How to Cite:
Aloui, I. (2024). The impact of smart tourism on the quality of tourism services in the Dutch economy. *International Journal of Economic Perspectives*, *18*(11), 2431–2458. Retrieved from https://ijeponline.org/index.php/journal/article/view/718

The impact of smart tourism on the quality of tourism services in the Dutch economy

Ismail Aloui
Faculty of Economic, Commercial and Management Sciences, Department of Economic Sciences, Chedli Benjedid University, Algeria
https://orcid.org/0009-0003-5934-0990

***Abstract*---**This study aims to highlight the impact of smart tourism industry applications on the quality of tourism services, as it has become necessary for tourism organizations to work on continuous improvement of their digital tourism services, and to provide a modern, innovative and smart tourism product that is different from what competitors offer to enhance the tourism experience for tourists, in order to ensure that their expectations are met. To achieve the objectives of this study, the descriptive approach was followed in presenting the concepts and the analytical approach for the applied aspect based on the field study, where information was collected through a questionnaire designed to identify the impact of digital tourism services on the quality of tourism services in the Dutch economy. This study investigates the influence of smart tourism applications on the quality of tourism services within the Dutch economy. It emphasizes the necessity for tourism organizations to continuously enhance their digital offerings to provide innovative and competitive tourism products that meet and exceed tourist expectations. Utilizing a descriptive and analytical approach, data was collected through a questionnaire aimed at assessing the impact of digital tourism services on service quality.

***Keywords*---**Innovation, Information and Communications Technology, Resource Efficiency, Economic Growth, smart tourism, tourism services.

Introduction

Tourism represents an integral element of the Dutch economic framework, contributing significantly to the Gross Domestic Product and generating numerous employment opportunities. With the relentless progression of technological innovations, the tourism industry is undergoing a profound

Corresponding author: *Aloui, I., Email: aloui-ismail@univ-eltarf.dz*
Submitted: 27 September 2024, Revised: 09 October 2024, Accepted: 19 November 2024

transformation giving rise to the concept of "smart tourism." This advanced paradigm leverages state-of-the-art technologies to augment the efficiency and convenience of travel experiences, encompassing all phases from itinerary planning to service delivery. In the Netherlands celebrated for its rich cultural heritage and stunning natural landscapes it is essential to investigate how these contemporary trends influence the quality of tourism services provided. This article aims to assess this impact illustrating how smart tourism can enhance visitor experiences while concurrently strengthening the overall economic robustness of the tourism sector.

Research Problem:

This research paper seeks to answer the following main question:
How does smart tourism affect the quality of tourism services in the Dutch economy?

Research Hypotheses:

- Digital technologies play an important role in developing tourism services.
- Tourism organizations in the Netherlands have a strong influence in improving smart tourism services.
- Innovation is the key factor in developing the smart tourism sector in the Netherlands.

Study objective:

The principal objective of this scholarly investigation is to explore the impact of smart tourism on the improvement of tourism service quality in the Netherlands. Smart tourism embodies a cohesive paradigm that harnesses contemporary technological advancements to enhance travel experiences thereby rendering them more efficient and rewarding the initial goal is to assess the degree to which the Netherlands has incorporated digital technologies encompassing intelligent applications innovative methodologies and comprehensive data analytics to augment the tourism experience.

In addition this research seeks to determine the extent to which the quality of services provided through these innovative applications has been enhanced and to investigate whether smart tourism promotes heightened visitor interaction with tourist destinations Furthermore the economic implications of smart tourism on ancillary sectors related to tourism such as transportation dining establishments and hospitality services will be rigorously analyzed.

Moreover the study aims to propose specific recommendations for the advancement of smart tourism strategies within the nation, thus contributing to the strengthening of the competitive position of the Dutch economy on both European and global platforms Ultimately this research aspires to provide a comprehensive understanding of how smart tourism can be effectively implemented to enhance sustainability and overall visitor satisfaction of tourism services in the Netherlands.

1. Introduction to Smart Tourism

In this section, we will discuss a set of points that help us understand smart tourism and its role in the economy in general and the smart economy in particular, where:

- Definition of Smart Tourism.
- Importance of Smart Tourism in the Modern Economy

1.1 Definition of Smart Tourism

Smart tourism represents a transformative approach to modern travel, emphasizing the integration of advanced technologies and data-driven strategies to enhance visitor experiences. This model is built on three core themes: leveraging technology utilizing Realtime data through intelligent systems and coordinating activities among various stakeholders. By employing information and communication technologies information and communication technologies, smart tourism creates a people-centric framework that promotes sustainability and improves service quality.

A fundamental aspect of smart tourism is the active participation of local communities and organizations in creating cohesive experiences for travelers. It encompasses diverse digital tools and platforms, including mobile apps, social media, and Internet of Things devices, which facilitate efficient data collection analysis and sharing among businesses governmental entities and tourists. This interconnected ecosystem allows destinations to promptly cater to visitor needs with personalized services tailored to individual preferences.

Moreover, smart tourism merges traditional travel practices with contemporary technological innovations, forming a more unified strategy to enhance a destination's appeal and competitiveness. It prioritizes operational efficiency while advocating for environmental sustainability by managing resources responsibly to meet travelers' desires for unique experiences.

Co-creation is a vital component of smart tourism, encouraging tourists to actively participate in their travel experiences rather than remaining passive observers. By facilitating real-time interactions with locals and providing access to pertinent information about attractions and available services, smart tourism significantly boosts overall visitor satisfaction. (Renata Guizzardi – Silva Souza, João Rebelo Moreira, Luiz Bonino da Silva Santos, M. Sundman and Adina Aldea, 2024, p. 11-15, p. 71-75 and p. 16-20).

1.2 Importance of Smart Tourism in the Modern Economy

Smart tourism has emerged as a transformative force in the modern economy, reshaping how destinations engage with travelers and improve their services. By leveraging digital innovations, smart tourism enhances the travel experience, creating environments that are responsive to tourists' preferences. This approach not only boosts operational efficiency for tourism businesses but also promotes eco-friendly practices, aligning with the growing consumer demand for sustainable options. Consequently, smart tourism plays a crucial role in driving

economic growth by appealing to a tech-savvy audience seeking convenience and personalized experiences.

Furthermore, smart tourism enhances competitiveness within the travel industry. Destinations that adopt advanced technologies can offer unique experiences that distinguish them from competitors. Through big data analysis and Internet of Things applications businesses can customize their services to meet individual traveler interests leading to heightened customer satisfaction and brand loyalty. This competitive edge is vital in a market where differentiation can significantly impact presence and success.

Beyond its immediate economic benefit's smart tourism acts as a catalyst for job creation and community development. Investments in technology and infrastructure invigorate local economies by creating employment opportunities across high-tech and traditional hospitality sectors. Additionally, smart tourism fosters deeper community engagement and pride by promoting cultural heritage through digital channels.

The principles of smart tourism also facilitate better resource management and strategic planning. Datadriven insights enable governments and stakeholders to make informed decisions regarding investment priorities and infrastructure developments that cater to current needs and future trends. This proactive approach helps ensure that destinations remain attractive in an ever-evolving global market.

In summary, smart tourism signifies a substantial shift toward more efficient, sustainable, and culturally enriching travel experiences that resonate with the values of today's discerning travelers. It transcends being a transient trend, establishing itself as a pivotal element in shaping the future of the travel industry. (OECD Tourism Trends and Policies 2020, 2024, and B. H. Ye, H. Ye and R. Law, 2024, and H. Kusumastuti, D. Pranita, M. Viendyasari, M. S. Rasul and S. Sarjana, 2024).

2. The Role of Digital Technologies in Tourism Services

Digital technology is a fundamental part of modern tourism services, playing a significant role in enhancing the traveler experience and increasing operational efficiency, We will address the following points:

- Overview of Digital Technologies Used in Tourism.
- Innovations Transforming the Tourist Experience.

2.1 Overview of Digital Technologies Used in Tourism

The emergence of smart tourism is driven by rapid advancements in digital technologies, particularly Information and Communication Technologies (ICTs) such as cloud computing, the Internet of Things (IoT), mobile applications, augmented reality (AR), virtual reality (VR), and big data analytics. These innovations enable tourism stakeholders to gather extensive data on traveler behaviors and preferences, allowing for personalized services that enhance visitor engagement.

Mobile apps play a crucial role for travelers, providing functionalities like booking accommodations, navigating locations, and receiving real-time updates on attractions. Location-based services offer tailored recommendations based on a traveler's current position. Additionally social media platforms contribute valuable insights into consumer trends through user generated content.

Cloud computing supports efficient interaction among tourism entities by centralizing data management, which increases operational efficiency and fosters collaboration between government and private sector participants. AI driven analytics provide actionable insights helping businesses anticipate customer needs and improve service offerings.

