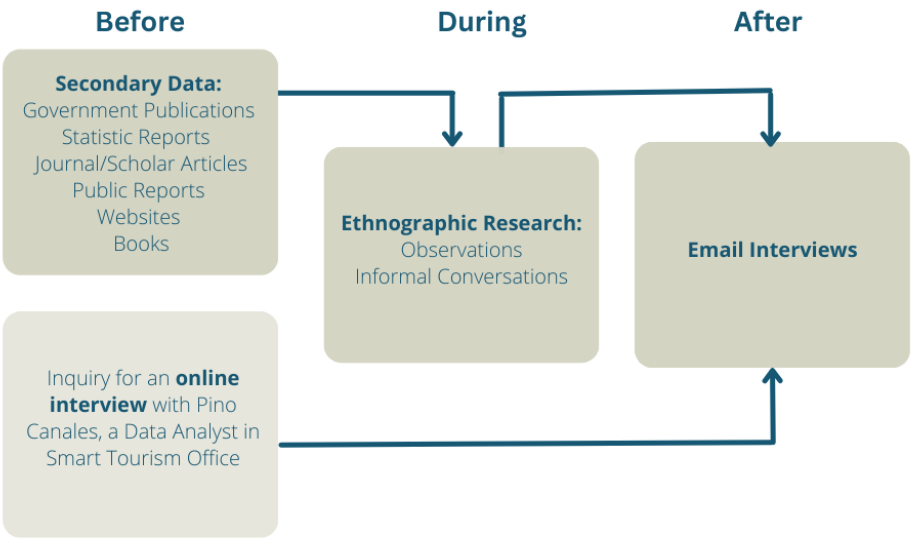


Figure 6 Data Collection Methods Used in This Case Study During the Three Stages of Ethnographic Research

4.4.1 Before Ethnographic Research

Ethnographic research, a qualitative data collection method, was employed in this research paper, including participatory observations, email interviews, and spontaneous conversations and the fieldwork took place in Seville, Spain, from March 23rd to March 27th, 2023.

According to Pink (2001), ethnography is a process of knowledge creation and representation based on ethnographers' personal experiences, aiming to present findings that faithfully reflect reality. Angrosino (2007) claims that ethnographic research can be conducted in any natural setting where people interact, relying on the researcher's ability to engage with people and observe their everyday behaviours. Ethnographic methods are particularly valuable when seeking others' opinions on specific issues or further defining a research problem.

While quantitative research is often conducted at the beginning of a research project to provide precise and objective data which are used to define a hypothesis, ethnographic research typically occurs later in the research process, allowing enough time to gather all the needed information before the research takes place (Angrosino, 2007). Therefore, following Angrosino's suggestion, the ethnographic research in this study was conducted in the later stages of the research process to gather the necessary information after initially collecting secondary data on various topics connected to smart tourism. O'Reilly (2012) also states that ethnographic research evolves throughout the study as it takes an iterative-inductive approach. This was also the case in this research project, when thanks to the data

collected during the fieldwork the problem area of the project became more defined. Roberts & Sanders (2005) argue that ethnographic research can be divided into three stages: before, during, and after the fieldwork. They emphasize the importance of recognizing and reflecting upon the dilemmas that arise at each stage, as they shed light on the theoretical significance of the research. Becker (1996) supports this view, suggesting that despite having very detailed planning, research designs evolve during execution, influenced by numerous decisions made during the research process. Therefore, the ethnographic research is further divided into the before, during and after stages, with each stage explained in detail.

The pre-fieldwork planning phase entails formalizing the research aim and agenda, planning different data collection methods, and gathering essential information about the research topic (Roberts & Sanders, 2005). Extensive desktop research was conducted as part of the pre-trip stage, involving the exploration of smart tourism, its development in Seville, the European Capital of Smart Tourism Initiative but also other topics such as Open Data, Big Data and the use of Innovation and Communications Technologies (ICTs) in tourism. In this phase, the research relied on secondary data sources, including books, journals, research papers, official websites of destination management organizations in Seville, public tourism statistics, and government reports. These sources contributed to a deeper understanding of smart tourism and its development in Seville and provided new perspectives. However, they also generated additional uncertainties and questions, therefore, to address these gaps, the researcher initiated contact with the destination management organization of Seville, specifically Pino Canales, a data analyst at the Smart Tourism Office in Seville to conduct a semi-structured online interview. During this stage, the project's focus had not yet been fully established, thus, engaging with the destination management organization in Seville was expected to help to develop a more refined problem area. The objective of the in-depth online interview was to address the questions that arose during the desktop research and to gain insights that could contribute to a more clearly defined problem area for the research project. Pino Canales was contacted via email, providing a brief introduction about the researcher, and the research aims, and offering the option to conduct the interview online using Teams as due to the researcher's limited time in Seville, an in-person interview was not feasible. However, in the end the interviewee found email interviewing as a more preferred way. Therefore, it is further explained below in section 4.4.1. Email Interviewing.

4.4.1.1 Observations

Another data collection method that was planned before the fieldwork stage was observed. Participant observation, as described by (Baker, 2006), involves actively participating in activities, asking questions, observing interactions, and interviewing informants to gain a deeper understanding of the studied phenomenon.

Given the lack of a clear focus in the planning phase before the fieldwork, except for the broad theme of exploring Seville's journey towards becoming the European Capital of Smart Tourism, the researcher decided to observe all four categories that are taken into consideration when awarding the European Capital of Smart Tourism. To guide the observation process and identify specific areas of focus, the researcher created a list of key elements that helped to guide the observations during the fieldwork. These key elements were based on the two main sources: the report published by the European Commission titled "Leading examples of smart and sustainable tourism practices in Europe 2023", where the European Commission shares how the winning cities achieved each category. However, because each category includes only one best practice, the information from the official website of Seville Smart Tourism Capital (Seville Smart Tourism Capital, n.d.) that includes more information on each of the categories was used. These sources helped the researcher gain a deeper understanding of each category and establish the key elements to observe during the fieldwork.

However, it is important to note that not all aspects of each category could be directly observed, such as *"Smart Destination scientific and technical conferences with the local tourist ecosystem aimed at analysing and sharing the keys, trends, and challenges in the field of smart tourism"* (*Digitalisation – Seville Smart Tourism Capital*, n.d.) or various projects that are still in the developing phase. Therefore, the researcher identified and focused on the observable elements within each category, which are described below and illustrated in Figure 7.

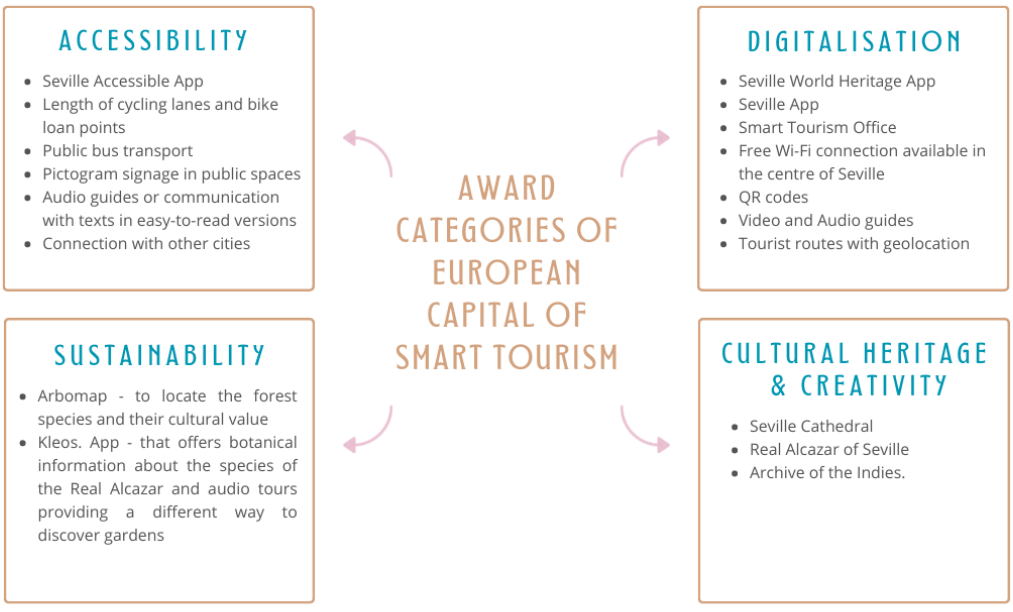


Figure 7 Key Elements That Were Observed During the Field Trip in Seville

By using participant observation and aligning the observation process with the identified key elements, the researcher aimed to gather insights into Seville's smart tourism development and how it aligns with

the European Capital of Smart Tourism criteria. However, as the research progressed, the researcher was able to observe occurring patterns, specifically that the use of digitalization an innovative solution was not present during the field trip as it was described in the public reports and on the websites of Seville. (Baker, 2006) referred to this as funnel stages of observations, in which the researcher's attention is narrowed down into elements that kept occurring the most during the observations. Therefore, this was the turning point in this case study when the focus of the project was narrowed down to only innovation and digitalization.

Moreover, not only did the problem area become more defined, but the researcher also changed the role in the participant observation. Because of the growing suspicions regarding the use of smartwashing practices, the researcher chose to adopt the role of a complete participant, immersing herself fully in the observed setting and interacting with others as a regular tourist, without acknowledging the research agenda to others (Angrosino & Rosenberg, 2011). This type of observation raises ethical concerns, however, they are further described in chapter 4.8. Ethical Considerations.

4.4.2 During Ethnographic Research

While thorough planning before the field trip is crucial, especially when time is limited during field trips, an essential aspect of conducting ethnographic research is being open and ready to learn new and unexpected information, which may lead to the generation of new data (Ingold, 2014). Due to the limited time available in the field, the researcher decided not to plan interviews but rather to be open to engaging in spontaneous informal conversations whenever new questions arose during the field trip. Throughout the field trip, as the ethnographic research progressed, the researcher used various digital tools such as daily headnotes, photographs, and videos to record observations objectively and descriptively, while setting aside personal preconceptions as suggested by Angrosino (2007) who highlights the importance of taking notes in a way that facilitates information retrieval in ethnographic research. A detailed description of the notes from the ethnographic research can be found in Appendix B.

4.4.2.1 Informal Conversations

Swain & King (2022) argue that informal conversations are an under-used method in qualitative research which can often add more information to different formal types of data. They further argue that informal conversations, as compared to interviews, have the potential to provide a deeper understanding of individuals' experiences, perceptions, and values by mitigating the power dynamics between the researcher and the respondent. Bernard (2002) characterizes informal conversations as natural conversations, while Patton (2002) views them as unstructured interviews. However, for this

paper, these conversations will be referred to as informal conversations, given that they were not pre-planned, and the true purpose of the conversations was not disclosed to the respondents. The informal conversations took place primarily in restaurants and one hotel, where the researcher engaged in discussions with local waiters and hotel staff. The purpose of these conversations was to gain insights and perspectives from local stakeholders, particularly from the hospitality and tourism businesses, regarding the development of smart tourism in Seville. However, in some cases due to the limited English language skills of the employees, it was not possible to get information that would be useful to this research project. Furthermore, additional informal conversations were held with staff at tourist information offices to gather information on how tourists can actively participate in digitalization initiatives in Seville. Although the English language skills of these staff members were satisfactory, their knowledge and understanding of smart tourism were limited. As a result, the researcher decided to contact local businesses via email, considering it might be a more preferred method for them to respond to questions in English.

In addition to observations and informal conversations, the researcher employed an experiential approach, actively engaging in various tourist activities, including audio-guided tours. This experiential participation facilitated a deeper understanding of tourists' digital experiences (Lee & Ingold, 2020).

4.4.3 After Ethnographic Research

In the after-ethnographic research stage, data analysis typically takes precedence as the primary task for researchers (Roberts & Sanders, 2005). However, due to encountered limitations during the field trip, particularly the participants' limited English proficiency during informal conversations, the researchers decided to engage with additional stakeholders through email interviews to gather more data. During the process of data analysis, as multiple findings emerged, new questions arose, therefore the researcher initiated email interviews with even more stakeholders. By engaging with a wider range of individuals, the research aimed to gather additional insights and perspectives to address the emerging questions.

4.4.3.1 Email Interviewing

According to Dahlin (2021), electronic research methods have gained significant popularity and relevance among researchers, particularly due to their potential resource efficiency and suitability for social sciences and humanities studies where in-person methods may not always be ideal.

Although email interviewing has been increasingly used in qualitative studies (Meho, 2006; Berger & Paul, 2011; Curasi, 2001), offering benefits such as efficiency, especially when dealing with geographically dispersed samples, and reduced transcription time, it also presents various challenges.

One such challenge is the lack of discussion on strategies for effectively using electronic research methods in qualitative studies (Airoldi, 2018; Caliandro, 2017).

For this reason, it is essential to reflect on why electronic research methods were used. In this report, the initial reason was the interviewee's preference for email interviewing. Moreover, due to language limitations encountered during the field trip, in-person interviews were not feasible. Another challenge highlighted by Meho (2006) is that as the duration of an interview with a participant increase, the likelihood of frustration on both sides also rises. During the email interview in this study, the response time from the interviewee's side was seen as a challenge as it kept prolonging and the researcher did not get answers before the field trip but after it ended. Additionally, the interviewee responded in Spanish, and therefore, the researcher used an online translation tool to translate the answers into English. However, it is possible that some words may have been lost in translation and thus the translation is not 100 percent accurate. It is also crucial to mention that the most significant challenge faced during email interviewing was the lack of further responses despite sending two follow-up emails. This challenge has been previously expressed by multiple researchers (Deakin & Wakefield, 2014; Seitz, 2016), especially in cases when the researcher and participant have never met in person (Lo Iacono et al., 2016).

Dahlin (2021) argues that email interviewing is necessary in certain research contexts, as in some cases it represents a more suitable option than a traditional in-person method of conducting interviews, due to the study's objective or the nature of its participants. This was also the case in this report, where the plan was to interview local businesses in the tourism industry, such as hotels and restaurants, during the visit to Seville, to gain insights into stakeholders' perspectives on smart tourism development. However, due to limited English language skills, respondents were unable to answer the interviewer's questions. Meho (2006) explain that e-mail interviewing is often used in situations when participants cannot express themselves as well in talking as they do in writing, which might be because of a lack of English proficiency or academic knowledge. Therefore, following Dahlin's (2021) suggestion, the decision was made to conduct email interviews after the field trip. The researcher contacted 10 hotels found through a Google search, 2 UNESCO tourist attraction sites, and 5 tour companies in Seville. In total, 17 local businesses were contacted to find out stakeholders' opinions on smart tourism development in Seville, specifically regarding its impact on their business models, their level of engagement in pilot projects, and the use of the Open Data portal on the smart.sevillacityoffice website. Despite sending follow-up emails to each contact, only one response was received.

After completing the field trip and analysing the findings, additional questions came up. The researcher contacted the European Commission, the umbrella organization of smart tourism development

responsible for the development of the European Smart Tourism Capital initiative. Additionally, Sebka Technology, an IT services and solutions company, was contacted as their insights on technology solutions in Seville were crucial to the project.

