

Analysis of the city of Natal/RN as Smart Tourism Destination using the INVAT.TUR model



Daene Silva de Morais Lima - Universidade Federal do Rio Grande do Norte, Brazil
(daenesmorais@hotmail.com)

Luiz Mendes Filho - Universidade Federal do Rio Grande do Norte, Brazil
(luiz.mendesfilho@gmail.com)

Cynthia Harumy Watanabe Correa - Universidade de São Paulo, Brazil
(cynthiacorrea@usp.br)

Verônica Feder Mayer - Universidade Federal Fluminense, Brazil
(veronicamayer@id.uff.br)

ABSTRACT

With the proposal to boost the tourist activity, the advent of Information and Communication Technologies (ICT) has been collaborating in developing the concept of Smart Tourism Destination (STD). In this context, this study analyzed aspects of the city of Natal (Rio Grande do Norte) as a STD. To achieve the research objective, the Spanish model of the Valencian Community, INVAT.TUR was used, which presents indicators as Governance; Sustainability; Accessibility; Connectivity and Sensorization; Information system; and Innovation. Regarding the means of investigation, through a semi-structured script, the research interviewed ten public and private managers related to Natal's tourist activity. The study is descriptive and exploratory and with a qualitative approach through the technique of content analysis. The NVIVO software was used to assist in the analysis of the data. According to the data examined in the research and based on the INVAT.TUR model, Natal is in the embryonic phase as STD. In the interviewed managers' view, despite the high tourism potential, the absence of strategies and actions slow the destination's progress. Therefore, the study concludes that Natal is at a level below than expected from a STD, requiring strategies to boost the destination's development through participatory planning with the various actors of the tourism production chain. Special thanks to CAPES and CNPq, funding agencies, for the resources obtained with the Universal Notice CNPq 01/2016 and a CAPES master's scholarship.

Keywords: Tourism, Smart Tourism Destination, Technology, INVAT.TUR.



INTRODUCTION

In the panorama of technological innovation in global tourism, the perspective of Smart Tourism Destination (STD) stands out, which focuses on improving the tourist experience from the integration and use of Innovation Systems and Information and Communication Technologies (ICT) in an intensive way (Gretzel, Werthner, Koo, & Lamsfus, 2015; SEGITTUR, 2016; Mendes Filho, Silva & Silva, 2019). The concept of STD covers the application of Smart Cities principles, inserted in participatory development grounded on technological innovation to increase the inhabitants' quality of life.

The smart cities have a favorable infrastructural condition for establishing STD, employing ICT and other innovations to provide pleasure and customized experiences to tourists (Jasrotia & Gangotia, 2018; Cimbalević, Stankov, & Pavluković, 2019). It is emphasized that the term "smart" describes different spheres besides smart city and smart tourist destinations, such as smart tourism and smart tourism ecosystem (Mehraliyev, Choi, & Köseoglu, 2019).

Thus, the technology contributes continually to the tourist activity, assisting in managing cities and the STD (INVAT.TUR, 2015). According to Boes, Buhalis, and Inversini (2015), STDs use technological resources and techniques to generate demand and supply to increase the value for the tourist as well as wealth, profit, and benefits for organizations and destinations.

A STD aims to provide tourist facilities through the use of resources and innovative technologies (SEBRAE, 2016). The marketing trend is that organizations linked directly and indirectly to tourism adopt creative and innovative measures to improve tourists and visitors' relations because the actors involved in the process seek connectivity and experiences in real-time (SEBRAE, 2016). There are, therefore, many benefits for tourist destinations, reported by the literature, with the implementation of smart structures. However, transforming a tourist destination into a STD is a challenge for many Brazilian cities. In this perspective, this study aims to investigate the preparation process of Natal, capital of Rio Grande do Norte (RN), to



become a STD, using as a methodological reference the model created by the Valencian Institute of Tourist Technologies - INVAT.TUR (2015).

The choice of Natal/RN justifies by the initiatives promoted to increase the competitiveness and boost the process of consolidation a STD. An example of an initiative was the realization of the Natal Smart and Human City Program. It was possible by signing a cooperation agreement between the city hall, represented by the Municipal Secretariat of Planning, the Federal University of Rio Grande do Norte (UFRN), and the Brazilian Network of Smart and Human Cities (Mendes Filho, Silva & Silva, 2019). Another action was developing the tourism application Visit Natal, in partnership with the UFRN and the Municipal Secretariat of Tourism, aiming to improve traveler's experience in the destination (Cacho et al., 2016).