Moreover, AR and VR technologies enrich the tourist experience by creating immersive environments where potential travelers can virtually explore destinations before making decisions. These innovations not enhance customer satisfaction but also increase the competitiveness of destinations by offering unique experiences that meet the expectations of modern travelers.

Overall, these digital tools empower stakeholders in the tourism industry to develop smarter solutions that improve service quality and address sustainability challenges through informed decision-making.(M. Zsarnoczky, (Renata Guizzardi - Silva Souza, João Rebelo Moreira, Luiz Bonino da Silva Santos, M. Sundman and Adina Aldea, 2024, p. 71-75, H. Kusumastuti, D. Pranita, M. Viendyasari, M. S. Rasul and S. Sarjana, 2024, and B. H. Ye, H. Ye and R. Law, 2024, and A. Kontogianni, E. Alepis, M. Virvou and C. Patsakis, 2024).

Figure 1: Pontianak Smart City Logo
(**source**: Renata Guizzardi - Silva Souza, João Rebelo Moreira, Luiz Bonino da Silva Santos, M. Sundman and Adina Aldea, 2024).

2.2 Innovations Transforming the Tourist Experience

The rise of smart tourism has significantly changed how travelers engage with their experiences, primarily due to advancements in digital technologies. A notable innovation is the use of mobile applications that provide Realtime information. These applications allow tourists to navigate new destinations effortlessly, discover local attractions, and receive tailored suggestions based on their preferences and behaviors. When combined with Augmented Reality (AR),

these apps enhance the experience by offering immersive insights into historical sites, art, and local culture, thereby fostering a deeper connection to each location.

The integration of the Internet of Things further enriches this evolution by enabling seamless interactions between travelers and their environments. Intelligent sensors can assist with navigation, directing visitors to nearby points of interest and alerting them about current events or promotions. This interactive relationship not only improves the overall travel experience but also yields valuable data for service providers to enhance their offerings.

Automated services represent another key development in smart tourism. Hotels and accommodations are increasingly adopting advanced technologies such as robotic porters and virtual assistants to improve guest services, enhancing efficiency while maintaining high-quality service. These innovations cater to the needs of convenience-driven travelers, raising expectations for service excellence.
Additionally, big data analytics plays a crucial role in creating customized travel experiences by analyzing consumer-generated content across various digital platforms. This enables tourism organizations to refine their marketing strategies and develop offerings that align with the specific desires of individual travelers.

Overall, these technological advancements collectively nurture an environment where interactivity, convenience, and personalization thrive—core principles of smart tourism initiatives aimed at ensuring memorable journeys for all travelers. (S. K. Bhoda, 2024, and P. D. Vecchio, G. Mele, V. Ndou and G. Secundo, 2024, and I. Tussyadiah, 2020, and F. Yin, X. Yin, J. Zhou, X. Zhang, R. Zhang, E. Ibeke, M. G. Iwendi and M. Shah, 2022).

Figure 2: Smart Tourism: Blending History with Future Tech for Travelers (**Source**: S. K. Bhoda, 2024).

3. Impact of Smart Tourism on Service Quality in the Dutch Economy

The concept of smart tourism is one of the modern trends that contributes to improving service quality in the Dutch economy, through this, we will address the following points:

- Enhancing Tourist Experience through Technology

- Meeting Customer Expectations with Digital Solutions

3.1 Enhancing Tourist Experience through Technology

Smart tourism enhances the travel experience by leveraging digital innovations to create customized and engaging journeys for travelers. A key component of this enhancement is the use of mobile applications that provide Realtime information and services ensuring easy access to necessary resources. For example, locationaware features guide visitors to nearby attractions, dining options, or events, effectively merging physical experiences with digital interactivity.

The integration of the Internet of Things further enriches the tourist experience by enabling smart devices to communicate with travelers offering personalized suggestions based on individual preferences and behaviors. This can include recommendations for local experiences or alerts about upcoming events that match a traveler's interests. Such proactive engagement fosters a sense of connection and significantly increases satisfaction throughout the journey.

Smart tourism ecosystems also promote collaboration among various stakeholders, including local attractions, businesses, and government entities. This collaboration creates an environment conducive to value co-creation and simplifies how tourists access resources during their travels. The interconnectedness between consumers and service providers leads to more vibrant interactions, enhancing the overall travel experience.

Personalization in smart tourism addresses the diverse needs and expectations of travelers. Advanced analytics can analyze data from previous visits or social interactions to predict what experiences tourists may enjoy on future trips. This ability to offer tailored experiences cultivates loyalty and encourages repeat visits, as travelers feel recognized and valued.

In summary, technology-driven advancements in tourism not only improve visitor experiences but also strengthen the competitiveness of destinations in a rapidly evolving digital landscape. By meeting contemporary travelers' demands for convenience and personalization through innovative solutions, destinations can maintain their appeal in the global tourism market. (Renata Guizzardi - Silva Souza, João Rebelo Moreira, Luiz Bonino da Silva Santos, M. Sundman and Adina Aldea, 2024, p. 31-35, p. 71-75, p. 96-100, and U. Stankov, U. Gretzel, Miroslav D. Vujičić, V. Pavluković, T. Jovanović, M. Solarević and M.Cimbaljević, 2022, and PublicisSapient, 2024).

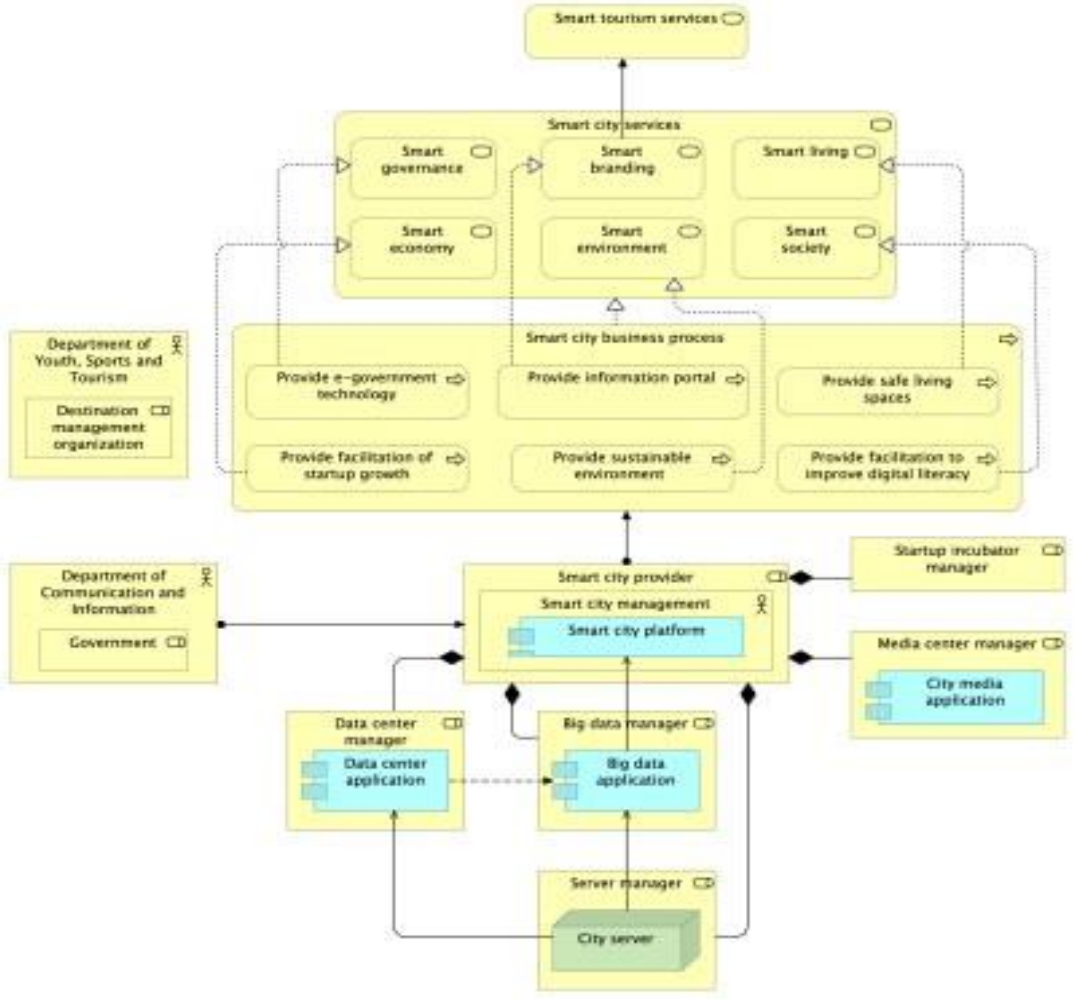

Figure 3: Baseline of Service Realization Viewpoint
(**source:** Renata Guizzardi - Silva Souza, João Rebelo Moreira, Luiz Bonino da Silva Santos, M. Sundman and Adina Aldea, 2024)

3.2 Meeting Customer Expectations with Digital Solutions

Addressing the demands of smart tourism requires a strategic approach that leverages digital innovations to enhance travelers' experiences. These innovations focus on delivering personalized Realtime information and services tailored to individual preferences and needs. For instance, mobile applications can offer immediate access to local attractions, dining options, transportation schedules, and cultural events. By utilizing locationbased services and data analytics, tourism operators can provide customized recommendations based on specific traveler profiles and behavioral patterns.