While it is often argued that only in-person methods can be used to gather in-depth and trustworthy data (Lo Iacono et al., 2016), Dahlin (2021) suggests combining email interviewing with exploratory interviewing, which is unstructured and intended to develop ideas and research hypotheses. This approach was also implemented in this research project, where informal conversations during the field trip served as a form of exploratory interviewing. Dahlin further emphasizes the need to take electronic research methods more seriously as a viable option for generating qualitative in-depth data (Dahlin, 2021). Other authors have also emphasized the equivalence of email interviewing to traditional in-person methods (Deakin & Wakefield, 2014; Weller, 2016) as they can generate rich qualitative data (McCoyd and Kerson, 2011; James, 2016). It is crucial to mention that email interviewing was not a strategy designed from the beginning of the study, but rather an outcome of multiple methodological decisions made during the study to generate in-depth qualitative data. All the data gathered through email interviews can be found in Appendix.

4.5 Sampling Methods

The snowball sampling method, also known as network sampling, was used to identify a contact person responsible for overseeing smart tourism development in Seville. This approach is often used when it is challenging to access samples with the desired characteristics and the choice relies on referrals (Naderifar et al., 2017). Due to the difficulty of finding online contact information for the person responsible for smart tourism development in Seville, the researcher reached out to Carola Valls, the Promotion & Marketing Coordinator at Visit Benidorm in Spain. This contact had previously been established as Carola had delivered a presentation at Aalborg University on the development of smart tourism in Benidorm. Pino Canales, a data analyst at the Smart Tourism Office in Seville, was recommended for an in-depth online interview.

According to Gill (2020), qualitative researchers often use more than one sampling approach, which was also the case in this study. To contact local businesses, the researcher used a purposive sampling method, which involves the researcher's judgment to evaluate who is the right candidate for the sample (Robinson, 2014). The main criterion was to contact local tourism and hospitality businesses, and a Google search was conducted to identify hotels, tour operators, and tourist attraction sites. The establishments that appeared in the search results and had available email contacts were then approached. The same purposive sampling method was used to contact Sebka Technology, a company providing IT services and solutions. The researcher intentionally selected this participant as the

company had developed a virtual reality solution in Seville, which required further exploration as explained in the analysis section of this research paper. The European Commission was also chosen through purposive sampling, as the objective was to engage with the umbrella organization that could provide insights into the requirements for becoming the European Capital of Smart Tourism. Figure 9 provides an overview of the local businesses' approach during spontaneous conversations conducted in Seville during the field trip and also of stakeholders who were contacted for email interviews. Those stakeholders who responded to the inquiries are highlighted in green colour.

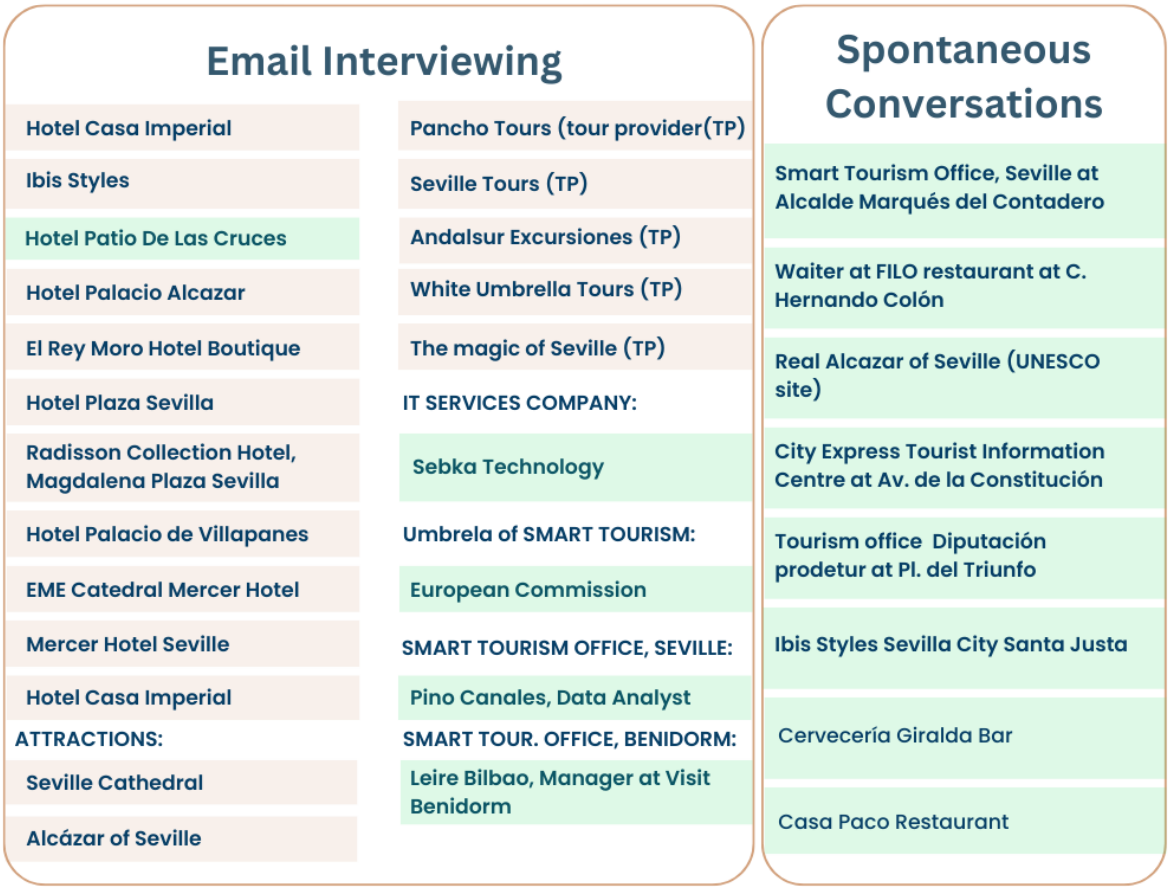


Figure 9 Overview of Contacted Stakeholders for Email Interview and Local Businesses That Researcher Engaged With During the Field Work

Both snowball sampling and purposive sampling fall under the non-probability sampling technique, which involves selecting individuals based on non-random criteria, where not every individual has an equal chance of being included. This sampling technique is commonly used in exploratory and qualitative research to gain a better understanding of a specific topic (Taherdoost, 2016). And while there are few guidelines to determine the appropriate sample size in qualitative research (Sim et al., 2018), the number of interviewees may be low, however, this was due to limitations encountered during the research process, such as limited English language skills and non-responses from contacted participants, indicating a lack of willingness to invest the necessary time in sharing their experiences.

Moreover, as mentioned above Walsh (2015) argue that sample sizes are irrelevant in qualitative studies, as the main aim is to get an in-depth understanding of a small number of participants rather than to test the hypothesis.

4.6 Data Analysis

Data analysis is a crucial step in qualitative research as it allows researchers to derive meaning from the collected data. Unlike quantitative research, qualitative research involves the collection of non-numerical data such as images, texts, or audio and video recordings, which can pose challenges for analysis using traditional statistical techniques. Therefore, in qualitative research, data analysis entails a process of examining, categorizing, and interpreting data to identify recurring themes and patterns (Lester et al., 2020).

While there is no single correct approach to analysing qualitative data, thematic analysis is widely regarded as an overarching method for identifying patterns in qualitative data (Braun and Clarke, 2019). It has been used in various fields, including tourism research (Costa et al., 2016). Thematic analysis is particularly suitable for analysing textual data, and in this study, it was used to analyse the headnotes from ethnographic research and the data obtained from email interviews. Lester et al. (2020) describe thematic analysis as a nonlinear and often messy process, where the specific steps may evolve. However, providing an overview of each step in thematic analysis shows transparency for both the researcher and the reader. In this study, the thematic analysis was conducted based on Lochmiller and Lester's (2020) guide, illustrated in Figure 10 which outlines seven steps: preparing and organizing the data, transcribing the data, familiarizing with the data, memorizing the data, coding the data, generating categories and themes from the underlying codes, and ensuring transparency throughout the analysis process.

Figure 10 Steps of the Thematic Analysis Applied to This Research When Analysing Data

The first step involved preparing headnotes from the observations and informal conversations gathered during the fieldwork. Since the researcher recorded headnotes on a smartphone, this step required transferring all the notes into a Word file. Similarly, the email interview data also needed to be transformed into a Word file. However, as this research did not involve face-to-face interviews, data

transcription was unnecessary. Therefore, in the second step, the researcher reviewed the data again, to ensure proper structure and inclusion of all names, addresses, and dates of places visited during the fieldwork. The following two steps were connected, as the researcher re-read the data to familiarize herself with it and tried to memorize them. Lester & O'Reilly (2021) emphasize the importance of this step, as it helps the researcher become aware of gaps in the collected data and can inspire further data collection. This was also relevant in this case study, as the researcher discovered insufficient data from local stakeholders due to limited English language skills. Which inspired the adoption of the next data collection method.

The next step involved coding the data itself, with colour coding being the chosen approach in this research. Sentences, words, or paragraphs were highlighted using specific colours and during the process of assigning codes, the researcher made sure to ensure their alignment with the study's focus. In step five, the researcher identified similarities and differences between each code and based on that, merged them into categories. These categories are broader compared to the codes. However, due to numerous similarities, they were further assigned specific themes that represented the underlying categories. However, because some codes didn't occur many times, they were left out and were not assigned any category or theme, specifically codes sustainability, budget and benefits of smart tourism development. Furthermore, during the process of assigning codes and categories, the researcher identified specific theoretical frameworks that could guide the analytical process of this study; therefore, the final themes were created based on these frameworks.

In the final step, to enhance transparency in the analytical process, Figure 11 was created to illustrate the initial codes generated during the thematic analysis and how they were merged into categories and themes. This visual representation allows readers to understand the researcher's key analytical choices (Anfara et al., 2002). Moreover, the complete process of colour coding can be found in Appendix B and Appendix D to provide even greater transparency. Finally, the findings resulting from the thematic analysis of the email interviews and ethnographic research notes are further presented and discussed in the analysis section of this report, along with the theoretical framework, in a narrative way.

Codes	Categories	Themes
Understanding of Smart Tourism	New Tourism Model	Smart Tourism Ecosystem
New Tourism Model	New Tourism Model	Smart Tourism Ecosystem
Stakeholders Involvement	Stakeholders	Smart Tourism Ecosystem
Budget		
Innovative Projects Focusing on Sustainability	Digitalization	Technology Enhanced Destination Experiences
Challenges in Smart Tourism Development	Digitalization	Technology Enhanced Destination Experiences
Benefits of Smart Tourism Development		
Digital Technology Used in Smart Destinations	Digitalization	Technology Enhanced Destination Experiences
Cultural Heritage and Creativity		
Digitalization and Innovation	Digitalization	Technology Enhanced Destination Experiences
Sustainability		
Accessibility	Accessibility	Smart Tourism Ecosystem
Marketing Initiatives	Marketing	Technology Enhanced Destination Experiences

Figure 11 Codes, Categories and Themes Generated During the Thematic Analysis Process

4.7 Validity and Reliability

In research, the concepts of validity and reliability play a critical role in ensuring the accuracy and consistency of the results. Validity refers to the degree to which data measures what it is intended to measure, while reliability refers to the consistency and stability of data over time and across different conditions. While these concepts have been traditionally associated with quantitative research, Morse (1999) argues that they are also applicable to qualitative research.

However, Lewis (2009) stated that the traditional definitions of validity and reliability, rooted in positivist perspectives, may not be entirely suitable for qualitative research. Golafshani (2015) supports this view and suggests that qualitative researchers often employ alternative concepts such as audibility, dependability, credibility, and transferability to ensure the trustworthiness of their findings. Campbell et al. (2020) proposes that data trustworthiness can be achieved through the verification of raw data. Noble and Smith (2015), on the other hand, suggest several strategies to enhance the trustworthiness of qualitative research. These strategies include accounting for researchers' personal biases that can influence findings, engaging in ongoing critical reflections on methods and the relevance of data collection and analysis, maintaining detailed records to ensure accurate interpretation of data, and employing data triangulation techniques. Furthermore, Mayan (2016) emphasizes that systematic coding and detailed transcription methods can be used to enhance the validity and reliability of qualitative data generation. By employing these strategies, researchers can ensure the trustworthiness of their qualitative research findings.

In this study, several strategies were employed to ensure the accuracy and trustworthiness of the data as proposed by Noble and Smith (2015). Firstly, standardized methods for data collection were used to minimize errors and maintain consistency. These methods were chosen based on their established validation in previous studies, such as conducting interviews, observations, and analysing secondary sources as the most used qualitative data collection methods in case studies (Rashid et al., 2019). Additionally, ongoing critical reflections on the methods used and the relevance of data collection were conducted throughout the research process.

The second strategy involved using multiple sources of data to triangulate the findings and enhance validity as suggested by Noble and Smith (2015). Therefore, ethnographic research, observations, email interviews, and spontaneous conversations were used as data collection methods. These diverse sources of data were triangulated with secondary data to strengthen the validity of the findings as represented in Figure 12. Additionally, email interviews and informal conversations were conducted with various stakeholders from the tourism industry, addressing the same topic over different time periods, to further enhance data triangulation.

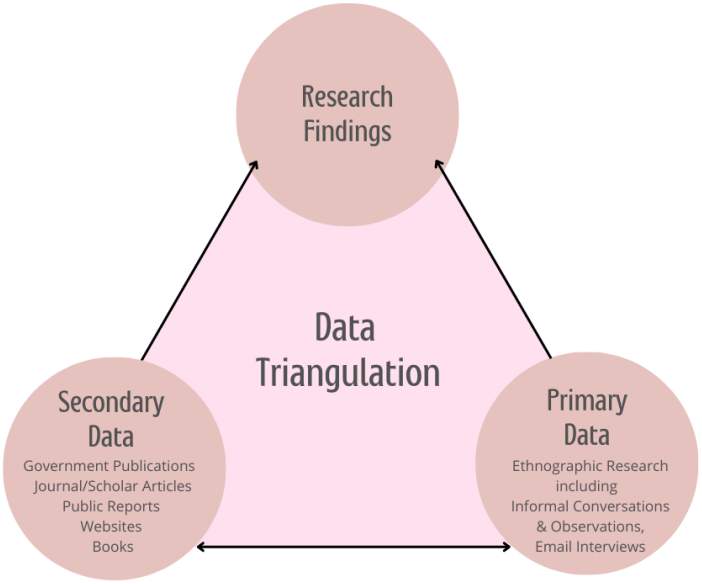


Figure 12 Data Triangulation Based on Multiple Data Sources Approach Applied to This Research

The third strategy is the potential influence of the researchers' personal biases on the findings was acknowledged and addressed in the limitations section of this research. Transparently acknowledging and accounting for these biases contributes to the overall validity and reliability of the study. Lastly, systematic coding and detailed transcription of the raw data were employed as suggested by Campbell et al. (2020) and Noble and Smith (2015). The coding process was conducted thoroughly, and the transcriptions are available for verification in the Appendix.

These practices were undertaken to ensure the validity and reliability of this research paper. By implementing these strategies, this study aimed to strengthen the validity and reliability of the findings, ultimately enhancing the trustworthiness and the quality of the research as suggested by Healy and Perry (2000).