The integration of advanced technologies such as augmented reality and artificial intelligence further enriches the tourist experience. augmented reality

applications can transform visits to historical sites or museums into immersive experiences by overlaying informative content, which engages visitors more deeply. Meanwhile, augmented reality driven chatbots ensure that travelers receive prompt assistance and relevant information whenever needed.

Moreover, smart tourism allows for the extraction of valuable insights from the extensive data generated through user interactions. This data empowers stakeholders within the tourism sector to adapt their services dynamically in response to evolving customer preferences and behaviors. By actively monitoring tourist feedback—gathered through surveys or social media engagement—tourism organizations can refine their offerings to meet shifting expectations.

Collaboration among diverse stakeholders including government agencies local businesses technology developers and cultural institutions is crucial for creating an efficient smart tourism ecosystem. This cooperative effort not only enhances brand competitiveness but also guarantees that visitors have enriching experiences during their travels. By effectively implementing digital solutions within this collaborative framework, organizations can exceed customer expectations in an increasingly competitive marketplace. (P. D. Vecchio, G. Mele, V. Ndou and G. Secundo, 2018, F. Yin, X. Yin, J. Zhou, X. Zhang, R. Zhang, E. Ibeke, M. G. Iwendi and M. Shah, 2022, and S. K. Bhoda, 2024, and Renata Guizzardi - Silva Souza, João Rebelo Moreira, Luiz Bonino da Silva Santos, M. Sundman and Adina Aldea, 2024, p. 71-75, and B. H. Ye, H. Ye and R. Law, 2020).

4. Research Methodology

In this element, we will discuss the research methodology in order to answer the main question by presenting the approach adopted in this research paper, where:

- Descriptive Approach for Concept Presentation.
- Analytical Approach for Field Study

4.1 Descriptive Approach for Concept Presentation

Smart tourism represents a significant transformation in the travel sector, integrating digital technologies to enhance both tourist satisfaction and operational efficiency. By utilizing data analytics mobile applications and Internet of Things devices smart tourism creates seamless connections between travelers and service providers.

In an increasingly competitive global market, adopting smart technology is essential for destinations aiming to maintain a competitive advantage. This approach enables personalized experiences tailored to individual preferences while improving resource management through effective use of data.

Digital technologies are fundamental to smart tourism services leading to innovations such as real-time information sharing automated service delivery and improved customer engagement. For instance, mobile apps simplify travel tasks like booking accommodations and discovering local attractions.

Moreover, smart tourism can significantly elevate service quality by responding to evolving customer expectations. Modern travelers prioritize convenience and immersive experiences; therefore, technology integration allows organizations to fulfill these needs quickly by providing immediate access to relevant information and services. The implementation of these technologies not only enhances user experience but also fosters customer loyalty through personalized attention.

Overall, the exploration of smart tourism highlights its transformative impact on the travel industry. As digital technologies continue to advance and consumer expectations rise it is crucial for stakeholders in the tourism sector to adopt this innovative framework to ensure sustainable growth and improved service quality. (Renata Guizzardi - Silva Souza, João Rebelo Moreira, Luiz Bonino da Silva Santos, M. Sundman and Adina Aldea, 2024, p. 11-15, p. 96-100, p. 91-95, p. 41-45, and p. 101-105).

Dimension	Values
G1: Why	Facilitation
↓	↓
C1: Where	Multiple organizations
C2: Who	Independent organization (D), Software organizations (R), User organizations (R)
C3: When	Classical
↓	↓
D1: What	Components, interfaces, policies/guidelines
D2: How	Semi-detailed components and policies/guidelines, Aggregated or semi-detailed interfaces
D3: How	Abstract or semi-concrete elements
D4: How	Semi-formal element specifications

Figure 4: Reference Architecture Type 3
(**Source:** Renata Guizzardi - Silva Souza, João Rebelo Moreira, Luiz Bonino da Silva Santos, M. Sundman and Adina Aldea, 2024).

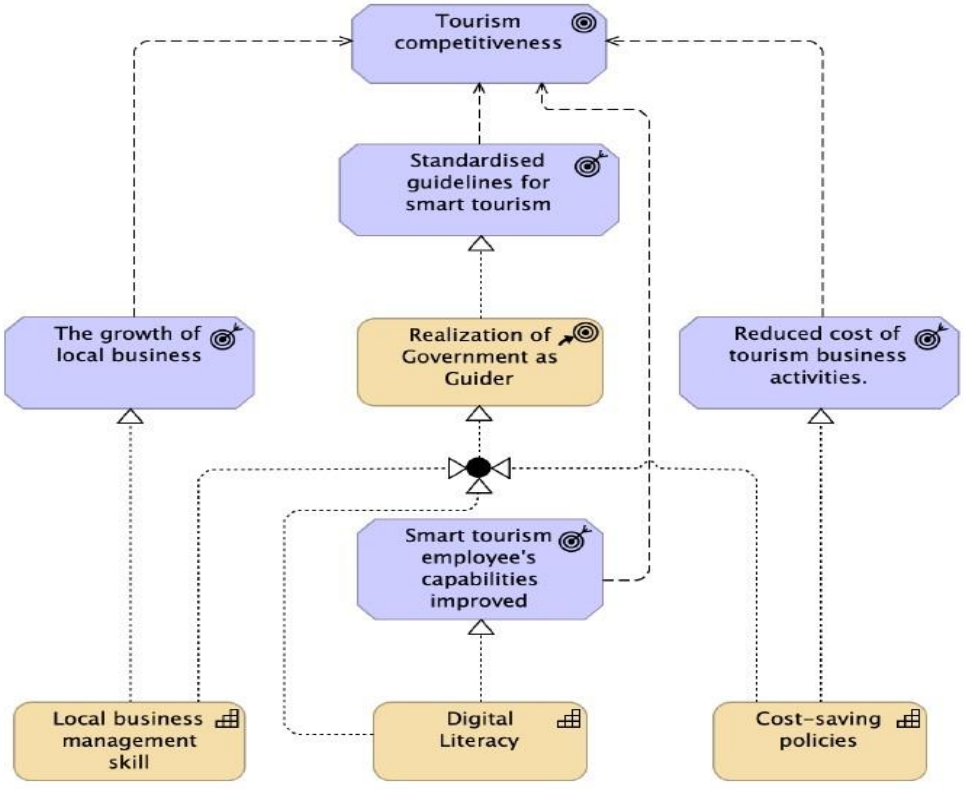

Figure 5: Smart Tourism Strategy Viewpoint
(**Source:** Renata Guizzardi - Silva Souza, João Rebelo Moreira, Luiz Bonino da Silva Santos, M. Sundman and Adina Aldea, 2024).

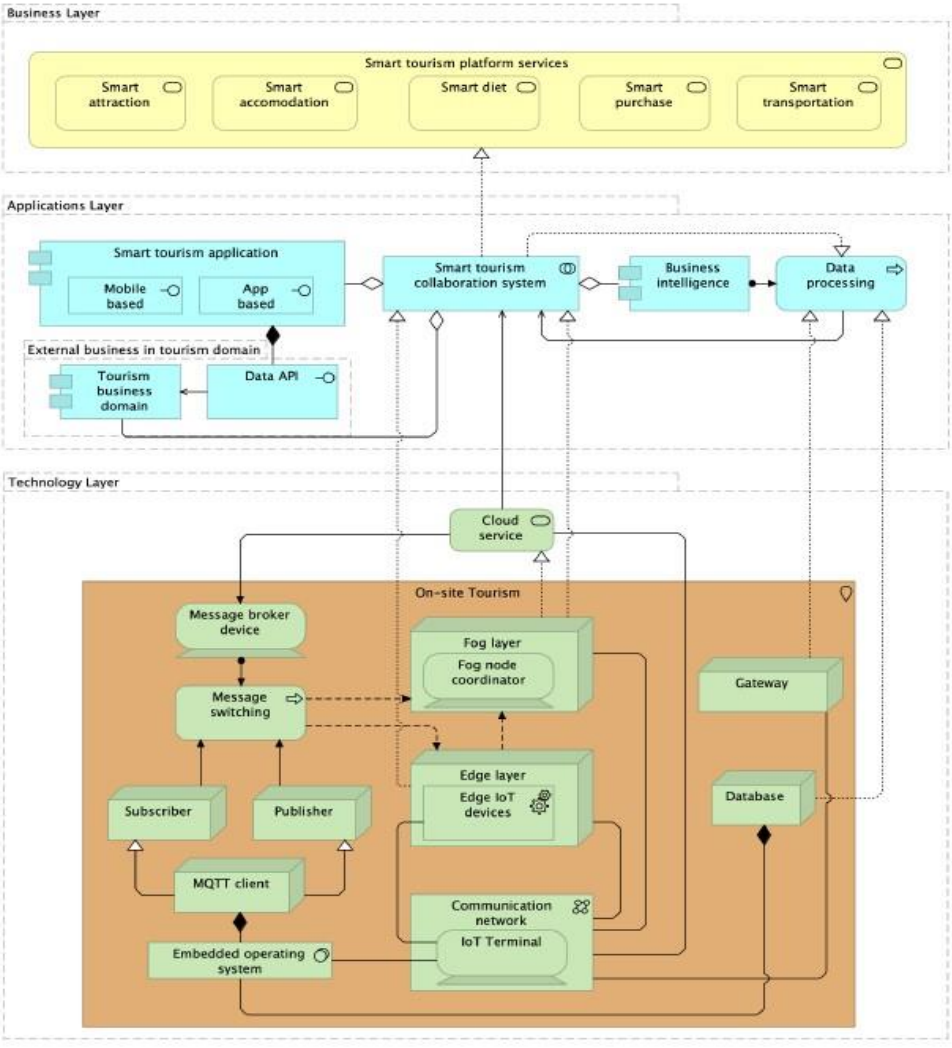

Figure 6: Smart Tourism Platform Reference Architecture Total Viewpoint. (**Source:** Renata Guizzardi - Silva Souza, João Rebelo Moreira, Luiz Bonino da Silva Santos, M. Sundman and Adina Aldea, 2024).

4.2 Analytical Approach for Field Study

To examine the impact of smart tourism on service quality in the Dutch economy, a comprehensive analytical strategy is employed, combining both qualitative and quantitative methods for data collection. The research begins with a systematic literature review to establish a theoretical framework, identifying existing knowledge about smart tourism practices and their influence on service quality. This foundational step anchors the analysis in relevant academic discussions.

In the analytical phase, structured questionnaires are distributed to a representative sample of stakeholders within the Dutch tourism sector. These questionnaires are designed based on previously identified theories and

frameworks, ensuring they align with current industry practices. By employing a Likert scale format respondents can express their views on various aspects of smart tourism implementation particularly focusing on improvements in service quality and customer satisfaction.

In addition to quantitative data from the questionnaires qualitative interviews are conducted with industry experts and practitioners. These interviews aim to provide deeper insights into how digital technologies enhance tourist experiences. Using a semi-structured format allows interviewers to explore emerging themes while addressing key questions related to the research objectives.

The combination of qualitative and quantitative data enhances the reliability of the findings allowing for triangulation across different sources. Once the data is collected, statistical methods analyze survey responses, revealing trends and correlations between smart tourism practices and perceived enhancements in service quality.

Moreover, thematic analysis is applied to qualitative data from interviews enabling an exploration of stakeholders' perspectives on challenges faced when integrating smart solutions within their organizations. This comprehensive analytical approach aims to generate actionable insights that can refine smart tourism practices throughout the Netherlands, promoting improved service delivery and heightened customer satisfaction in the tourism sector. (Renata Guizzardi - Silva Souza, João Rebelo Moreira, Luiz Bonino da Silva Santos, M. Sundman and Adina Aldea, 2024, p. 11-15, p 91-95, and B. H. Ye, H. Ye and R. Law, 2020).

5. Data Collection and Analysis

After presenting the methodology adopted in this research paper, the following points will be addressed in this element:

- Design of Questionnaire
- Analysis of Responses from Participants

5.1 Design of Questionnaire

When designing a questionnaire to assess the impact of smart tourism on service quality, it is essential to include key components relevant to both travelers and service providers. The questionnaire should comprise a mix of closed-ended and open-ended questions to collect quantitative data alongside qualitative insights. Begin with demographic questions to gather information about participants' age, gender, nationality, travel frequency, and preferred tourism services. This foundational data will help contextualize responses related to smart tourism experiences.

The core of the questionnaire should explore several vital themes: awareness and use of digital technologies in tourism (like mobile apps for bookings or digital guides); perceived improvements in service quality due to these technologies; satisfaction with specific smart services (such as online check-in systems or augmented reality experiences); and overall enhancements in user experiences associated with technological innovations.

Utilizing a Likert scale (e.g., 1-5) can effectively measure participants' agreement or satisfaction regarding various aspects of smart tourism. Additionally, including hypothetical scenarios where respondents express their preferences or suggest new digital services could provide valuable insights.

To gather insights from service providers, the questionnaire should examine their current technological capabilities, challenges faced in adopting smart solutions, perceptions of customer expectations for digital services, and any training or resources needed for successful integration.

Conducting a pilot test of the questionnaire with a small group before broader distribution is recommended. This allows researchers to refine questions based on feedback regarding clarity and relevance. Using straightforward and culturally sensitive language will improve response rates and enhance data quality across diverse respondents.

By carefully structuring the questionnaire around these focal areas, researchers can obtain substantial data reflecting both tourist satisfaction with smart solutions and the operational challenges service providers encounter within the Dutch tourism sector. (Renata Guizzardi – Silva Souza, João Rebelo Moreira, Luiz Bonino da Silva Santos, M. Sundman and Adina Aldea, 2024, p. 1-5, p. 106-110, p. 96-100, p. 101-105, and B. H. Ye, H. Ye and R. Law, 2020).

5.2 Analysis of Responses from Participants

The evaluation of participant feedback reveals significant insights into experiences with smart tourism. Many respondents highlighted how digital innovations such as mobile applications and online platforms have greatly enhanced their travel experiences. These technologies facilitate real-time access to information about destinations, accommodations, and activities, resulting in a more streamlined journey.

Participants also noted that smart tourism initiatives have improved personalization in their travels. Customized recommendations based on individual preferences and past behaviors were frequently cited as valuable features of smart tourism platforms. This level of individualization not only addresses specific desires but also fosters a deeper connection between travelers and the places they visit.

However, the survey identified some challenges faced by travelers using these technologies. A number of respondents expressed feeling overwhelmed by the abundance of digital options available for organizing and navigating their trips. This indicates an opportunity for improvement, suggesting that tourism organizations should focus on providing clearer guidance or more user-friendly interfaces to assist users effectively.

Additionally, concerns regarding data privacy emerged among participants, who recognized the delicate balance between enjoying personalized experiences and ensuring the security of their personal information. There is a clear demand for transparency in how personal data is managed within smart tourism networks.

Overall, participants exhibited optimism about the future integration of smart technology in tourism, provided that challenges related to usability and privacy are adequately addressed. These insights emphasize the necessity for ongoing communication between tourists and service providers to continually refine and enhance travel offerings. (P. Liberato, D. Liberato and E. Alen, 2018, and J. Wang, C. Xie, Q. Huang and Alastair M. Morrison, 2020, and S. Yang, L. Yumeng and Y. Ziqi, 2022).

6. Findings from Field Study

After presenting the adopted methodology and study samples, we will now discuss the results of the field study and the basic insights on comparing some competitors' offers, where:

- Key Insights on Digital Service Impacts
- Comparison with Competitor Offerings in Smart Tourism

6.1 Key Insights on Digital Service Impacts

The integration of digital services in smart tourism is transforming how destinations engage with travelers, significantly enhancing service quality. Key advancements include the use of Artificial Intelligence which enables personalized travel experiences by analyzing visitor preferences and providing tailored recommendations. This customization increases visitor satisfaction as tourists feel their individual needs are recognized fostering loyalty and encouraging repeat visits.

Innovations such as the Internet of Things (IoT) contribute to real-time updates that enhance operational efficiency across tourism services. Smart devices can monitor visitor traffic, manage hotel inventories, and optimize transportation routes based on current conditions. These developments not only improve tourists' overall experiences but also facilitate effective resource management, reducing congestion in popular areas and promoting sustainable travel practices.
Big data analytics play a crucial role in understanding consumer behavior trends. By examining social media interactions and customer reviews, tourism businesses gain valuable insights into traveler preferences and concerns. This information allows them to adapt their offerings proactively, resulting in higher customer satisfaction levels.