4.8 Ethical Considerations

Ethical considerations play a crucial role in guiding research designs and practices by providing a framework of principles. These principles include various aspects, including voluntary participation, informed consent, anonymity, confidentiality, the potential for harm, and communication of research results (Angrosino & Rosenberg, 2011).

In the case of this study, all participants who were contacted for email interviews were fully informed about the research project, its objectives, and the intended uses of the gathered data, as recommended by Guillemin & Gillam (2004). However, it is important to note that participants engaged in informal conversations were not provided with this information. The decision to withhold this information stemmed from the researcher's suspicion of smartwashing practices and the decision to adopt the role of a complete participant in participant observation. In this role, the researcher fully immersed herself in the observed setting and interacted with others as an ordinary tourist, without acknowledging the research intentions.

Miller and Bell (2002) argue that participants should never feel that they participate in a study against their will at any point during their involvement. Considering this argument, it can be argued that the approach taken in this study may raise ethical concerns. However, it is important to highlight that no confidential information, such as participants' names, was disclosed at any point during the research process.

4.9 Limitations

The study encountered several limitations that should be acknowledged. One significant limitation was language proficiency. Most of the governmental and public online documents related to smart tourism development, smart destinations, and smart cities in Spain, including sources like the Plan 8 Turismo Sevilla, SEGITTUR's report on Smart Tourism Destinations, and Seville Digital Agenda 2030, were only available in Spanish. All of these documents include important information to better understand a clear picture of the smart tourism agenda in Seville and Spain. Considering that each of these documents had to be translated with an online tool meant that they might have influenced the accuracy of translation and therefore information provided in this research.

Additionally, during the field trip to Seville, limited English proficiency was another challenge. This limited the researcher's ability to conduct in-depth interviews with local stakeholders in tourism. As a result, alternative methods such as email interviews were used instead of face-to-face interactions. However, the response rate from the stakeholders was very low, even to email interviews, even though follow-up emails were sent to all participants.

It is important to note that while the use of email interviews and informal conversations with a limited number of stakeholders may be seen as limitations, these choices were made in consideration of the study's specific research objectives. The aim was not to provide a representation of all local stakeholders' perspectives but rather to explore the extent of their engagement in smart tourism. To ensure the validity and trustworthiness of the findings, multiple data sources were combined, and critical reflection on the methods and relevance of data collection was employed.

To summarize, the main limitations of this study include the low response rate to email interviews, the limited English language proficiency encountered during the field trip, and the reliance on Spanish-only public reports.

5 Analysis

This section includes the analysis of primary data collected for this study, along with a critical examination of relevant secondary data sources. Considering the focus of this project on innovation and digital technologies, the analysis is specifically focusing on two out of the four categories for which the European Capital of Smart Tourism is awarded, namely accessibility and digitalization as digitalization plays a big role in both and observations of these two categories provided the key findings for this research project. While digitalization was also present in the sustainability category, it proved to be a less observable element as it included many pilot projects that are still in the implementation phase and therefore could not be observed. Therefore, the analysis is divided into two parts accessibility and digitalisation, and it draws upon two theoretical frameworks: the concept of the smart tourism ecosystem and the model of technology-enhanced destination experiences. This division allows for a more comprehensive examination of the data and presenting of critical findings. In the end, the conclusion is based on the key findings of both parts and serves as a basis for further discussion.

5.1 Accessibility

According to the European Commission accessibility is not only about the infrastructure and how physically and psychologically accessible the destination is for the travellers with special needs, but it also incorporates digitalization and multilingualism. However, because the focus of this project is

digitalisation and innovation, this analysis will further look at digital accessibility only. The following text is detailed information on what European Commission means by this category:

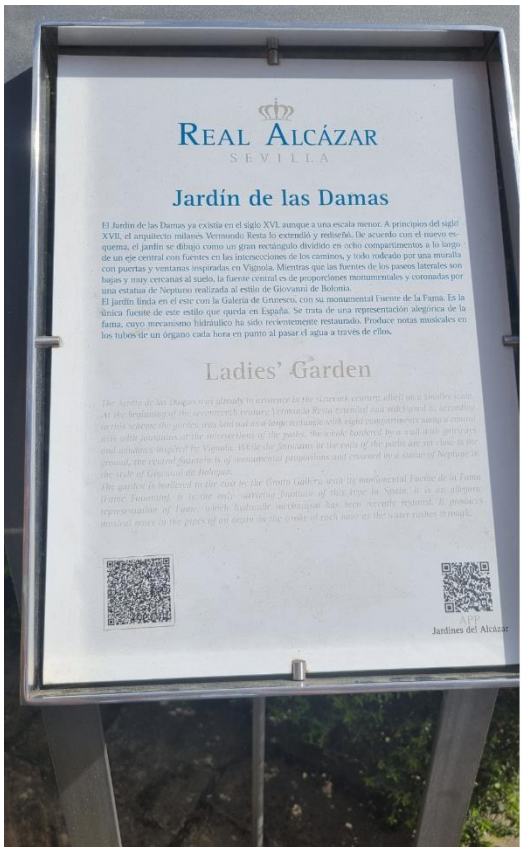
> „Explain if your city is physically accessible to travellers with special access needs, regardless of age, their social or economic situation and whether they have disabilities or not. Being accessible means being easily reachable by different means of transport and with a strong network in and around the city. How accessible is your city – by car, train, plane, and bike? Beyond the infrastructure, are your tourism services accessible to all? Please describe whether you are a barrier-free destination for – as an example – people in a wheelchair, with mobility challenges, families with strollers, etc. Furthermore, tell us what your infrastructure looks like! Your restaurants, museums, and walking tours – is information available in multiple languages? Is the service staff multilingual? Is there a street guidance routing for blind people? How accessible are your tourism services for people with mental disabilities, people hard of hearing, parents with young children, the elderly, etc.? Describe your services, activities, exhibitions, and attractions and tell us whether they allow everyone – regardless of disabilities – to participate. Also, do not forget to tell us how accessible your booking systems, websites and services are – they are a part of it all. Do you offer multilingual information? Are the websites/apps user-friendly and intuitive? " *(*Guide for Applicants 2024*, 2023)*

Based on the *Guide for Applicants document, all the cities applying to be part of the* competition for the European Capital of Smart Tourism need to share best practices in implementing innovative and intelligent solutions in all four categories (*Guide for Applicants, 2022*). The following information was shared by Seville as a best practice example in the accessibility category:

> *"Navigation and Accessibility for Smart Tourism The "Seville Smart Accessibility Tourist & Events" is an innovative project supported by the Spanish government and the European Union to improve accessibility, and urban space management through the use of ICT-based actions. This project uses GIS technology and AI tools for the management and decision-making processes behind the recommended spaces and routes between attractions. All this information is shared with citizens and tourists through the SEVILLE ACCESSIBLE app. This app (multi-platform and multi-language) combines information on accessibility and mobility in real time with tourist information allowing for greater awareness and insight into how crowded a public space is, being able to plan accessible itineraries, have updated tourist information*

and knowing the status and situation on the use of unsure road conditions. " (European Commission, 2023)

During the field trip, the researcher wanted to explore the features of the Seville Accessible App but discovered that the application was not functioning. It is important to note that the researcher attempted to access this application even before arriving in Seville, however, while the app is available on Google Play. Once it is downloaded it doesn't function. Nonetheless, the researcher tried to use it upon arrival in Seville again, however, the app was still not to working. Furthermore, despite trying multiple phones and a computer the researcher was unsuccessful in accessing the application. To find alternative applications promoted on the official tourist website visitsevilla.es, such as the Seville App, Arbomap, and Kleos.App. Compared to the Seville Accessible App, these apps were not even available on Google Play. Furthermore, Kleos.App was even advertised in Real Alcazar, encouraging visitors to download the app through QR codes. However, when the QR code was scanned, the app could not be found on Google Play, as shown in Figure 13.



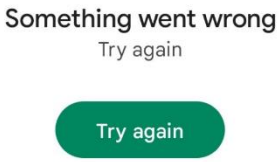


Figure 13 Pictures Taken During the Field Trip in Seville

To investigate the reasons behind the mobile applications' failure and determine if a solution could be found, the researcher visited three different tourist information centres in Seville. It is important to highlight that even the employee of the Smart Tourism Office, responsible for smart development in

Seville and expected to know about technology and digitalization, acknowledged that the Seville App had not been functioning for a considerable time. Additionally, the employee was unaware of the existence of other applications. Furthermore, it is worth noting that two employees at a different tourist centre were not aware that Seville had been awarded the title of Smart Tourism Capital 2023. In fact, they mentioned that Seville had been awarded a few years ago, which is indicating a lack of knowledge and engagement of employees in smart tourism development.

This was also experienced in other four hospitality establishments, while attempting to gather insights into local businesses' engagement in smart tourism development, the researcher visited FILO restaurant, Ibis Styles Hotel, Cervecería Giralda Bar, and Casa Paco Restaurant. In each case, the employees were lacking knowledge regarding the concept of smart tourism. Furthermore, after the field trip, the researcher tried to gather more information through email interviews with 17 local businesses from the tourism and hospitality sector, however, received only one response. Making it a total of six stakeholders representing businesses within the tourism field who were not aware of smart tourism. This experience raises the important topic of the involvement of different stakeholders in the co-creation of smart tourism.

As Buhalis (2000) suggests, tourism destinations are complex ecosystems that require collaboration among stakeholders to create economic, social, and environmental value for all. Although information and communication technologies (ICTs) have been recognized as essential tools for improving the tourism experience, the added value for tourists in smart destinations depends on the interaction between human stakeholders (Vargo, 2011). Boes et al. (2016) and Mistilis et al. (2014) emphasize the importance of involving various stakeholders, including tourists, residents, national governments, destination management organizations (DMOs), tourism intermediaries, and businesses engaged in the co-creation of smart tourism. However, how can the stakeholders of Seville be engaged in the co-creation of smart tourism, if they are not even aware that Seville became the Smart Tourism Capital of 2023?

According to Gretzel et al., (2015), the cooperation of stakeholders who take advantage of smart technology and information sharing for the creation of tourism experiences is referred to as a smart tourism ecosystem. This ecosystem consists of a variety of "species", rather than stakeholders including touristic consumers, residential consumers, tourism suppliers and support services such as telecommunications or payment services. A core function within the smart tourism ecosystem is the collection, processing, and exchange of tourism-relevant data (Liu et al., 2017). Compared to the tourism ecosystem, the smart tourism ecosystem focuses on a shared goal or purpose related to the production and consumption of touristic value by creating meaningful and sustainable tourism

experiences (Buhalis & Amaranggana, 2015). This is when a digital ecosystem comes to play as it provides technological resources in the form of smart technology and facilitates interactions within species, collects data and allows sharing between various species (Piro et al., 2014). Data serves as the primary source for the stakeholders, and the effective conversion of this data into rich tourism experiences can prolong the life of stakeholders, in the form of successful businesses. It is important to note that the roles of stakeholders are continuously changing, and new species can emerge at any time due to the use of ICTs, such as the emergence of couch surfing and Airbnb, which have changed interactions between touristic and residential consumers (Gretzel et al., 2015).

Based on this information and collected data, two main findings were revealed. Firstly, it was discovered that despite Seville's promotion of the Seville Accessible App as an innovative project and a best practice example in the European Capital of Smart Tourism competition's accessibility category, this application, along with other promoted applications, is non-existent. Therefore, Seville not only fails to provide the digital solutions that are essential to smart tourism destinations but also shares misleading information with the European Commission.

The second finding arose during visits to tourist information centres, revealing that the employees were uninformed about the mobile applications and unable to provide assistance or answer questions related to smart tourism. This lack of knowledge was even evident in the employee of the Smart Tourism Office, which is responsible for digitalization and technology. These observations highlight the importance of improving communication between the destination management organization and tourism businesses, as well as increasing awareness among tourism personnel about key initiatives and developments taking place in their city. The development of a smart tourism ecosystem as suggested by Gretzel et al. (2015), facilitated by a digital ecosystem and the effective use of data, is essential for the co-creation of meaningful and sustainable tourism experiences in Seville.

Figure 14, presented below, provides a schematic representation of the smart tourism ecosystem in Seville, as proposed by Gretzel et al. (2015). It emphasizes the importance of improving stakeholder involvement and cooperation in the co-creation of smart tourism, as this is crucial for the success of smart destinations. However, it is important to note that the implementation of a digital ecosystem is also crucial for the development of successful smart tourism destinations. Therefore, the next section of the analysis focuses on digitalization, aiming to offer a comprehensive overview of how Seville uses information and communication technologies (ICTs) to develop smart tourism. This section will identify the components involved in Seville’s digital ecosystem and explore its role in the context of smart tourism.

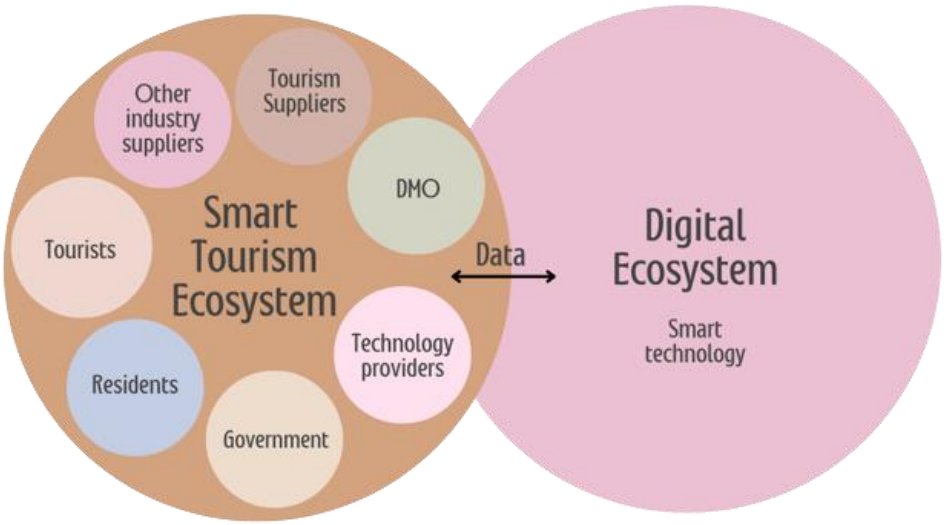


Figure 14 Smart Tourism Ecosystem Framework Proposed by Gretzel et al. (2015) Applied to Seville

5.2 Digitalization

Digitalization has been defined by the European Commission as the city's support for the development and use of digital skills and tools by tourism businesses. The following information was shared by European Commission as a description of digitalization:

> *„Being a digital tourism city means offering innovative tourism and hospitality information, products, services, spaces and experiences adapted to the needs of the consumers through ICT-based solutions and digital tools. Are you providing digital information about your destination, its attractions and tourism offers? Is your information on public transport, attractions and accommodation digitally accessible, or even integrated? Do businesses have a digital-friendly environment to grow in? Are you supporting tourism businesses in the development and use of digital skills and tools? Do you use digital solutions for enhancing innovative tourism offers?" (*Guide for Applicants 2024*, 2023)*

Neuhofer et al. (2012) argue that the use of ICTs in the tourism industry reveals major paradigm shifts, specifically increased changes in the tourist experiences in all stages of the travel cycle, and tourists taking an active part in the co-creation of experiences with tourism suppliers, tourists, and other consumers in physical but also in a virtual environment. Similarly, Vargas-Sánchez (2018) states that innovation and technology have influenced the profile of travellers to be hyper-informed, multi-channel and independent with high expectations for personalized services, authentic experiences, and unlimited digital connection. Binkhorst & Den Dekker, (2009) stated that destination management organizations need to acknowledge the need of the new type of tourists, change their strategies accordingly, and involve tourists in the co-creation of experiences (Autio & Thomas, 2020). For this

same reason, to meet the needs of a new type of traveller SEGITTUR's "Tourist Destinations Report: Building the Future" (2015) outlines the necessary actions that destinations in Spain need to take to adapt and evolve the new type of a travel cycle, to improve interaction between tourists and the destination. King (2002) emphasizes that there is a need for destination management organizations to change their strategies not only to adapt to the new type of travellers but also to involve them in co-creating destination experiences. Similarly, Richards & Raymond (2000) suggest that destinations need to become more creative and offer new ways for how tourists can actively participate in the co-creation of experiences.