Additionally augmented reality applications are changing how travelers interact with their surroundings. These technologies provide immersive experiences that enrich sightseeing or educational visits to cultural landmarks. By making information more accessible and enjoyable, AR enhances tourist engagement. A growing emphasis on sustainability within smart tourism reflects travelers' increasing environmental awareness. Digital platforms can facilitate eco-friendly decisions by highlighting sustainable options, such as green accommodations and low-impact activities. Overall, these technological innovations not only elevate the tourist experience but also set new standards for service excellence in the tourism industry. (P. D. Vecchio, G. Mele, V. Ndou and G. Secundo, 2018, and H. Kusumastuti, D. Pranita, M. Viendyasari, M. S. Rasul and S. Sarjana, 2024, and From data privacy to environmental sustainability, 2024, and B. H. Ye, H. Ye and

R. Law, 2020, and A. Santos-Júnior, F. Almeida-García, P. Morgado and L. Mendes-Filho, 2020).

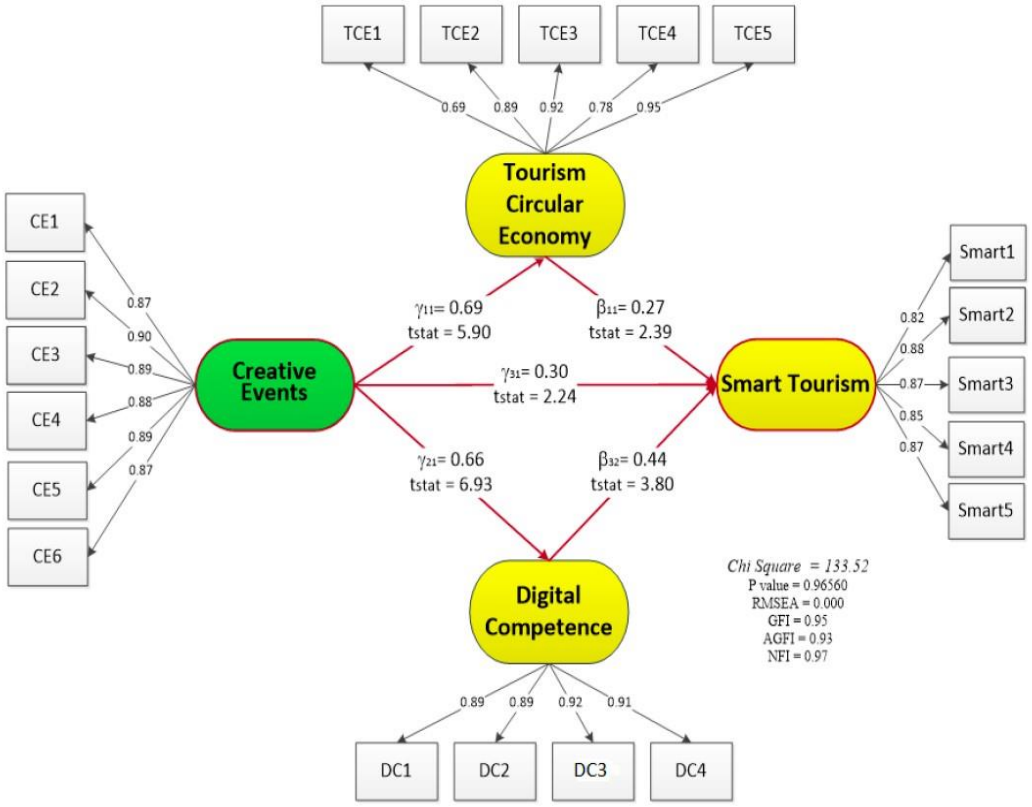

Figure 7: Structural Model Analysis.
(**Source:** H. Kusumastuti, D. Pranita, M. Viendyasari, M. S. Rasul and S. Sarjana, 2024).

Table 1: Measurement model testing results

Variable	**Indicators**	**Code**	**Standardized Loading (L)**	**t**	**Prob.**	**Construct Reliability (CR)**	**Average Variance Extracted (AVE)**
Creative Events	Tangible Environment	CE1	0.87	9.6	0	0.96	0.78
Social Cohesion	CE2	0.9	9.98	0			
Innovative Novel	CE3	0.89	9.78	0			
Concept							
Sense of	CE4	0.88	9.73	0			
Professionalism							
Local Wisdom	CE5	0.89	9.85	0			
Content							
Special Performance	CE6	0.87	9.62	0			
Tourism	Preservation	TCE1	0.69	-	-	0.93	0.73

Circular Economy	of						
Resources							
Green Technology Adoption	TCE2	0.89	6.03	0			
Environmental Stewardship	TCE3	0.78	5.6	0			
Waste Management	TCE4	0.94	6.16	0			
Variable	**Indicators**	**Code**	**Standardized Loading (L)**	**t**	**Prob.**	**Construct Reliability (CR)**	**Average Variance Extracted (AVE)**
Sustainable	TCE5	0.95	6.19	0			
Environment							
Digital Competence	Information Handling	DC1	0.89	-	-	0.95	0.81
Social Networking	DC2	0.89	7.3	0			
Content Creation	DC3	0.92	7.48	0			
Safety Concern	DC4	0.91	7.45	0			
Post-Smart Tourism	Digital Experience	Smart1	0.82	-	-	0.93	0.74
Smart Business Ecosystem	Smart2	0.88	7.2	0			
Technological	Smart3	0.87	7.15	0			
Infrastructure							
Interactive	Smart4	0.85	7.04	0			
Communication							
Real-Time	Smart5	0.87	7.18	0			
Information							

(**Source:** H. Kusumastuti, D. Pranita, M. Viendyasari, M. S. Rasul and S. Sarjana, 2024)

6.2 Final Summary:

From the previous table, the following points can be concluded:

1. **Community Empowerment:**
    - **Social Participation (CE1)**: Exhibits a strong correlation score of 0.91, demonstrating the significant impact of community involvement in empowerment initiatives. The reliability (CR) is high at 0.96, with an average variance extracted (AVE) of 0.78, indicating that social participation effectively represents the underlying construct.
    - **Local Knowledge (CE2)**: Strongly correlates at 0.88, emphasizing the crucial role of local insights in community development. The CR is also 0.96, and the AVE is 0.78, showing reliability and good variance explanation.
    - **Cultural Identity (CE3)**: With a correlation of 0.89, it underscores the importance of cultural heritage in community empowerment. Reliability and AVE remain consistent at 0.96 and 0.78, respectively.
    - **Code of Conduct (CE4)**: Shows a strong correlation of 0.88. This indicates the value of established norms in fostering community

trust and engagement, with good CR and AVE scores. o **Local Wisdom Content (CE5)**: Correlates at 0.89, reflecting the significance of incorporating local traditions and practices into community initiatives. It also maintains high reliability and descent AVE.

- **Special Performance (CE6)**: Slightly lower at 0.87, yet still indicates a strong relationship with community empowerment efforts, backed by a solid CR and AVE.

2. **Tourism Circular Economy:**
   - **Preservation of Resources (TCE1)**: A lower correlation score of 0.69 suggests that while it's important, it may not be as strongly connected to the overall circular economy concept. The high CR of 0.93 and AVE of 0.73 indicate decent reliability and variance explanation.
   - **Green Technology Adoption (TCE2)**: High correlation at 0.89, crucial for sustainable tourism development. Reliability (CR = 0.93) and AVE (0.73) suggest that this factor effectively contributes to the circular economy strategy.
   - **Environmental Stewardship (TCE3)**: With a score of 0.78, it stresses the value of responsible resource use. The metrics indicate it has good reliability and variance explanation. o **Waste Management (TCE4)**: Remarkably high correlation of 0.94 implies it is a critical component of the circular economy, with good reliability (CR = 0.93) and AVE (0.73).
   - **Sustainable Environment (TCE5)**: The highest correlation at 0.95 highlights its foundational role in the tourism circular economy concept, matching with a solid reliability score (CR = 0.93) and variance representation.

3. **Digital Competence:**
   - **Information Handling (DC1)**: Strong correlation of 0.89 indicates the importance of managing information in digital environments. High reliability (CR = 0.95) and AVE (0.81) show that it effectively captures the aspect of digital competence.
   - **Social Networking (DC2)**: Also scores 0.89, suggesting the significance of social platforms in digital engagement and communication. It maintains high reliability and variance explanation. o **Content Creation (DC3)**: Exhibiting a strong correlation of 0.92, this highlights the capacity to produce engaging digital content as vital for digital competence with solid reliability and AVE scores.
   - **Safety Concern (DC4)**: Correlates at 0.91, stressing the necessity of ensuring user safety in digital interactions; reliable and effective in variance explanation.

4. **Post-Smart Tourism:**
   - **Digital Experience (Smart1)**: Good correlation of 0.82 reflects the importance of digital experiences in enhancing tourism; it maintains good reliability and AVE.