Based on this information, the researcher paid close attention to how digitalization supports tourism services. The technology-enhanced destination experiences model developed by Neuhofer et al. (2012) was used to analyse the extent to which the destination involves tourists in the co-creation of experiences throughout all three stages of the travel cycle.

5.2.1 Pre-travel Phase

In the initial phase of the travel cycle, SEGITTUR recommends that destinations serve as sources of inspiration by providing access to a wide range of structured information in various digital formats, such as text, images, audio, videos, and infographics, about the destination (SEGITTUR, 2015). Similarly, Neuhofer et al. (2012) argue that the pre-travel phase is critical because tourists seek inspiration and interact with the destination for the first time. During this phase, the researcher observed that all information on hospitality or tourism services can be accessed online, such as details on UNESCO sites, opening hours, prices, or menus for restaurants and cafes. The option of purchasing an entrance ticket for UNESCO sites online is an example of how digital access to information enhances tourist experiences and saves time. The availability of this information and the option to purchase tickets for various tourist sites online, not only influenced the decision-making process of the researcher as a tourist but also the overall itinerary.

Moreover, Gretzel and Jamal (2009) conclude that social media, YouTube, and TripAdvisor provide tourists with an opportunity to experience the destination through the eyes of other consumers even during the pre-travel phase. Therefore, the researcher also decided to use social media channels as a source of inspiration in the itinerary planning process. However, even though the researcher found a lot of inspiration and valuable information online, Huang et al. (2017) emphasize that destinations should use all the opportunities that technology brings and provide immersive virtual environments that can help engage tourists in the co-creation and enhance tourist experiences before their journey even begins.

5.2.2 On-Site Destination Stage

During the second phase, which is the travel itself, smart mobility comes into play, and travellers have access to technology and applications that can enhance their tourism experiences and increase their flexibility. Being connected and interacting with other tourists online can result in more informed on-the-spot decisions (SEGITTUR, 2015).

At this stage, it is relevant to look at the best practice example that Seville shared with the European Commission in the category of digitalization as it was specifically designed to improve tourist experiences during the on-site destination stage.

> *„The Seville World Heritage portal allows tourists and residents alike to experience the world heritage sites in Seville in a digital and barrier-free environment. The portal offers rich descriptions of the world heritage site, the types of architecture and the historical context of all 187 patrimonial elements of the site and its 8 surrounding districts. In doing so the city is transporting its historic heritage into a digital space that enables greater access to the information and a virtual space for cultural communication to transpire. In addition, visitors can now engage with the Alcazar of Seville in a digital format as it has been given a complete 3D reconstruction allowing for AR and VR engagement. This is part of the complete digital transformation of the World Heritage sites in Seville that are aimed at allowing further accessibility, insight, and interest in the storied history of the city." (European Commission, 2023)*

The following website was added to this information (sig.urbanismosevilla.org). On the website, the user can choose to see three UNESCO sites and the surroundings of Seville. After clicking on for example Cathedral, the pictures of how the cathedral looks from the inside are shown. However, it is questionable whether creating a website where all the pictures are collected in one place can be called *„[...] The portal that transports the historic heritage into a digital space that enables greater access to the information and a virtual space for cultural communication to transpire [...]“ (European Commission, 2023)* as it provides the same experience as seeing images on the internet. Moreover, the website does not include any description of each of the sites even though according to the best practice text the website offers *„[...]rich descriptions of the world heritage site, the types of architecture and the historical context of all 187 patrimonial elements [...] “(European Commission, 2023).*

Another very interesting statement is the *„[...]complete 3D reconstruction allowing for AR and VR engagement[...]“ (European Commission, 2023).* Nowhere on the official website of Royal Alcazar is the site stating its 3D modelling, augmented reality, or virtual reality. During the field trip the researcher

asked about the possibility of experiencing virtual or augmented reality and as expected, the employee answered that the site does not offer any of it. After conducting a Google search and attempting to find relevant information, the researcher discovered the website destinationsinteligentes.es, run by SEGITTUR. This website includes information to help cities in Spain to become more competitive and improve the quality of life of residents by focusing on five key areas of action: governance, innovation, technology, sustainability, and accessibility. The website includes AR, VR, and 3D reconstructions of the Royal Alcazar in Seville as a good practice example of a pilot project developed in collaboration with Vodafone and Red.es. However, while Seville's best practice example states that visitors can now engage with the Alcazar in AR and VR engagement, the best practice shared by the SEGITTUR refers to the future development of these realities, see Figure 15 (Smart Tourist Destinations, 2023).

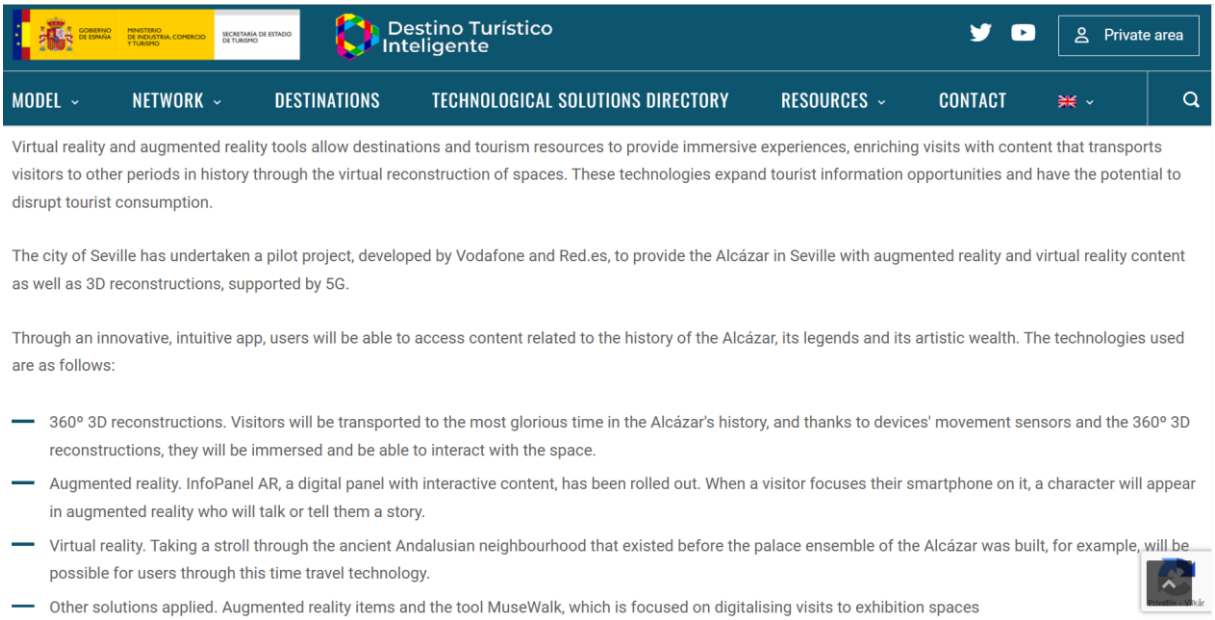


Figure 15 Screenshot of the Good Practices, Source: Destinationsinteligentes.es

Upon conducting further investigation, it was discovered that the virtual reality tour of the Real Alcazar Palace is provided by Sebka Technology, a company that specializes in technological and management solutions. As a result, the researcher decided to contact Sebka Technology to get additional information on the development of the virtual reality experience at the Alcazar, who answered the following:

> *„Our technology solution in Alcazar is not available in any app. It is only accessible to our clients once they are in Seville since 2020. It consists of a succession of VR and AR content. It is possible to have a historical virtual guide to visit one of the parts of the palace and walk through VR through spaces that have disappeared today at the same time that you walk through the real monument today. " (Sebka Technology, Appendix F)*

Sebka Technology's response revealed that their technology solution for Alcazar was specifically created as a paid offering for their customers, and it is not a service provided directly by Alcazar. It is worth noting that Sebka Technology is located in a different place, separate from the Alcazar. Furthermore, during the field trip, the researcher was unable to find any signs or advertisements of similar solutions being offered at the Alcazar itself.

In the process of analyzing various documents such as SEGITTUR's report on Smart Tourism Destinations, Seville Digital Agenda Strategy, Plan 8 Strategy, pilot project reports, and the website Seville-smart tourismcapital.eu, it became apparent that the information provided is quite general and lacks specific details. This inconsistency can be observed, for example, in the case of the best practice example mentioned regarding the Real Alcazar. Additionally, different documents often contain different information, as seen in the above-mentioned case of the Real Alcazar. This lack of consistency challenges the secondary data analysis process and raises concerns about potential smartwashing.

Moreover, Baralla et al. (2021) argue that transparency is a crucial aspect of smart tourism, particularly regarding the implementation of technology. However, in the case of Seville, it is the complete opposite. The information related to smart tourism initiatives is difficult to find, which makes the process of analysing secondary data time-consuming and the lack of transparency raises suspicions of smartwashing.

According to the European Commission's Guide for Applicants, European Commission reserves the right to conduct checks, audits, and investigations related to the award, in collaboration with the European Anti-Fraud Office (OLAF) and the European Court of Auditors. In light of this information, the researcher wanted clarification from the European Commission via email, seeking answers to three questions. Firstly, whether the cities participating in the competition are required to present practices that have already been implemented, or if they can include examples of future projects. Secondly, whether the European Commission conducts checks or audits during the evaluation process of the competition each year. Lastly, whether the presentations, which form part of the second evaluation stage for shortlisted cities, are made publicly available. The response received from the European Commission was as follows:

> *"The cities are asked to share practices that are already in place and are encouraged to share metrics or KPIs that prove the effectiveness of these practices. For the past competitions, the European Commission did not carry out checks or audits. And the presentations are not available to the public." (European Commission, Appendix G).*

These findings require further reflection on the transparency and accountability within the evaluation and selection process of European cities applying for the award. According to the European

Commission's definition, a smart tourism capital is a destination that facilitates access to tourism and hospitality products, services, spaces, and experiences through ICT-based tools, while also implementing innovative and intelligent solutions that foster the development of entrepreneurial businesses and their interconnectedness. Looking at this description, it is debatable why the European Commission does not place greater emphasis on examining the extent to which destinations use ICTs to support their tourism offerings (*Guide for Applicants 2024*, 2023).

Furthermore, as part of the evaluation process for the European Capital of Smart Tourism award, the finalists are required to present their plans for using the title of the "European Capital of Smart Tourism" in promotional activities and to improve the city's reputation as a tourism destination. This presentation should outline the added value that the title would bring in positioning the city as a tourism destination and attracting tourists from third countries. Additionally, it should elaborate on how the title would contribute to fostering smart tourism development within the city and how the city would engage other European cities in promoting smart tourism and best practices (*Guide for Applicants 2024*, 2023).

The title of European Capital of Smart Tourism offers numerous benefits to the recipient, including expert communication and branding support for promoting the destination through media and online channels, a city centre sculpture, a promotional video showcasing smart tourism practices, and various other promotional actions from the EU aimed at raising the city's profile and increasing visitor numbers (European Capital of Smart Tourism, n.d.).

All of these marketing practices can further lead to an increased number of tourists, which was also the case in Valencia, another Spanish city that became the European Capital of Smart Tourism in 2020 (Appendix D). Therefore, it is crucial to consider what if the increasing number of tourists leads to over-tourism, which is opposite to sustainability and smartness. Coca-Stefaniak (2019) also argues that many of the global smart tourism cities face over tourism such as Barcelona, Venice, and Amsterdam. Bouchon and Rauscher (2019) further argue that the branding strategies of destinations can have a major impact on over tourism. However, this can be prevented by effective leadership from destination management organisations (Eckert et al., 2019) grounded in a clear competence framework for the DMOs (Jamieson & Jamieson, 2019) and effective decision-making based on real-time data and trends.

These findings challenge the objective of this initiative as it should focus more on assisting destinations in developing ICT solutions to become more sustainable, rather than emphasizing only its marketing efforts. Furthermore, it also questions the assumption of whether winning cities prioritize the genuine implementation of smart tourism practices or if their commitment to smart tourism is only a part of their marketing strategy. These observations call for further examination of Seville's motivations and

commitment to smart tourism, highlighting the potential for smartwashing in its marketing efforts, which is seen as a misrepresentation and part of commercial propaganda in the context of smart city development (Basiri et al.,2017).

Shifting focus away from the above-mentioned best practice example, additional noteworthy observations were made during the field trip. The researcher's objective was to take part in all activities that include Information and Communication Technologies (ICTs) and are available to tourists. In addition to the non-existent AR, VR, and 3D reconstructions of the Royal Palace Alcazar, as well as numerous mobile applications, the researcher noted that QR codes are very present in the service industry throughout Seville. These codes are often used instead of traditional menus at restaurants, as indicators of opening hours on doors of hospitality establishments, on billboards around the city, as well as on bus tickets among other uses. Several examples of QR codes are illustrated in Figure 16.

Figure 16 Photos Taken During the Field Trip to Seville Representing the QR Codes

Dickinson et al. (2014) state that QR codes, or quick response codes, have become a popular tool for data accessibility and marketing strategy. They can be found on advertisements, restaurant menus, and product information (Cox and Shiffler, 2014), and can be used to make purchases, access additional

information online and for location-based services (Shin et al., 2012). The use of QR codes in the hospitality and tourism industry can enhance customer experience such as using QR codes in hotels instead of traditional check-in methods can reduce wait times and improve the overall customer journey. However, the most common use of QR codes is still for linking to websites to provide more information about products and services. This view is supported by Dickinson et al. (2014) and Kerry-Bedell (2012), who argue that QR codes can improve the tourist experience and also provide more information about their interests.

In Seville, QR codes were mostly used to access additional information. Figure 17 below provides an example of how the trash can featured a QR code that, when scanned, provided detailed information about the proper sorting of trash.

Figure 17 Pictures Taken During the Field Showing an Example of How the QR Codes Are in Seville to Provide Additional Information

However, it was observed that many QR codes were not functional, raising concerns about their maintenance and access to tracking data. As highlighted by Brabazon & Winter (2014), QR codes enable companies to gather various data about their users. Each time a QR code is scanned, the company can

obtain information such as the user's geolocation, time and date of scanning, average time spent on the site, the total number of scans, and the country of origin (Meydanoğlu,2013; Brabazon & Winter, 2014). This data can be then used to measure the effectiveness of marketing campaigns, gaining insights into demographic information and consumer behaviour (Meydanoglu, 2013). However, when QR codes are not functional, it suggests a lack of maintenance, indicating that the company might be unaware of this issue and potentially not using the data that could be generated through QR codes.

SEGITTUR has proposed several technological solutions for the development of smart tourist destinations, with QR codes being one of them. The fact that SEGITTUR recognizes the benefits of QR codes is evident from their proposal. However, it raises questions as to why Seville does not prioritize the proper functioning of QR codes, especially considering that it is one of the few digital solutions they offer to tourists.

> *„These pixelated squares are matrixes of dots or two-dimensional barcodes that link to a specific web address, loaded with strategic information when brought into contact with reader applications on mobile devices. Their use in the tourism sector has skyrocketed, as they allow a quick and easy interaction between the tourist and the destination and are highly appropriate for enriching information panels and promotional material, facilitating billing processes and loyalty campaigns, etc." (SEGITTUR, 2015)*

Other solutions suggested by SEGITTUR for incorporating ICTs into cities and transforming them into smart destinations include Big Data, Open Data, Geolocation systems, Video Mapping, Mobile Applications, Free Wi-Fi, and a 21st-century tourist information office.

The 21st-century tourist information office in Seville, described by SEGITTUR as a new concept with a strong technological base, was visited by the researcher. The office was expected to have touch screens and encourage the download of destination tourist apps, provide georeferenced resources, and offer personal advice to visitors on mobile applications linked to the destination. However, the researcher found that the only technological element available at the office was free Wi-Fi as shown in Figure 18. The touch screen and mobile application recommendations, which were anticipated to be fundamental components of the 21st-century office, were not present, which is also considered misleading information.

Figure 18 Picture Taken During the Field Showing the Smart Tourism Office in Seville

Mobile applications are expected to work as solutions for tourists, providing real-time information and enabling destinations to collect user data (SEGITTUR, 2015). Despite their promotion on official tourist websites, these applications were not available, nor were video mapping tools which could have enriched cultural experiences. Free Wi-Fi connection was available in the Smart Tourism Office and at the airport, but not accessible in the city centre despite promotional signage. Additionally, geolocation systems were expected to facilitate visitors in locating points of interest.

While it was observed that QR codes are used in Seville to enrich tourist experiences and help destination management organizations gather valuable user data, further implementation of other technological solutions is necessary to enhance the digital transformation of tourist destinations. These solutions can help to improve the tourist experience and facilitate data collection for destination management organizations. This is also supported by Buhalis and Amaranggana (2015) who state that to enable smart tourism, it is necessary to use a suitable technological platform that efficiently integrates information from local natural and cultural resources and tourist activities, and at the same time with the use of ICTs, allows tourists and tourism service providers to collaborate in the co-creation of tourism experiences (Schaffers et al., 2011; Buhalis and Amaranggana, 2015).

In addition to these technological solutions, Big Data and Open Data have also been suggested as effective tools for destination management organizations (SEGITTUR, 2015). Big Data refers to large sets of data that exceed the capacity to understand, store, manage and analyse compared to standard data (McKinsey Global Institute, 2011). SEGITTUR, for instance, suggests implementing Big Data platforms to provide fundamental value in obtaining and managing knowledge for destination management. The analysis of Big Data can generate competitive advantages in areas such as

governance, security, mobility, health, customer relationship management, decision-making support, and knowledge of tourist preferences (SEGITTUR, 2015). Seville has been using Big Data for multiple pilot projects to improve sustainability in the city, and according to Pino Canales, one of the most innovative projects is the “Analysis and management of tourist flows in the Santa Cruz neighbourhood”.

> *"The Santa Cruz neighbourhood is an area of Seville through which thousands of tourists pass every day and is the heart of monumental Seville. For this reason, the coexistence between residents and visitors has been affected by the high impact of tourism. For this reason, we have launched this initiative in collaboration with the companies Galgus and Bosch. We are measuring the tourist flows in this delimited area through Wi-Fi sensors and optical sensors, to which we will soon add the data from the telephone operators' antennas. We already have some sensors working and they are producing data that is then transformed into real-time information that can be consulted through a digital twin that we have created. This pilot project, which will then be applied in these areas of the city, will allow us to make decisions on the fly to redirect these flows to other areas and improve the coexistence between neighbours and tourists. The same sustainability that we apply when we promote other areas of the city to redirect these flows." (Pino Canales, Appendix D)*

Pino further added La Macarena and Triana neighbourhoods as an example, where a collaborative effort is underway between residents and shopkeepers to promote the unique cultural and tourism attractions of these areas. This is how the city tries to redirect the visitor traffic away from the highly trafficked areas around the Cathedral and the Real Alcázar towards other regions, thereby allowing the benefits of tourism to be distributed more evenly throughout the city. However, despite Pino's mention of these pilot projects, no further details or specific actions that need to be taken to fully develop these projects could be found online. The researcher attempted to seek clarification through a follow-up email but did not receive a response. This lack of information and transparency regarding the specific actions taken in these projects is concerning. Transparency is a critical component of smart solutions, as emphasized by Gelter et al. (2022) and Baralla et al. (2021). It is essential to openly share information rather than keeping smart solutions isolated, ensuring accountability, and enabling stakeholders to understand the initiatives and their impact.

Moreover, Big Data can also provide value beyond the business sector, benefitting the wider public through Open Data. Providing public access to Big Data can enhance transparency and citizen participation, while also creating business opportunities for companies in the sector (Ardito et al., 2019). According to Pesonen and Lampi (2016), Open Data has enormous potential to foster innovation

in tourism and enhance destination management. The European Commission has also encouraged the use of Open Data as part of its digital agenda for Europe (European Commission, 2011). This approach recognizes the potential for reusing public data to create new products and services, developing innovative solutions, improving efficiency through data sharing between public administrations, and boosting citizen participation in political and social life. Such initiatives also promote governmental transparency. In addition to using Big Data, Seville has developed an Open Data system as part of its digitalization efforts, called Seville Tourism Intelligence System (SIT).

According to the Smart Seville City Office (2023) website, the Smart Tourism Intelligence System (SIT) is supported by a Business Intelligence model. This model collects, transforms, analyses, and visualizes data, which is then used for strategic planning through predictive and diagnostic analyses, aiming to enhance urban management. However, to be critical of the information that is included on the website, there is a lack of specific steps or actions explaining how the collected data is used to achieve the above-mentioned results.

Additionally, the SIT provides data on various categories such as tourist accommodation, air connectivity, air passenger arrivals, tourism sustainability, visitor perception, and behaviour. Each category includes a detailed description of data collection, analysis, sources, and update frequency (SIT - Smart Seville City Office - EN, 2023). However, it is missing information on how this data is used and whether it is used by local stakeholders, the researcher asked for insight from Pino Canales, whose response was once again very generic, stating:

> *"The Tourism Intelligence System was created as a viewer of open data from different sources that, when combined, offer us a complete picture of tourism in the city. We offer this data so that companies and administrations can take it into account when drawing up their strategies and making decisions, and for the public, it is an exercise in transparency. We organise conferences in the Smart Tourism Office Agora with companies and representatives of institutions not only to provide them with the SIT data but also to train them to be able to take advantage of each of the panels that make it up. In these conferences, we illustrate how they can use this information when implementing their strategies and policies. But our main task is to share knowledge and promote Data Governance." (Pino Canales, Appendix D)*

Based on Pino's generic response, it becomes evident that there is a lack of specific data on how many companies use the Open Data portal. While Pino mentioned training companies on using the data, she failed to provide further details or examples. This raises doubts about the practical implementation of Big Data and Open Data. It questions whether the creation of this portal was only to say that Seville is

using new technologies and data and wants to be portrayed as smart, which aligns with the researchers' suspicions of smartwashing.

Moreover, to better understand the usage of Open Data by various stakeholders, the researcher visited several hospitality establishments during the field trip in Seville. However, due to language barriers, the interactions were limited. Therefore, after the field trip, 17 different tourism businesses, including 10 hotels, 2 UNESCO sites, and 5 tour providers, were contacted via email. Unfortunately, despite sending follow-up emails to all 17 businesses, only Hotel Patio De Las Cruces responded. They stated that they do not use intelligent tools in the management of their hotels, except for the handling of reservations through Wubook (Hotel Patio De Las Cruces, Appendix E).

Despite the implementation of Seville's Tourism Intelligence System (SIT) and its smart practices, not all tourism stakeholders may be aware of its benefits. This was experienced during the researcher's visit to the tourist information centre, where employees were unaware that Seville had been awarded a Smart Tourism Capital. This highlights the need for greater awareness-raising efforts to ensure that all stakeholders have access to relevant information and resources.

During the researcher's interview with Pino Canales, a data analyst in the Seville City Office, the question of whether Open Data poses any challenges was raised. Canales responded that the biggest challenge is presenting data in a way that is easy to understand for anyone accessing the SIT portal. This challenge stems from the complexity of the data. She further added that SIT is a dynamic tool that is open to suggestions from both responsible tourism sector authorities and users alike, and she invites users to contribute to its continuous improvement (Pino Canales, Appendix D).

Based on this information it can be seen that while solutions such as Big Data, Open Data, Geolocation systems, Video Mapping, Mobile Applications, Free Wi-Fi, and 21st-century tourist information offices are recommended by SEGITTUR for destinations to become smart, the implementation of many of them is not fully developed in Seville. Big Data and Open Data are part of digitalization efforts that are used as tools for destination managers and other tourism providers to improve a destination's sustainability. However, it is apparent that despite Seville's claim of using Big Data and Open Data to improve tourism in the city, there is a lack of specific examples or actions that would support these statements.

Furthermore, it was shown that Seville does not effectively use ICTs to engage tourists in the co-creation of experiences. Apart from the use of QR codes, which redirect users to websites for additional information on specific products or services, no other solutions are provided to improve tourist experiences. Additionally, the effectiveness of QR codes as a tool for data collection by destination management organizations and their contribution to the digital transformation of tourist destinations

is questionable, considering that many QR codes were non-functional. This further supports the suspicion of smartwashing, as Seville's use of QR codes appears to be an easily implemented solution, rather than a meaningful tool for DMOs or to improve tourist engagement in the co-creation of experiences. According to Binkhorst & Den Dekker (2009), the starting point for destination management organizations (DMOs) to become smart is to recognize tourists and their role as producers of destination experiences.

5.2.3 Post Travel Stage

Looking at the last phase of the travel cycle, post-travel, it is considered critical mainly because travellers share their experiences and opinions, which can significantly impact the destination's image. This phase is seen as challenging for destinations as it is often difficult to monitor and track what is being said about destinations, their products, and services. To address this challenge, SEGITTUR recommends the development of interactive communication apps to gather feedback and improve the destination's offerings continuously (SEGITTUR, 2015).

Pantano et al. (2017) have a different approach to how destination managers can use user-generated content including reviews and comments posted on social media channels and online review platforms. Because all this information is publicly available and generates Open Data, it provides access to information that can change the decision-making process of tourists.

In Seville's Open Data portal SIT, the city presents data on visitor perception and behaviour. The data is shown through the Global Tourist Perception Index which represents the level of visitor satisfaction with various aspects of the destination, such as hotels, products, safety, and climate. The data for this index is provided by Mabrian Technologies, a travel intelligence services company that specializes in analysing tourism trends. Mabrian collects data from social media channels, as recommended by Pantano et al. (2017), with a focus on tourist mentions on Twitter and Instagram. This data allows Mabrian to provide insights into how tourists perceive the destination, their behaviour, and also user data such as gender and place of origin, which is captured from public information on user profiles (Percepción Y Comportamiento Del Visitante - Smart Tourism Office, 2023). Moreover, by analysing user-generated content online, destination managers can gain insights into the strengths and weaknesses of their destination's image and improve their offerings to meet tourists' needs (Pantano et al.,2017). Gretzel and Yoo (2008) also suggest that travel review websites, such as TripAdvisor, play an important role in sharing experiences, recommendations, and suggestions in the post-travel stage, co-creating future holiday experiences for former tourists.

In conclusion, destination managers should prioritize the post-travel phase of the travel cycle since it significantly impacts a destination's image. To address the challenge of monitoring and tracking user-generated content, interactive communication apps can be developed to gather feedback and improve the destination's offerings continuously. Furthermore, analysing user-generated content can provide valuable insights into how tourists perceive a destination, which can be used to improve offerings and branding strategies and enhance the overall tourism experience. Seville's use of data from social media channels to gain user insights is a step in the right direction, although it is not clear how this data is further used for the development of Seville as a smart tourism destination.

Based on the analysis conducted, Figure 19 was developed to illustrate the application of the technology-enhanced destination experiences model proposed by Neuhofer et al. (2012) within the context of Seville.

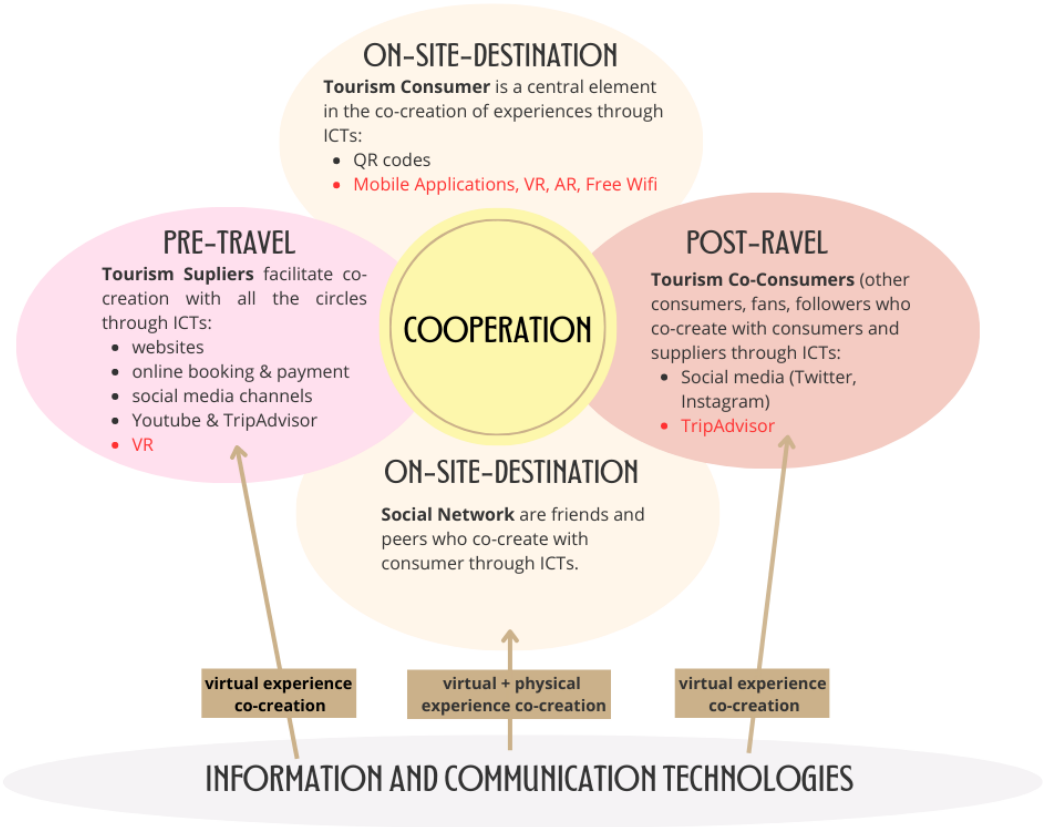


Figure 19 Technology Enhanced Destination Experiences Model Proposed by Neuhofer et al. (2012) Applied to Seville

Figure 17 showcases how digitalization is used by Seville to enhance tourism experiences across all three stages of the travel cycle. Furthermore, the highlighted solutions in red provide recommendations for Seville on how to further integrate technology, both for enhancing tourist experiences and to be used as a tool for DMOs.