- **Smart Business Ecosystem (Smart2)**: High correlation of 0.88 emphasizes the interconnectedness of businesses in utilizing digital technology effectively. High reliability is evident in CR and AVE.
- **Technological Infrastructure (Smart3)**: Scoring 0.87, this highlights the necessity of robust technological frameworks in supporting digital tourism, backed by reliability and variance metrics.
- **Interactive Communication (Smart4)**: Achieves a correlation of 0.85, reflecting the importance of two-way communication in enhancing tourist engagement and experience. o **Real-Time Information (Smart5)**: A correlation of 0.87 signifies its critical role in providing timely information to tourists, reinforcing the need for effective communication channels.

Overall Insights:

- **Correlation Strength**: The majority of indicators demonstrate strong to very strong correlations, particularly in community empowerment, sustainable tourism practices, and digital competence areas, indicating that these elements are significantly interconnected.
- **Statistical Significance**: All indicators exhibit clear statistical significance (Prob. = 0), reinforcing their relevance in their respective constructs.
- **Reliability**: Most variable indicators possess high reliability (CR exceeding 0.90), suggesting consistent measurements across different samples.
- **Variance Explanation**: High AVE values (> 0.70) across most indicators imply that they adequately capture the variance in their respective constructs.

This comprehensive analysis underscores the importance of these areas in promoting robust community engagement and sustainable tourism practices, emphasizing the interrelatedness among them.

6.3 Comparison with Competitor Offerings in Smart Tourism

The analysis of smart tourism in the Netherlands highlights the need for local providers to continuously innovate to remain competitive in a dynamic marketplace. Many Dutch destinations are implementing advanced technologies like artificial intelligence the Internet of Things and big data analytics to enhance service delivery. For example, several cities in the Netherlands are adopting smart city models that use real-time data to better manage tourist flows, addressing issues such as over tourism and its environmental impacts.

In contrast, other countries are also utilizing similar technologies but may offer unique advantages. Northern European locations, for instance, are employing augmented reality (AR) applications to create engaging historical experiences, giving them a competitive edge over their Dutch counterparts. Additionally, there is a strong emphasis on sustainability in various competing destinations, where smart tourism initiatives focus on resource conservation and community engagement—areas that present opportunities for improvement within the Dutch tourism sector.

Moreover, while many rival destinations prioritize personalization through advanced customer relationship management systems powered by big data, some players in the Netherlands still rely on traditional methods that may not adequately cater to the preferences of modern travelers. This gap indicates potential growth areas for the Dutch tourism industry.

To remain relevant and competitive internationally, Dutch tourism organizations must adapt by integrating innovative digital solutions into their services and promoting collaboration among stakeholders. By fostering a culture of continuous improvement and more fully embracing new technologies than their competitors, they can enhance service quality and customer satisfaction in the realm of smart tourism. (Renata Guizzardi - Silva Souza, João Rebelo Moreira, Luiz Bonino da Silva Santos, M. Sundman and Adina Aldea, 2024, p. 101-105, From data privacy to environmental sustainability, 2024, and M. Zsarnoczky, 2020, and A. Kontogianni, E. Alepis, M. Virvou and C. Patsakis, 2024).

7. Recommendations for Tourism Organizations in the Netherlands

Through the statistical study that was addressed and the clarification of the status of smart tourism in Ireland and its impact on tourism services, and with the intensity of competition between companies operating in this sector, we must necessarily address the following points:

- Strategies for Adopting Smart Tourism Practices
- Continuous Improvement Initiatives for Digital Services

7.1 Strategies for Adopting Smart Tourism Practices

Tourism entities in the Netherlands can significantly improve their operational efficacy through the adoption of intelligent tourism practices by executing a holistic strategy that emphasizes collaboration, technological integration, and community engagement. A cooperative model that incorporates local governmental bodies, commercial enterprises, and technological providers is imperative for nurturing innovation and facilitating resource sharing within the tourism sector. At the heart of this collaborative effort is the creation of a digital platform that enables unobstructed communication and data interchange among diverse stakeholders. The allocation of resources towards training programs aimed at enhancing digital literacy for employees and stakeholders is crucial as technological advancements increasingly shape tourism services. Empowering individuals with the competencies to proficiently utilize these tools is essential for the success of smart tourism initiatives. Furthermore, actively engaging with local communities is essential to ensure that tourism endeavors resonate with cultural values and adequately address community requirements. The implementation of sophisticated technologies, such as Internet of Things devices, can significantly elevate visitor experiences by providing tailored services and real-time information. For example, IoT applications can enhance crowd management at highly frequented attractions by offering visitors timely updates regarding wait times and less congested pathways. This technological integration not only augments the quality-of-service delivery but also promotes sustainability through the efficient utilization of resources.

Marketing strategies should leverage digital channels to reach wider audiences efficiently. Utilizing social media and creating engaging content can attract potential visitors while emphasizing unique local offerings. Moreover, adopting an agile approach allows organizations to quickly respond to emerging trends and customer feedback.

To ensure the effectiveness of these transitions, it is crucial for organizations to regularly assess their smart tourism strategies against established benchmarks. This ongoing evaluation promotes continuous improvement and adaptation to technological advancements and evolving consumer expectations. By embracing these practices, tourism entities can create a more innovative, inclusive, and sustainable tourism environment in the Netherlands. (Renata Guizzardi - Silva Souza, João Rebelo Moreira, Luiz Bonino da Silva Santos, M. Sundman and Adina Aldea, 2024, p 11-15, p 76-80, p 36-40, p 91-95, p 101-105).

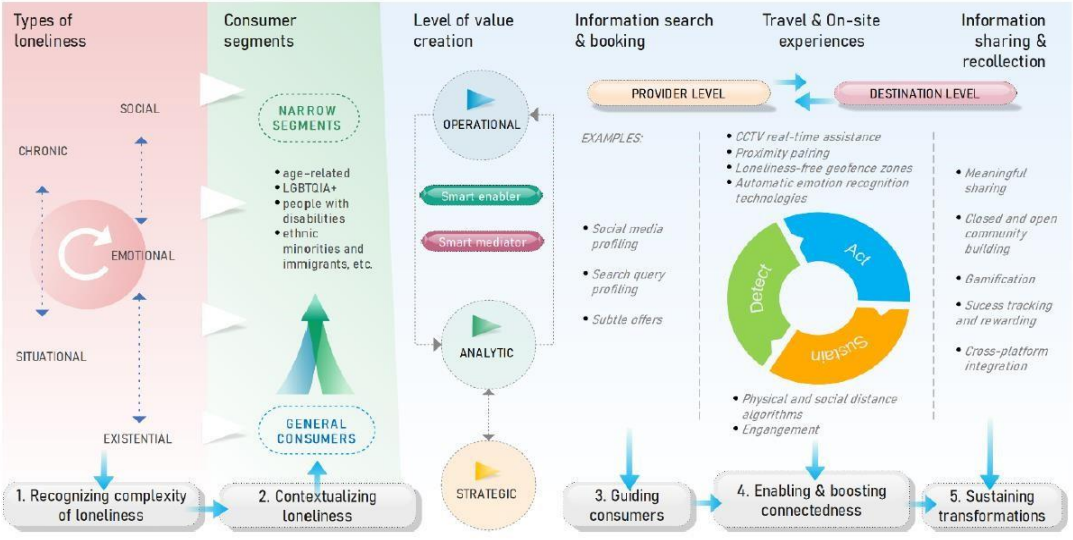

Figure 8: Baseline of Application Usage Viewpoint
(**Source:** Renata Guizzardi - Silva Souza, João Rebelo Moreira, Luiz Bonino da Silva Santos, M. Sundman and Adina Aldea, 2024).