6 Discussion

During the analysis of the findings, several unexpected discoveries emerged. As a result, this discussion will be divided into two parts. The first part will address the findings related to smartwashing practices, while the second part will provide an answer to the research question of this paper.

6.1 Smartwashing

The analysis of the findings revealed concerns regarding the reliability of the European Commission's award and the potential of smartwashing practices in smart tourism destinations. Smartwashing refers to the misuse of the term smart for marketing purposes, where the actual benefits may be non-existent (Basiri et al., 2017). The misleading information on Seville's website and in the best practice examples provided to the European Commission positions Seville as a smart destination, potentially indicating smartwashing. Moreover, concerns were raised regarding the evaluation process conducted by the European Commission, as it appears that thorough checks and audits were not carried out, suggesting their potential involvement in smartwashing practices. These statements are supported by factual evidence, including email correspondence (Appendix G).

Furthermore, the analysis revealed several other concerning practices. Firstly, the lack of detailed information provided on Seville's website and in its documents describing pilot projects and the use of digitalization and technology raised doubts. The Smart Seville City Office (2023) website claims that their Open Data is used for strategic planning through predictive and diagnostic analyses to improve urban management, but specific steps or actions explaining how the collected data is used are not mentioned. Moreover, when asked to provide specific examples, Pino Canales, a data analyst in the Smart Tourism Office in Seville, provided generic answers, which further supported suspicions of smartwashing. As argued by Gretzel et al. (2015) and Buhalis and Amaranggana (2015) Big Data are crucial to both generating new business opportunities and services and to analysing patterns and trends in user behaviour, which can be used for improving tourism services and enhancing the overall tourist experience, however, in case of Seville there is no direct proof showing how Big Data is used.

Additionally, the use of QR codes in Seville, which only redirects users to websites for additional information on specific products or services, often did not work during the field trip. QR codes can be valuable tools for data collection by destination management organizations, measuring the effectiveness of marketing campaigns, and contributing to the digital transformation of tourist destinations (Dickinson et al., 2014; Kerry-Bedell, 2012; Brabazon et al., 2014; Meydanoğlu, 2013). However, if the QR codes are non-functional, their effectiveness as data collection tools becomes questionable, reinforcing the suspicion of smartwashing.

Another significant finding was the low engagement of local stakeholders, particularly local businesses, in smart tourism. Conversations with employees of local businesses revealed their limited knowledge about smart tourism, indicating the presence of smartwashing practices. This finding aligns with the study by Devine-Wright and Davies (2023), which highlights the lack of stakeholder involvement in smart city development. Despite claims of collaboration with local businesses and citizens by Pino Canales (Appendix D), stakeholders contacted during the field trip were unaware that Seville had become the European Capital of Smart Tourism 2023, raising concerns about the lack of strategy to involve all stakeholders. Citizens and stakeholders involved in smart tourism development need to ask critical questions to prioritize their needs and avoid smartwashing as suggested by Anand (2021).

6.2 How Do Innovation and Digital Technologies Enable Smart Tourism in Seville, the European Capital of Smart Tourism 2023?

To answer this question, the technology-enhanced destination experiences model by Neuhofer et al. (2012) and the smart tourism ecosystem by Gretzel et al. (2015) were used to answer the research question of this case study. Figure 20 was created to illustrate the digital ecosystem of Seville showing how Innovation and Digitalization are used in Seville to enable smart tourism during the three stages of the travel cycle.

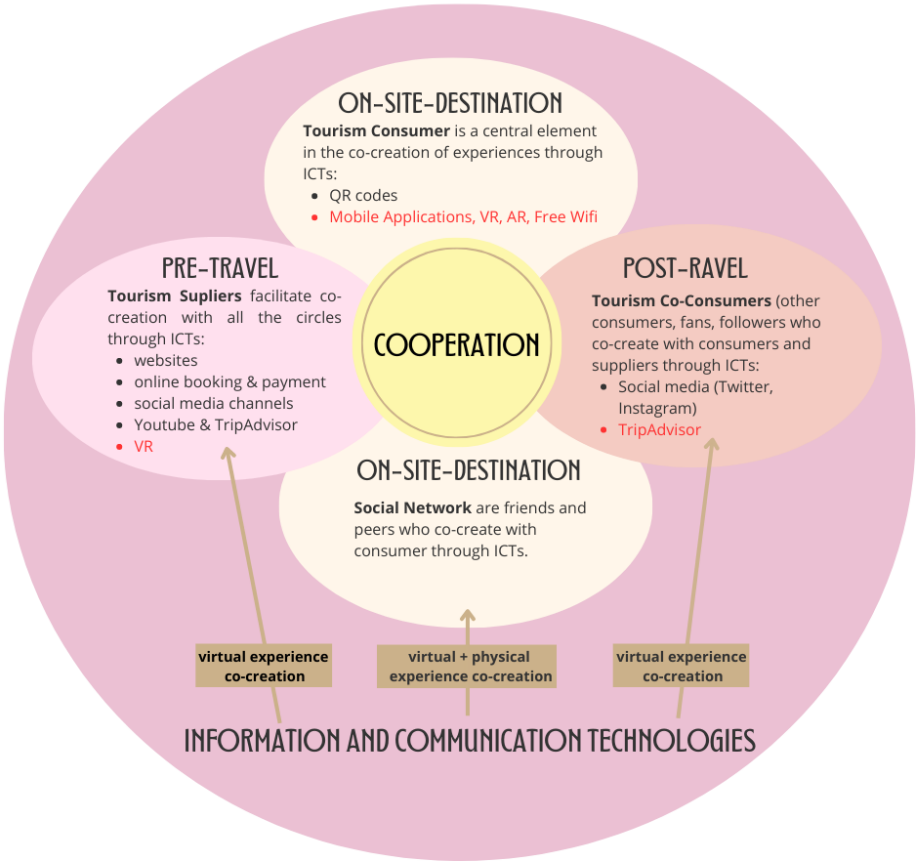


Figure 20 Digital Ecosystem of Seville Showing How Innovation and Digitalization Is Used to Enable Smart Tourism During the Three Stages of Travel Cycle

During the pre-travel stage, the co-creation of virtual experiences takes place as tourism suppliers collaborate with various stakeholders through platforms such as websites, online booking and payment options, social media channels, YouTube, and TripAdvisor. To enhance the experiences further, it is recommended that Seville develop virtual reality (VR) offerings as suggested by Huang et al. (2017). This phase is crucial as it allows destinations to use technology to create immersive virtual environments, co-creating with consumers and enhancing their experiences even before their journey begins (Huang et al.,2017).

In the on-site stage within the destination, the tourism consumer becomes actively involved in the co-creation of both virtual and physical experiences. Currently, Seville offers limited information and services through information and communication technology solutions such as QR codes. Despite mentioning other solutions on the official destination management organization websites, such as mobile applications, VR, augmented reality (AR), and free Wi-Fi, these technologies are not available in the destination itself. However, their implementation is suggested to improve tourism experiences and enable data collection from tourists, as recommended by Eiben & Smith (2003), emphasizing that digital ecosystems focus on the interaction between technology, databases, programs, and information flow that contribute to the smart tourism ecosystem. This stage is particularly important as it allows destinations to interact with tourists physically and virtually, reaching new levels of interaction (Green, 2002).

In the final post-travel stage, tourists who have already visited Seville continue to contribute to the co-creation of virtual experiences by sharing their own experiences on online channels. Seville uses social media platforms as a means of evaluating tourist experiences, but it is recommended that they also consider using TripAdvisor as a source of data. Additionally, the development of a mobile application, as suggested by SEGITTUR, would serve as a valuable resource for both tourists and tourism management. Overall, by adopting a comprehensive approach that embraces digitalization and involves tourists in the co-creation process, Seville can enhance its tourism offerings and ensure a more engaging and satisfactory experience for visitors.

However, Gretzel et. al. (2015) argue that collaboration between the smart tourism ecosystem and the digital ecosystem is crucial for the development of smart tourism destinations. This is further supported by Buhalis and Amaranggana (2015) who state that smart tourism destinations are places where stakeholders are interconnected through technological platforms to collect, create, and exchange information, ultimately enriching sustainable tourism experiences in real time. Therefore, by adopting more ICTs to enhance the overall experience of tourists, Seville will not only benefit tourists but also

stakeholders through the gathered data, which can be used for further development of smart tourism. The effective use of technology in connection with human resources to promote sustainability and enhance the quality of life in smart tourist destinations is the goal of smart tourism (Pencarelli, 2020).

Therefore, even though this case study was focusing only on the use of digitalization and innovation, based on all the primary and secondary data, supported by the literature review, it is suggested that engaging stakeholders facilitated by the digital ecosystem and the effective use of data is essential for the co-creation of meaningful and sustainable tourism experiences in Seville and successful implementation of smart tourism as represented in Figure 21.

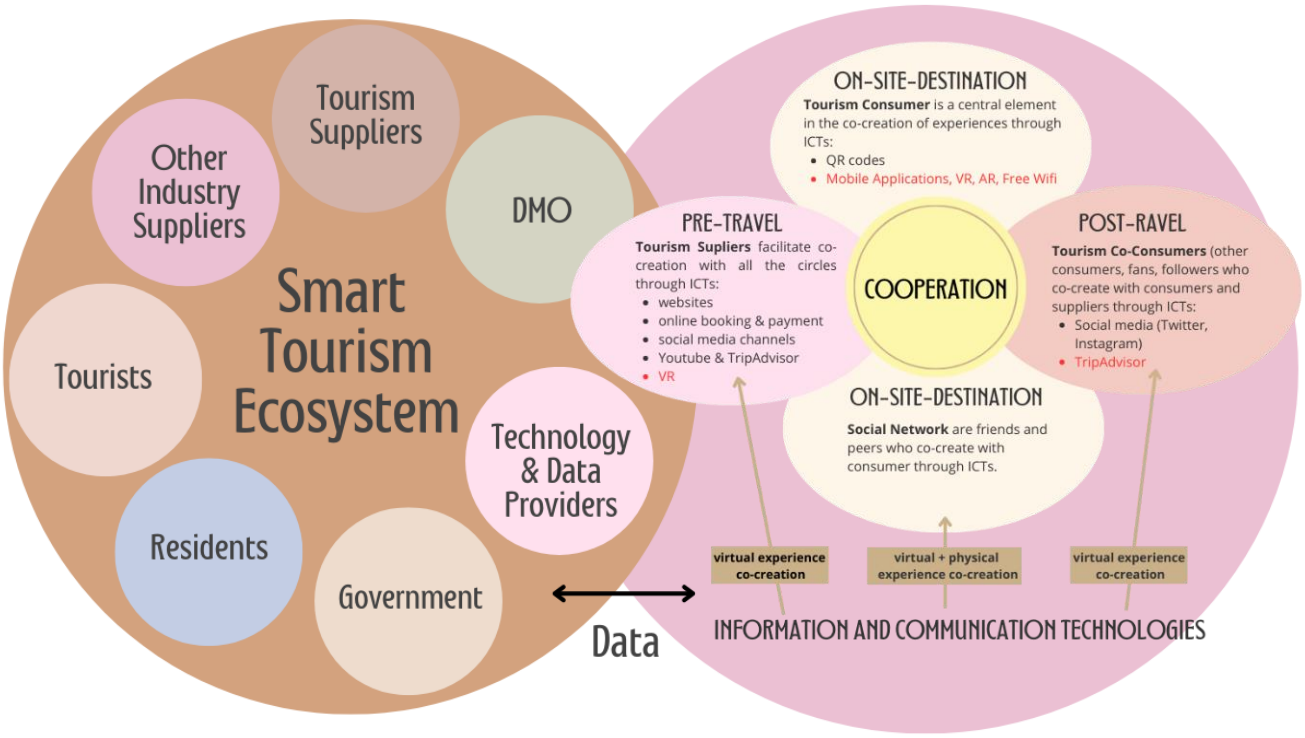


Figure 21 Smart Tourism Ecosystem And Digital Ecosystem Based on the Analysis of Smart Tourism in Seville

Additionally, the analysis indicated that digitalization and innovation in Seville are also used in multiple pilot projects focusing on enhancing sustainability in the city. Examples of these projects include the eCitySevilla initiative, aiming to transform the Cartuja district into a low-emission environment; the Horizonte Sevilla Inteligente project, focusing on making 264 public buildings smart and energy-sustainable; and the Qanat Cartuja Innovative Urban Action (UIA), which promotes the use of streets as social catalysts, improving the overall ecosystem of the city (Sustainability – Seville Smart Tourism Capital, n.d.). However, since these projects were still in the development phase during the field trip, it was not possible to observe them during the field trip. Additionally, given the amount of misleading

information shared from Seville's side and the lack of transparency, further research would be necessary to confirm the actual existence and progress of these initiatives.

7 Conclusion: How Do Innovation and Digital Technologies Enable Smart Tourism in Seville, the European Capital of Smart Tourism 2023?

This case study provided a comprehensive overview of Seville's efforts to achieve accessibility and digitalization to become the European Capital of Smart Tourism 2023. The European Commission's description of each category and the examination of Seville's best practices, which contributed to its selection as the awarded capital, were thoroughly analysed. The analysis critically explored the role of digitalization and innovation in enabling smart tourism in destinations, focusing specifically on the case of Seville. However, the findings of this analysis showed the underlying results, revealing that Seville falls short of fully engaging all stakeholders in the development of smart tourism. Insufficient attention is paid to tourists, and Seville fails to provide the necessary digital solutions required for a smart tourism destination, despite their promotional claims.

Furthermore, the city's promotional claims regarding its digital solutions and smart tourism practices raise concerns about the reliability of the information shared with the European Commission and the general public, highlighting the potential for smartwashing practices. The low engagement of local stakeholders, particularly local tourism businesses, and their lack of knowledge about smart tourism further contributed to the suspicion of smartwashing.