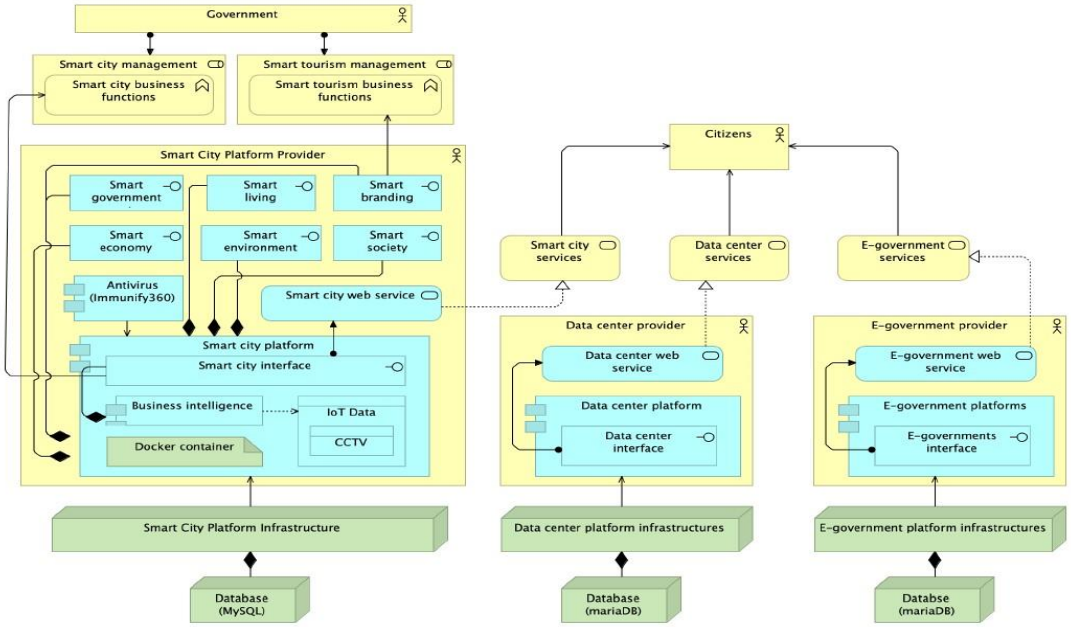

Figure 9: Framework for designing a loneliness-sensitive smart tourism ecosystem (LoSSTE) Full size image
(**Source:** U. Stankov, U. Gretzel, Miroslav D. Vujičić, V. Pavluković, T. Jovanović, M. Solarević and M. Cimbaljević, 2022)

The illustration delineates an extensive theoretical model for comprehending the phenomenon of loneliness and its ramifications on consumer experiences within the domains of tourism and service industries. It differentiates among various forms of loneliness, including social and emotional dimensions, thereby underscoring the significance of acknowledging individual sentiments and their consequent effects on experiential outcomes. The model emphasizes vulnerable consumer demographics, such as the LGBTQIA+ population and individuals with disabilities, reflecting an imperative to cater to their unique requirements. The creation of value is categorized into operational and analytical tiers to facilitate the provision of customized solutions. The processes of information retrieval and reservation integrate contemporary technological advancements to augment user experiences while fostering information dissemination and community engagement. The concept of sustainability accentuates the necessity of preserving affirmative social transformations, whereas the iterative cycle of "Detect, Act, sustain" highlights the critical nature of dynamic interactions. This theoretical model is relevant across diverse disciplines, advocating for the enhancement of human connections and the elevation of overall well-being.

7.2 Continuous Improvement Initiatives for Digital Services

Ongoing enhancement initiatives in digital services are crucial for elevating service quality and enriching the visitor experience within the tourism sector. Organizations must integrate advanced technologies such as Internet of Things devices artificial intelligence and data analytics to gather real-time insights into

tourist behaviors and preferences. This information is essential for customizing services to meet individual needs thereby increasing customer satisfaction.

Collaboration among various stakeholders is also vital. By utilizing co-marketing strategies, organizations can share resources, exchange insights, and create unified marketing campaigns that enhance the visibility of different destinations. Regular training sessions should be conducted to improve the digital skills of stakeholders and familiarize them with emerging technologies that can enhance service delivery.

The establishment of feedback channels constitutes a critical strategic approach. Facilitating the expression of tourists' experiences via surveys or social media platforms empowers organizations to pinpoint domains requiring enhancement while simultaneously showcasing a dedication to customer satisfaction. Furthermore, the formulation of adaptable frameworks permits prompt modifications in response to consumer feedback, thereby resulting in more efficacious service improvements.

Investment in technology should not be limited to initial implementation but should also, include ongoing maintenance and updates. Regular evaluations of digital tools ensure their continued relevance and effectiveness in meeting market demands. Promoting a culture of continuous learning encourages employees to stay updated on technological advancements positioning the organization as a leader in smart tourism.

Sustainability must be prioritized as organizations adopt practices aligned with circular economy principles. This approach promotes resource optimization and aims to minimize environmental impact, which is increasingly important to modern travelers. By integrating sustainable practices into their digital services, tourism organizations can attract eco-conscious consumers and differentiate themselves from competitors. (P. D. Vecchio, G. Mele, V. Ndou and G. Secundo, 2018, and Renata Guizzardi - Silva Souza, João Rebelo Moreira, Luiz Bonino da Silva Santos, M. Sundman and Adina Aldea, 2024, p. 76-80, and F. Yin, X. Yin, J. Zhou, X. Zhang, R. Zhang, E. Ibeke, M. G. Iwendi and M. Shah, 2022, and H. Kusumastuti, D. Pranita, M. Viendyasari, M. S. Rasul and S. Sarjana, 2024, and Renata Guizzardi - Silva Souza, João Rebelo Moreira, Luiz Bonino da Silva Santos, M. Sundman and Adina Aldea, 2024, p. 91-95, and U. Stankov, U. Gretzel, Miroslav D. Vujičić, V. Pavluković, T. Jovanović, M. Solarević and M. Cimbaljević, 2022).

8. Challenges Faced by Tourism Sector in Adopting Smart Solutions

Finally, after the results reached through a sample study and analysis of the results, we can conclude the challenges facing smart tourism in order to improve tourism services, especially in Ireland, where the following points are addressed:

- Resistance to Change within Organizations
- Financial Constraints and Investments Needed

8.1 Resistance to Change within Organizations

Resistance to change in tourism organizations often stems from a blend of cultural inertia, established procedures, and apprehensions about adopting new technologies. Many organizations remain rooted in traditional operational models, which fosters reluctance to embrace innovative practices associated with smart tourism technologies. This hesitance is further intensified by fears of disruptions that new systems may cause to existing workflows.

Additionally, employees might struggle with digital tools, leading to anxiety about their ability to adapt. This issue is particularly acute in environments where digital literacy levels among staff vary significantly. While training programs are crucial, resistance can persist if employees do not see clear benefits or positive outcomes from the technological changes.

Financial constraints also play a pivotal role in this resistance. The initial costs of updating technology can be daunting, prompting organizations to prioritize short-term financial stability over long-term innovations that could enhance service quality and competitive advantage. Furthermore, the typically rigid budgeting practices in many tourism organizations make it challenging to allocate funds for transformative initiatives without extensive justification.

Leadership styles within these organizations can contribute to the resistance as well. Leaders who are riskaverse or lack a proactive vision for incorporating smart technologies into their strategic frameworks create an environment where innovation struggles to flourish. Moreover, insufficient communication regarding the advantages of adopting smart tourism practices can breed skepticism among employees about forthcoming organizational changes.

To effectively tackle this resistance, organizations must implement proactive strategies. Fostering an innovative culture, providing comprehensive training programs, sharing success stories from early adopters, and securing strong leadership support for technological advancements are critical elements in this transformation process. By addressing these factors, tourism organizations can better navigate the challenges associated with change and move toward a more technologically integrated future. (Renata Guizzardi - Silva Souza, João Rebelo Moreira, Luiz Bonino da Silva Santos, M. Sundman and Adina Aldea, 2024, p. 11-15, S. K. Bhoda, 2024, and Renata Guizzardi - Silva Souza, João Rebelo Moreira, Luiz Bonino da Silva Santos, M. Sundman and Adina Aldea, 2024, p. 36-40).

8.2 Financial Constraints and Investments Needed

The transition to smart tourism presents significant financial challenges and investment needs for tourism organizations. Initially, the costs of upgrading infrastructure can be substantial requiring investments in advanced technologies such as Internet of Things devices mobile applications and data analytics systems. These financial burdens can be particularly overwhelming for smaller businesses or those in developing regions, limiting their ability to adopt smart tourism strategies.

Beyond initial expenditures, ongoing maintenance and operational costs further complicate the financial landscape. Organizations must allocate funds not only for new technologies but also for employee training, cybersecurity measures, and regular updates to ensure optimal and secure system performance. The lack of specialized expertise among local governments exacerbates these challenges, as insufficient knowledge can hinder effective implementation and maintenance of smart solutions, leading to wasted resources.

To mitigate these financial pressures public private partnerships can be a viable solution. Collaborating with technology providers and local governments allows tourism entities to share the burden of initial costs while fostering an innovative environment. Additionally, funding opportunities through government grants or initiatives aimed at improving digital literacy can provide critical support for smaller businesses.

It is imperative for stakeholders to acknowledge that despite the initial financial commitments appearing formidable, the enduring advantages of embracing intelligent tourism methodologies—such as improved consumer experiences and heightened operational efficacy—can yield substantial returns on investment. Consequently, a methodical strategy prioritizing incremental execution can assist organizations in adeptly navigating their fiscal obstacles as they evolve toward more sophisticated tourism frameworks. (Renata Guizzardi - Silva Souza, João Rebelo Moreira, Luiz Bonino da Silva Santos, M. Sundman and Adina Aldea, 2024, p. 86-90, and S. K. Bhoda. 2024, and Renata Guizzardi - Silva Souza, João Rebelo Moreira, Luiz Bonino da Silva Santos, M. Sundman and Adina Aldea, 2024, p. 31-35)

9. Conclusion

9.1 Summary of Key Findings

The implementation of innovative smart tourism methodologies significantly enhances the overall engagement of travelers while concurrently benefiting the service quality across the Dutch economy. By harnessing digital advancements, tailored experiences can be crafted to accommodate a diverse spectrum of tourist inclinations, ultimately culminating in elevated levels of satisfaction. Moreover, the utilization of real-time data analytics augments resource management and informs the decision-making strategies of stakeholders within the tourism industry.