Moreover, to fully answer the research question of this project: How Do Innovation and Digital Technologies Enable Smart Tourism in Seville, the European Capital of Smart Tourism 2023? Seville uses innovation and digitalization in different stages of the travel cycle, however, there is room for improvement. The inclusion of tourists in the co-creation of tourist experiences and the use of platforms like TripAdvisor for data collection and feedback and implementation of different reality experiences are also recommended. Ultimately, the effective use of technology in connection with human resources and a focus on sustainability can enhance the quality of life in smart tourist destinations and enrich tourism experiences.

Finally, these observations call for further examination of Seville's motivations and commitment to smart tourism, highlighting the potential for smartwashing practices and it also questions whether winning cities prioritize the genuine implementation of smart tourism practices or if their commitment to smart tourism is only a part of their marketing strategy. Additional further research is suggested to reflect on transparency and accountability within the evaluation and selection process of European cities applying for the award of European Capital of Smart Tourism.

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9 Appendix

A. Pre-field trip planning of observations of four fundamentals of a smart tourism destination:

Accessibility

- pictogram signage
- audio guides or communication with texts in easy-to-read versions
- Sevilla accessible map
- Public bus transport connections
- length of cycling lanes, bike loan points and public bicycle promotion office
- wheelchair-adapted taxis

Sustainability

- **Kleos. App** that offers botanical information about the species of the Real Alcazar and audio tours providing a different way to discover gardens
- **Arbomap App** to locate the forest species and its cultural value
- **Qanat Cartuja.** promotes the use of the street as a social dynamist, improving and involving the entire ecosystem of the city
- **Horizonte Sevilla Inteligente:** Transformation of 264 public buildings into smart and energy-sustainable buildings (5M € investment)
- SmartSpace. Incubator + Smart Tourism Office

Digitalization and Innovation

- 21st-century tourist information (with touch screens, encourage tourist to download the app)
- Free Wi-Fi around the city
- Download the App and explore the city with its use: https://www.visitasevilla.es/en/history/seville-app
- QR Codes all around the city
- Video guides and audio guides
- Tourist routes with geolocation
- Personalized experiences in museums
- Preventive health: information on solar radiation, warning of danger in the event of high levels and risk profile
- Geolocation of nearby on-call pharmacies, drug information

- Video monitoring in tunnels, subways and unsafe areas
- Info Tourist Web- a comprehensive and modular management system to ease tourist management and management of destination information.
- Augmented Reality, Virtual Reality and 3D reconstruction of the Alcazar of Seville thanks to 5G connectivity. Through an App, the user will be able to access the contents related to the history of the Alcazar in an innovative and intuitive way.

Cultural Heritage and Creativity

- An unmatched tangible and intelligible heritage (diverse cultures ,Cathedral, the Alcazar and the Archive of the Indies)
- In Seville music is everywhere (symphonies, operas and open public spaces dedicated to music to foundations, schools, and conservatories)
- Seville is known for Flamenco

B. Head notes from ethnographic research in Seville

Analysed themes and their colour codes:

Cultural Heritage and Creativity
Digitalization and Innovation
Sustainability
Accessibility
Marketing Initiatives
Stakeholders Involvement

Day 1: 24.3.2023

Observations during the visit of Sevilla City Office which oversees smart tourism at Alcalde Marqués del Contadero, s/n, 41001 Sevilla:

- the smart office had one QR code that could be used to connect to free Wi-Fi in the office.
- Compared to other tourist offices, this office didn't have any leaflets only 1 map
- the office had 1 employee.
- except for researcher there were 3 other tourists asking information about tourist attractions

- during the conversation with the employee of the Smart Tourism Office she mentioned that the Seville APP doesn't work for a long time, even though this app is promoted on the official tourist website visitsevilla (https://visitasevilla.es/en/history/seville-app)
- the employee in the app doesn't work for a while.
- the employee didn't know about other apps promoted on the seville-smarttourismcapital.eu website such as Arbomap to provide information about forest species in Seville and Kleos.App that offer information about the tree species in botanical gardens of the Rea Alcazar

During the visit of FILO – one of the popular brunch places at C. Hernando Colón, 19, 41004 Seville:

- during the conversation with the waiter, he didn't know anything about smart tourism in Seville, the reason might also be limited knowledge of English language

Observations during the Visit of General Archive of the Indies (UNESCO site)

- visit of UNESCO site was free of charge
- all the information was only in Spanish – do they focus only on national tourists?
- some information boards included QR code, which after scanning opened the webpage with video including the background information about this World Heritage site, however the video was also only in Spanish
- the site had a lot of stares and was not accessible for disabled

Observations during the visit of Real Alcazar of Seville (UNESCO site)

- entrance ticket was purchased online and QR code was received and was used as an entrance ticket
- the site had also a lot of stares and same as General Archive of the Indies was not accessible for disabled
- there is a possibility to purchase the audio guide when visiting the UNESCO site
- in the conversation with employee, he mentioned that there no option of AR or VR option as it is advertised on the website

Main findings at the end of Day 1:

- Day 1 was the exploration phase during which the researcher was trying to experience Seville from the role of the tourist
- Many expectations were not met, as none of the apps that is promoted online was working and Seville City Office was very limited, compare to what is described online as 21st-century tourist information with touch screens, encouraging visitors to download the Seville App

- Many QR codes can redirect you only to the PDF file, which means that the DMO doesn't get any information about the user of QR code -> thins brings up new thought of what is the goal of using QR codes? Is it to limit the waste? E.g., instead of leaflets?
- The Data analysis after the first day showed that data collected were mostly to accessibility and digitalisation

Findings based on the triangulation with secondary data at the end of Day 1 revealed:

- **Accessibility:** Several locations, especially popular sites like UNESCO sites, presented significant accessibility challenges due to the presence of stairs, making them inaccessible for people with disabilities. Furthermore, the lack of multilingual information indicated a lack of digital accessibility, as much of the information was only available in Spanish.
- **Digitalization:** Many digital solutions, including virtual reality (VR), augmented reality (AR) experiences in Real Alcazar, and multiple mobile applications, were found to be non-existent despite being advertised on the main website of the Destination Management Organization (DMO).
- Employees are generally not aware about smart tourism development

Day 2: 25.3. 2023

Conversation with the employees of City Express Tourist Information Centre at Av. de la Constitución, 23b, 41001 Sevilla:

- two employees and none of them knew anything about smart tourism
- they thought Seville was a smart city some years ago, and told me there is "something" by the river about it but didn't know what exactly
- they suggested me to visit the tourism office close by -> **Diputación-prodetur- turismo andaluz**

Conversation with the employee in the tourism office -> Diputación-prodetur- turismo andaluz at Pl. del Triunfo, 1, 41004 Sevilla:

- employee didn't know anything about smart tourism or the app, told me to visit the main "headquarters" office of smart tourism -> **Sevilla City Office**
- employee mentioned that there are four main tourism offices who are in charge of tourism in Andalusia region, while **Sevilla City Office** is in charge of smart tourism and is owned by municipality

Observations during the visit of Seville Cathedral (UNESCO site):

- the entrance tickets are also booked online, same as when visiting Real Alcazar
- there is an option to purchase audio guide tour extra
- after purchasing the audio guide tour, it is required to download the app and the audio guide is available in 5 languages: Spanish, English, French, German and Italian
- the guide is generally in a very good quality, not too long and providing interesting information

Visit of La Carboneria – bar with flamenco performance at C. Céspedes, 21, A, 41004 Sevilla:

- employees of the bar had very limited English skills
- during the flamenco performance it could be seen that dancing and music is a big part of Spanish culture

Visit of the Ibis Styles Sevilla City Santa Justa at Av. de la Buhaira, 2, 41018 Sevilla:

- the aim of the visit was to get more information on smart tourism, however, the employee at the reception of the hotel didn't have any information about about smart tourism

Main findings at the end of Day 2:

- in general lack of English language skills is seen as limitation and it is not possible to have many spontaneous conversations with employees in the tourism and hospitality industry
- people in tourist offices are not aware about smart tourism, however, the point of smart tourism is also to have open access to all the data that different stakeholders can use for different opportunities -> this brings up question on how can they use these data if they are not aware that they exist?
- The UNESCO sites are not accessible for disabled visitors

Triangulation of findings with the secondary data at the end of Day 2 revealed:

- **Stakeholders' involvement** is a critical aspect of smart tourism development. To gain insights into their level of involvement and the specific ways in which they are engaged, further questions should be sent to Pino Canales through email
- Due to the limited English language skills, conducting informal conversations about smart tourism development was not feasible -> more stakeholders should be contacted through email after the field trip to gather their perspectives on smart tourism and their level of involvement in its development.
-

Day 3: 26.3.2023

Observations about digitalization and innovation:

- many places have QR codes that give you access to e.g. menu in restaurants, opening hours, official websites of different tourism and hospitality places
- streets are very clean in general even after the Friday or Saturday night
- digitalization is used only for the use of DMO, not for locals or tourists
- how do they use data from QR codes?
- some QR codes are using bit.ly a free URL shortener with link management software
- QR codes are available even on billboards throughout the city one example is the QR code that gives access to PDF file of the Seville city map
- Another example is the QR code which after scanning redirects the tourist to google maps, however, google might not work for everyone e.g. tourists from China
- They use qr.co website
- use of 5G
- there are many broken QR codes around the city (not working)

Biking experience with the use of SEVICI APP:

- the city is not made for biking, especially not for tourists who are not familiar with the city
- when biking you are not allowed to use GPS, however without GPS the city is not bikeable at all
- there are not biking paths inside of the city, only in the parts outside of the city
- in general it seems like biking service was developed for locals not for tourists

Visit of the restaurant Cervecería Giralda Bar at C. Mateos Gago, 1, 41004 Sevilla:

- the informal conversation with employee revealed that she was not aware about the smart tourism

Visit of Casa Paco restaurant at Alameda de Hércules, 23 in Seville:

- the employee didnt know anything about smart tourism

Main findings at the end of Day 3:

- overall, it was not very visible to see that Seville became smart tourism city of 2023 and it doesn't change the way tourist experiences the city (considering the digitalization offerings), on the other hand, it was very visible through its marketing (ads on busses, billboards, in the streets, at the airport) the same colour scheme was used at all types of marketing as a way of destination branding
- digitalization is used only for the use of DMO, not for locals, businesses or tourists.

- how do DMOs use data from QR codes?
- how does smart tourism office differ from the other offices? Because during the observation differences were not very visible
- it could be observed that all the places accessible for tourists, even the small market were accepting card payments
- even though Seville provides a lot of bikes rent points, it is not possible to bike in the city centre and it seems like the biking option is more for local then for tourists

Triangulation with secondary data at the end of Day 3:

- **Digitalization:** In smart tourism destinations, digitalization should aim to enhance the services provided to tourists. However, in Seville, it appears to be primarily utilized as a tool for Destination Management Organizations (DMOs).
- **Accessibility**: Despite Seville's promotion of bicycles and the presence of extensive biking lanes as means to achieve sustainability and accessibility in the city, it was observed that the city is not "bikeable" for tourists at all.
- **Marketing:** The destination's branding strategy was highly visible through various marketing channels such as bus ads, billboards, street advertisements, and even at the airport. A consistent colour scheme was employed across all marketing materials as a means of reinforcing the destination's brand identity.
- Employees in the restaurants didn't know anything about smart tourism

C. Interview guide

Interviewee: Pino Canales, Data Analyst at Smart Tourism Office Seville

Date & Location of the Interview: Email Interview

Reason for the interview:

- To get a better understanding of smart tourism development in Seville and use of Big and Open Data

Research method:

- A combination of open-ended and descriptive questions

Introduction:

- Presentation of what is the purpose of this interview
- Consent form

- Storage of data & Confidentiality

Questions:

1. What is the end goal of developing smart tourism in Seville?
2. Was there also pressure from tourists or from citizens to develop smart tourism in Seville?
3. Have you experienced any limitations or challenges when developing smart tourism in Seville? (e.g. in governance, policies, public authorities, technology etc.)
4. How is the development of smart tourism in Seville funded?
5. Is there a city or a country which you see as a benchmark for smart tourism development?
6. Have you seen a change in the number of tourists after becoming the European Capital of Smart Tourism 2023?
7. Do you have information on how many businesses are using Open Data from the smart.sevillacityoffice website? And if, what do they use it for?
8. Have you experienced any challenges with the use of Open Data?
9. Is there a specific example you could share of how Big Data is used to enhance sustainability in Seville?
10. Have you experienced any challenges when collecting and using Big Data?

D. Email Interview Transcript with Pino Canales, a Data Analyst as Sevilla Smart Tourism Office

Date of interview:

Location of interview: online

Interviewer: Dominika Glonekova

Interviewee: Pino Canales, Data Analyst as Sevilla City Office

Analysis of Themes:

Understanding of Smart Tourism
New Tourism Model
Stakeholders' Involvement
Budget
Smart Tourism Innovative Projects focusing on Sustainability
Challenges in Smart Tourism Development

Benefits of Smart Tourism Development

Digital Technology Used in Smart Destinations

1. **What is the end goal of developing smart tourism in Seville?**

Smart Tourism Office is the office in charge of the process of transforming Seville into a Smart Tourism Destination. Its objective is to contribute to improving the competitiveness of the destination and the quality of life of its residents by focusing on five areas of action: governance, innovation, technology, sustainability and accessibility. It focuses its objective on a new, more sustainable, responsible and intelligent tourism model, putting the resident at the centre of its actions, improving the necessary and positive coexistence with visitors.

2. **Was there also pressure from tourists or from citizens to develop smart tourism in Seville?**

The new tourism model we are committed to responds to the need to approach tourism from a different point of view, but above all as a common project in which the public administration goes hand in hand with businesses and citizens. We want to improve the experience of visitors, but also the lives of residents. For this reason, the creation of groups such as the Local Tourism Council or the tourism governance committees in the neighbourhoods encourage the participation of residents, traders and tourism businesses in the construction of the shared city model.

3. **Have you experienced any limitations or challenges in developing smart tourism in Seville (e.g. in terms of governance, policies, public authorities, technology, etc.)?**

The projects of the Smart Tourism Office, integrated within the Sevilla City Office, are not isolated initiatives. Our projects are part of the city project that Seville City Council is working on. The initiatives that lead to building a more intelligent, responsible and sustainable tourism model are part of a much more ambitious plan. A good example of this is E-City Seville, which aims to convert the Cartuja Science and Technology Park into a sustainable and intelligent space by 2025, which will serve as a laboratory for the application of the experiences and pilot projects developed there in other areas of the city.
The city and tourism managers are working hand in hand to move towards a smart city following the recommendations made by the European Commission. Our aim is tourism that makes the city, and to move towards a Visitor Economy, in which the benefits generated by tourism activity are used to improve the lives of residents.

4. **How is the development of smart tourism in Seville financed?**

With its own budget and funding from Next Generation funds (European Union).

5. **Is there any city or country that you consider a benchmark for the development of smart tourism?**

We are constantly informing ourselves about the projects that are being implemented in other cities. Establishing synergies and learning from what other cities are doing is crucial to keep moving forward. We also share our projects in forums and fairs, and we explain our initiatives to those responsible for tourism models in other regions and countries, making it easier for them to implement them in their territories. The slogan with which we became European Capital of Smart Tourism 2023 was "Sharing is Smart", because the way Seville understands tourism intelligence is by sharing. Sharing public space, sharing data, sharing impressions with citizens and the tourism sector, and sharing our knowledge and experience to promote smart destinations. We look at what other European Capitals of Smart Tourism have done, which, like Seville, have been awarded by the European Commission for their good practices and are therefore a model to follow. And also, in the cities that are members of Segittur's Network of Smart Tourist Destinations, with which we share concerns and objectives.

6. **Have you noticed a change in the number of tourists after becoming European Capital of Smart Tourism 2023?**

We inaugurated our year as European Capital of Smart Tourism on 24 March. It is still too early to be able to analyse the impact of this title on visitor numbers and the benefits of tourism activity. But we can compare it with what it has meant for other previous capitals such as Valencia, in which case the impact of the Capital has been notable and beneficial for the city, not only in terms of tourism data but also in terms of image and the perception of the city by those who visit it.

Our year as European Capital of Smart Tourism has just begun, and in the coming months we will have a full agenda of meetings and milestones in which we will involve the sector and citizens. As the year progresses, we will be able to find out data that will shed light on what is happening in the city.

7. **Do you have information on how many companies are using Open Data from the smart.sevillacityoffice website? And if so, what are they using it for?**

The Tourism Intelligence System was created as a viewer of open data from different sources that, when combined, offer us a complete picture of tourism in the city. We offer this data so that companies and administrations can take it into account when drawing up their strategies and making decisions, and for the public it is an exercise in transparency. We organise conferences in the Smart Tourism Office Agora with companies and representatives of institutions not only to provide them with the SIT data, but also to train them to be able to take advantage of each of the panels that make it up. In these

conferences, we illustrate how they can use this information when implementing their strategies and policies. But our main task is to share knowledge and promote Data Governance.

8. **Have you experienced any problems with the use of Open Data?**

Data is sometimes complex, and one of the challenges for analysts is to show it in the right way to make it easy to understand. That is why we have been very demanding and conscientious in presenting the data through the TIS. We want anyone accessing this platform to be able to consult this information and find what they are looking for. It should also be emphasised that it is a living tool that is open to suggestions from both those responsible for the tourism sector and users in general, and for this reason we invite those who access the TIS to make their contributions to improve the visualisation of the data and make it easier to understand.

9. **Are there any specific examples you can share of how Big Data is being used to improve sustainability in Seville?**

One of the most innovative projects we have launched is the 'Analysis and management of tourist flows in the Santa Cruz neighbourhood'. The Santa Cruz neighbourhood is an area of Seville through which thousands of tourists pass every day, the heart of monumental Seville. For this reason, the coexistence between residents and visitors has been affected by the high impact of tourism. For this reason, we have launched this initiative in collaboration with the companies Galgus and Bosch. We are measuring the tourist flows in this delimited area through wifi sensors and optical sensors, to which we will soon add the data from the telephone operators' antennas. We already have some sensors working and they are producing data that is then transformed into real-time information that can be consulted through a digital twin that we have created. This pilot project, which will then be applied in these areas of the city, will allow us to make decisions on the fly to redirect these flows to other areas and improve the coexistence between neighbours and tourists. The same sustainability that we apply when we promote other areas of the city to redirect these flows. In neighbourhoods such as La Macarena or Triana we are working with the collaboration of neighbours and shopkeepers to promote the tourist attractions and strengths of these areas, so that visitors move from the area around the Cathedral and the Real Alcázar to these other areas. This also redistributes the benefits produced by tourism to other areas of Seville.

We also have a project under the name of 'Universal Seville', which is highlighting the extensive legacy left in the city by the 1992 Universal Exposition in order to attract tourist flows to the Isla de la Cartuja. The SIT is also working on sustainability. The new Tourism Sustainability Indicators, created expressly for Seville and now being implemented in other cities around the world, are the result of collaboration with the companies Mabrian and Mastercard. Through these indices we can consult the carbon

footprint per visitor, the distribution of tourist income or the perception that visitors have regarding the sustainability of the destination. After Seville, these indicators are now being applied in other destinations and allow us to draw comparisons with other cities.

Dear Pino,

I hope my email finds you well.

I am a master's degree student of Sustainable Tourism at Aalborg University in Copenhagen and I decided to write my master's thesis about Smart Tourism in Seville. The main focus of my project is the use of innovation and technology and the use of Big Data and Open Data.

I got your email from Leire Bilbao, the CEO of Visit Benidorm and I am contacting you because I wanted to know if you would have time for a maximum 30-minute interview, whenever possible at your convenience. I would be happy to get back to you with more details about the interview questions.

Thank you very much for your time!

Have a great day,

Best regards,
Dominika Glonekova

Thu 09/03, 12:12
Dominika Gloneková

Dear Dominika,

Thank you so much for your email. Could you please send me the questions? I will give you feedback as soon as possible.

Regards,

Hola, soy Pino Canales Priego.
Smart Tourism Office
pcanales@sevillacityoffice.es
+34 955471207
+34 650106116
www.sevillacityoffice.es

Sevilla City Office

Dear Pino,

Thank you very much for getting back to me. I found a lot of useful documents online and here are some additional questions regarding Open Data, Big Data and smart tourism development :

1. What is the end goal of developing smart tourism in Seville?
2. Was there also pressure from tourists or citizens to develop smart tourism in Seville?
3. Have you experienced any limitations or challenges when developing smart tourism in Seville? (e.g. in governance, policies, public authorities, technology etc.)
4. How is the development of smart tourism in Seville funded?
5. Is there a city or a country which you see as a benchmark for smart tourism development?
6. Have you seen a change in the number of tourists after becoming the European Capital of Smart Tourism 2023?
7. Do you have information on how many businesses are using Open Data from the smart.sevillacityoffice website? And if, what do they use it for?
8. Have you experienced any challenges with the use of Open Data?
9. Is there a specific example you could share of how Big Data is used to enhance sustainability in Seville?
10. Have you experienced any challenges when collecting and using Big Data?

Let me know if you prefer answering the questions over email or in the form of an online interview.

Thank you so much for your time and cooperation.

Tue 14/03, 09:28
Dominika Gloneková

Action Items

Dear Dominika,

I'll prepare the answers and give you feedback next week. Regards,
Pino

Hola, soy Pino Canales Priego.
Smart Tourism Office
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+34 650106116
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Sevilla City Office

Wed 29/03, 12:58
Pino Canales <pcanales@sevillacityoffice.es>

Dear Pino,

I'm revisiting my previous email and wanted to ask if you had a chance to review the information I sent before.

Thank you and have a nice day.

Best regards,
Dominika Glonekova

Thu 30/03, 17:43
Dominika Gloneková

Action Items

Dear Dominika, sorry for the late reply and delay of our answers to your questions. Give me a few days more please.

Thank you.

Hola, soy Pino Canales Priego.
Smart Tourism Office
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www.sevillacityoffice.es

Sevilla City Office

Mon 03/04, 11:04
Dominika Gloneková

Hi Diminika, sorry for the late reply. Here below, our answers to your questions. They are in spanish as we prefer to answer this kind of questions in our mother language. Do you translate it?.

Regards,

1. ¿Cuál es el objetivo final del desarrollo del turismo inteligente en Sevilla?

Smart Tourism Office es la oficina encargada del proceso de transformación de Sevilla en un Destino Turístico Inteligente. Su objetivo es contribuir a mejorar la competitividad del destino y la calidad de vida de sus residentes incidiendo en cinco ámbitos de actuación: gobernanza, innovación, tecnología, sostenibilidad y accesibilidad.

Thu 06/04, 10:58
Pino Canales <pcanales@sevillacityoffice.es>

Dear Pino,

Thank you very much for your response, I have translated all the answers and it is very helpful to better understand how smart tourism is developed in Seville.

Finally, I wanted to ask if this information could be included in my research project with your name. The project will only be shared with the university.

Once again thank you very much for your time and help!

Have a nice day and Easter Holiday.

Best regards,
Dominika Glonekova

Mon 10/04, 10:50
Dominika Gloneková

Dear Dominika,

Thank you for your email. No problem, you can include it with my name.

Regards,

Hola, soy Pino Canales Priego.
Smart Tourism Office
pcanales@sevillacityoffice.es
+34 650106116
www.sevillacityoffice.es

Sevilla City Office

Dear Pino,

Once again thank you for your previous emails. In the process of writing my report and analysing my data, a few more questions came up. Would you have time to answer a few follow-up questions?

1. In your previous email, you mentioned that you want to improve the experiences of visitors (in question nr. 2) can you provide some examples of how?
2. You also mentioned that the Local Tourism Council or the tourism governance committees in the neighbourhoods encourage the participation of residents (also question nr. 2), can you elaborate a bit more about how residents participate?
3. In question number 6 you mentioned that being the European Capital of Smart Tourism can be beneficial in terms of image and the perception of the city by visitors such as in the case of Valencia. How do you collect the data to understand how the city is perceived by visitors?
4. I found that multiple apps were developed in Seville such as the Seville app, Kleos app or Sevilla Accessible but it seems like they don't work anymore. Is there a specific reason? (e.g. were they not beneficial anymore?)

Thank you very much once again, I appreciate your time a lot!

Hope you have a great day.

Dear Pino,

I wanted to follow up on the email I sent a few days ago, as I haven't heard back from you yet. I understand that you may be busy, so I appreciate any time you can spare to answer my questions.

I'm really interested in your insights on the following topics:

1. In your previous email, you mentioned that you want to improve the experiences of visitors (in question nr. 2). Could you please provide some examples of how this could be achieved?
2. You also mentioned that the Local Tourism Council or the tourism governance committees in the neighbourhoods encourage the participation of residents (also question nr. 2). Could you elaborate a bit more about how residents participate in these initiatives?
3. In question number 6, you mentioned that being the European Capital of Smart Tourism can be beneficial in terms of image and the perception of the city by visitors, such as in the case of Valencia. Could you give me some insight into how you collect data to understand how the city is perceived by visitors?
4. I noticed that some of the apps developed in Seville, such as Seville app, Kleos app, and Sevilla Accessible, don't seem to be working anymore. Is there a reason for this? (e.g., were they not beneficial anymore)?

Thank you so much for your help and expertise. I really appreciate any input you can provide.

E. Email Interview with the Hotel Patio De Las Cruces

Dear Hotel Patio De Las Cruces team,

I hope my email finds you well.
I am a master's degree student of Sustainable Tourism at Aalborg University in Copenhagen and I am conducting a research project on Smart Tourism in Seville. A big part of this project is to find out the opinions of local stakeholders on smart tourism and the use of Big and Open Data.

I am contacting you because I wanted to know if you would have time to answer the following four questions:

1. Did you notice any changes since Seville became European Smart City? (e.g. businesses use more digital technology, Smart Tourism Office is providing more meetings on how the businesses can use the open data, businesses are more engaged in the pilot projects etc.)
2. Do you use open data available on the main website smart.sevillacityoffice?
3. If yes, can you write an example of how?
4. Do you think smart tourism development changed the business model in Seville? (e.g. businesses provide different services to tourists)

Thank you very much for your time and help!
Have a great day.

Best regards,
Dominika Glonekova

Dear Dominika,

We do not use intelligent tools in the management of our hotels, except for the management of reservations through Wubook.

Greetings.

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PC
PATIO DE LAS CRUCES
HOTEL

F. Email Interview with Sebka Technology

Mon 08/05, 07:23
info@sebkatechnology.com

Dear Sebka Technology Team,

I hope this email finds you well. I am a Master's degree student of Sustainable Tourism at Aalborg University in Copenhagen, and I am conducting a research project on Smart Tourism in Seville. During my research, I came across the VR VIRTUAL WALK in Real Alcázar de Sevilla, and I noticed that your company is listed as a provider of this virtual walk.

I am writing to inquire about the development of this virtual reality experience. Could you please provide me with information on when it was developed and whether it is still accessible through any kind of app?

Thank you very much for your prompt response. I appreciate your assistance.

Best regards,

Dominika Glonekova

Dear Dominika,

Our technology solution in Alcazar is not available in any app. It is only accessible to our clients once they are in Seville since 2020.

It consists of a succession of VR and AR contents. It is possible to have a historical virtual guide to visit one of the parts of the palace and walk through VR through spaces that have disappeared today at the same time that you walk through the real monument today.

I hope and wish that your research project will be a success and that you will be able to name us in it.

Best Regards,

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Wed 10/05, 14:51

Dear Sebka Technology Team,

Thank you so much for your prompt response and for your consent to include the company name in the project.

I have an additional follow-up question that came to my mind:

- Do you collect any data from customers who buy VR or AR experiences? And if you do, do you share it with Seville City Office or any other stakeholder?

Thank you so much for your help!

Best regards,

Dominika

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G. Email Interview with European Commission

Dear European Commission,

I hope this email finds you well.

My name is Dominika Glonekova, and I am a Master's degree student of Sustainable Tourism at Aalborg University in Copenhagen. I am conducting a research project on Smart Tourism and have a few questions regarding the European Capital of Smart Tourism competition.

I would greatly appreciate your assistance in answering the following inquiries:

1. Do all the best examples shared by cities in their application process need to be already implemented, or are the cities allowed to share examples of future projects?
2. Does European Commission carry out checks or audits in the evaluation process of the competition?
3. Are the presentations, which are part of the second evaluation step in the selection process for shortlisted cities, available to the public?

Thank you in advance for your prompt response. I appreciate your time and assistance.

Best regards,
Dominika

Wed 17/05, 16:51

Dear Dominika,

Thank you for your email and interest in the European Capital of Smart Tourism initiative.

Please find answers to your questions below.

Best regards,

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European Smart Tourism Secretariat

EUROPEAN CAPITAL OF SMART TOURISM

EUROPEAN GREEN PIONEER OF SMART TOURISM

info@smarttourismcapital.eu | +49 30 70 01 86-390

H. Email Interview with Leire Bilbao, Director of Visit Benidorm

Dear Carola,

I hope my email finds you well.

I am studying a master's degree in Sustainable Tourism at Aalborg University in Copenhagen and in our 2nd semester you were giving us a presentation about Visit Benidorm. I got inspired by your presentation and became very interested in the topic of Smart Tourism and I decided to write my master's thesis about Smart Tourism in Seville, as it became a European City of Smart Tourism in 2023. I wanted to ask if you know someone who I could contact for more information or a possible interview about Smart Tourism in Seville.

Thank you very much in advance and Have a wonderful rest of the day. 😊

Bet regards,
Dominika Glonekova

Hello Dominika,

First of all, thank you for your comments on the presentation made by my colleague Carola, and of course I will send you the email of our colleague in Seville so that she can collaborate in your work.

We are in the process of developing the data space, so we will remain at your disposal if you consider it appropriate to add additional information.

Here you have a presentation I Will do next Week in the EU

PDF SMART TOURISM DESTINATION - BENIDORM…

This is the email address of Pino Canales pcanales@sevillacityoffice.es

Best regards,

Leire Bilbao

Dominika Gloneková

Reply all

Tue 07/03, 16:01

Direccion Visit Benidorm <direccion@visitbenidorm.es>; +1 more

Dear Leire,

Thank you so much for sending me the presentation and the contact information. I appreciate it!

I hope you have a great day.

Best regards,
Dominika Glonekova