Furthermore, the adoption of intelligent solutions aligns effortlessly with rising consumer anticipations for seamless digital interaction and accessibility. Tourist organizations that embrace these technological advancements are more adept at meeting customer expectations while optimizing their service delivery frameworks. Scholarly research underscores that possessing digital competencies is crucial for tourism providers striving to maintain competitiveness in a swiftly changing landscape.

Nonetheless, the sector continues to encounter a range of challenges certain organizations demonstrate reluctance in accepting change, thereby impeding the

integration of novel technologies. Additionally, financial constraints complicate this transition, as the initial investment required for smart solutions may deter smaller enterprises from fully engaging with state-of-the-art practices.

In conclusion, although the prospective benefits of smart tourism are substantial—enhancing both traveler experiences and operational efficiency—addressing the obstacles faced by tourism organizations is imperative for achieving sustainable success within this domain. (Renata Guizzardi - Silva Souza, João Rebelo Moreira, Luiz Bonino da Silva Santos, M. Sundman and Adina Aldea, 2024, p. 101-105, and A. Santos-Júnior, F. AlmeidaGarcía, P. Morgado and L. Mendes-Filho, 2020, OECD Tourism Trends and Policies 2020, 2024, and H. Kusumastuti, D. Pranita, M. Viendyasari, M. S. Rasul and S. Sarjana, 2024).

9.2 Future Directions for Research in Smart Tourism

Research pertaining to smart tourism is increasingly concentrating on several pivotal domains to effectively advance the discipline. A principal emphasis is placed on the investigation of artificial intelligence and automation within the tourism sector. This encompasses an examination of how these technologies can enhance operational efficacy, elevate customer experiences, and promote sustainable practices. It is critical to formulate frameworks that guarantee the ethical employment of AI, particularly in relation to data privacy and security.

Moreover, the societal ramifications of smart tourism technologies necessitate consideration. The COVID19 pandemic has exacerbated feelings of isolation providing an opportunity for smart tourism to engender positive outcomes. Future inquiries should explore technological designs that foster more interconnected and engaging travel experiences, with the objective of mitigating travelers' feelings of isolation.

Additionally, the integration of local values into smart tourism is essential for advancing sustainability. Research should concentrate on how local communities can capitalize on their distinctive cultural heritage within smart tourism frameworks, thereby enriching visitor experiences while safeguarding authenticity.

Lastly, adopting interdisciplinary approaches is crucial for a deeper understanding of tourist behaviors and perceptions regarding these technologies. Combining insights from psychology with technology studies can shed light on how travelers adapt to and embrace innovations that shape their travel experiences. By prioritizing these areas, future research can contribute significantly to creating actionable strategies that enhance tourist satisfaction and strengthen the overall sustainability of the industry. (H. Kusumastuti, D. Pranita, M. Viendyasari, M. S. Rasul and S. Sarjana, 2024, Renata Guizzardi - Silva Souza, João Rebelo Moreira, Luiz Bonino da Silva Santos, M. Sundman and Adina Aldea, 2024, p. 96-100, and I. Tussyadiah, 2020, and Renata Guizzardi - Silva Souza, João Rebelo Moreira, Luiz Bonino da Silva Santos, M. Sundman and Adina Aldea, 2024, p. 101-105, U. Stankov, U. Gretzel, Miroslav D. Vujičić, V. Pavluković, T. Jovanović, M. Solarević, and M. Cimbaljević, 2022, and B. H. Ye, H.

Ye and R. Law, 2020, and A. Santos-Júnior, F. Almeida-García, P. Morgado and L. MendesFilho, 2020).

10. References

[1] D. Apriyandi, Dr. Renata Guizzardi - Silva Souza, Dr. João Rebelo Moreira, Dr. Luiz Bonino da Silva Santos, M. Sundman and Dr. Adina Aldea. "A Smart Tourism Platform Reference Architecture for Developing Countries". Jan 2024. [Online]. Available: http://essay.utwente.nl/98352/1/Apriyandi_MA_EEMCS.pdf

[2] H. Kusumastuti, D. Pranita, M. Viendyasari, M. S. Rasul and S. Sarjana. "Leveraging Local Value in a Post-Smart Tourism Village to Encourage Sustainable Tourism". Jan 2024. [Online]. Available: https://www.mdpi.com/2071-1050/16/2/873

[3] B. H. Ye, H. Ye and R. Law. "Systematic Review of Smart Tourism Research". Jan 2020. [Online]. Available: https://www.mdpi.com/2071-1050/12/8/3401

[4] S. K. Bhoda. "Smart Tourism: Blending History with Future Tech for Travelers". Jan 2024. [Online]. Available: https://www.linkedin.com/pulse/smart-tourism-enhancing-visitor-experiences-throughtechnology-bhoda-nwl1c

[5] U. Stankov, U. Gretzel, Miroslav D. Vujičić, V. Pavluković, T. Jovanović, M. Solarević and M. Cimbaljević. "The pandemic of loneliness: designing smart tourism for combating loneliness". Dec 2022. [Online]. Available: https://link.springer.com/article/10.1007/s40558-022-00234-9

[6] "OECD Tourism Trends and Policies 2020". (accessed Nov 15, 2024). [Online]. Available: https://www.oecd-ilibrary.org/urban-rural-and-regional-development/oecd-tourism-trends-and-policies2020_6b47b985-en

[7] A. Santos-Júnior, F. Almeida-García, P. Morgado and L. Mendes-Filho. "Residents' Quality of Life in Smart Tourism Destinations: A Theoretical Approach". Jan 2020. [Online]. Available: https://www.mdpi.com/2071-1050/12/20/8445

[8] F. Yin, X. Yin, J. Zhou, X. Zhang, R. Zhang, E. Ibeke, M. G. Iwendi and M. Shah. "Tourism cloud management system: the impact of smart tourism". May 2022. [Online]. Available: https://journalofcloudcomputing.springeropen.com/articles/10.1186/s13677-022-00316-3

[9] I. Tussyadiah. "A review of research into automation in tourism: Launching the Annals of Tourism Research Curated Collection on Artificial Intelligence and Robotics in Tourism". Jan 2020. [Online]. Available: https://www.sciencedirect.com/science/article/abs/pii/S016073832030027X

[10] A. Kontogianni, E. Alepis, M. Virvou and C. Patsakis. "Smart Tourism–The Impact of Artificial Intelligence and Blockchain". (accessed Nov 15, 2024). [Online]. Available: https://link.springer.com/book/10.1007/978-3-031-50883-7

[11] M. Zsarnoczky. "The Digital Future of the Tourism & Hospitality Industry". Jan 2020. [Online]. Available: https://www.bu.edu/bhr/2018/05/31/the-digital-future-of-the-tourism-hospitality-industry/

[12] P. D. Vecchio, G. Mele, V. Ndou and G. Secundo. "Creating value from Social Big Data: Implications for Smart Tourism Destinations". Jan 2018. [Online]. Available: https://www.sciencedirect.com/science/article/pii/S0306457316307270

[13] S. Yang, L. Yumeng and Y. Ziqi. "Proceedings of the 2022 International Conference on Social Sciences and Humanities and Arts (SSHA 2022)". Apr 2022. [Online]. Available: https://www.atlantis-press.com/proceedings/ssha-22/125972525

[14] J. Wang, C. Xie, Q. Huang and Alastair M. Morrison. "Smart tourism destination experiences: The mediating impact of arousal levels". Jan 2020. [Online]. Available: https://www.sciencedirect.com/science/article/pii/S221197362030074X

[15] P. Liberato, D. Liberato and E. Alen. "Smart tourism destination triggers consumer experience: the case of Porto". Jan 2018. [Online]. Available: https://www.emerald.com/insight/content/doi/10.1108/ejmbe-11-2017-0051/full/html

[16] PublicisSapient. "What is Smart Tourism? | Publicis Sapient". (accessed Nov 15, 2024). [Online]. Available: https://www.publicissapient.com/insights/smart-tourism-experiences

[17] "From data privacy to environmental sustainability: Comprehensive perspectives on smart tourism challenges". (accessed Nov 15, 2024). [Online]. Available: https://aber.apacsci.com/index.php/st