Rio Grande do Norte is one of the most sought-after destinations in the Northeast region, receiving annually around 2 million visitors from Brazil and the world. The state stands out for the natural beauty; it's 410 kilometers of the Atlantic Coast, composed of beaches, dunes, and lagoons. The capital Natal/RN is known as the City of the Sun and has held many festivities and cultural wealth, bearing Dutch and Portuguese colonization as a historical landmark, as well as a military reference in World War II (SETUR, 2019).

A qualitative approach and data collection through in-depth interviews were chosen to understand implementing a STD. There were interviewed ten public and private managers of Natal/RN to analyze the indicators of INVAT.TUR model (2015): Governance, sustainability, accessibility, connectivity and Sensorization, information system, and innovation. Each indicator served as a methodological resource to evaluate which aspects need to be implemented to develop the capital as a STD.



SMART TOURISM DESTINATIONS (STD)

The STD concept has as a formulation and methodology parameter the categories and pillars built and implemented in European cities (SEBRAE, 2017). The Brazilian Micro and Small Business Support Service (SEBRAE) promotes the country's Smart Tourist Destinations project. For example, in Rio Grande do Norte, the project receives support from the Metr pole Digital Institute (IMD), an agency linked to UFRN in partnership with the Municipal Government of Natal (Mendes Filho, Silva & Silva, 2019). The projects implement actions and strategies based on the STD models. In this stage, public and private organizations join, intending to position the smart destination (SEBRAE, 2017).

Spain reached significant results in tourism in the last decade (INVAT.TUR, 2015). Intending to maintain its positioning, the country has developed as a competitive strategy the STD project aiming to meet the market's, tourists', and visitors' current and future needs, enabling tourists to have an enriching experience in real-time (INVAT.TUR, 2015).

The STD proposal in Spain was initialized in March 2013 by Sociedad Estatal para La gesti n de La Innovaci n y las Tecnolog as Tur sticas (SEGITTUR). That is part of the Ministry of Energy, Tourism, and Digital Agenda and is linked to the State Secretariat of Tourism (SEGITTUR, 2013). The development pillars are based on new information technologies and sustainable tourism development (SEGITTUR, 2016). Development must be associated with characteristics such as accessibility, competitiveness in the tourism sector, sustainable development, innovative tourism space, efficient resource management, interaction and integration, quality of the tourist experience, and advanced technology (SEGITTUR, 2016).

The method for developing destinations, developed by SEGITTUR, has stimulated the definition of pillars and necessary requirements for a STD management system. The standards were related to four pillars: innovation, technology, accessibility, and sustainability, through the development and



implementation of a management policy for the tourist destination, establishing objectives, goals, and action plans (SEGITTUR, 2016).

The tourist destination is innovative when it consolidates in the aspects of technology infrastructure to ensure sustainable development, making it accessible to all, facilitating visitor's interaction and integration with the environment to improve their experience at the destination (SEGITTUR, 2013). However, a purely technological bias is not enough to make a STD successful (Gretzel, 2018; Gretzel, Ham, & Koo, 2018).

As noted by Del Vecchio, Mele, Ndou, and Secundo (2018), the final objective of a STD is to improve the tourism experience, maximizing the competitiveness of the destination and consumer satisfaction with attention to long-term sustainability. A STD is designed around knowledge and offering a technological platform on which information can be exchanged instantaneously (Jovicic, 2019) to support taking assertive decisions (Cimbaljević, Stankov, & Pavluković, 2019). Smart tourism is a development and management mentality or philosophy with severe implications for tourism governance and the destination's strategic orientation (Gretzel, 2018).

In the face of tourist expansion, competitive strategies must be developed to attract new tourists and visitors. According to Mendes Filho, Silva e Silva (2019), technology contributes as a source of innovation, strategic differentiation, and competitive advantage, with technology being a key instrument in co-creating multiple spaces of experience, various levels of engagement, and networks of interaction. Providing the right content to the right consumer, especially in unplanned circumstances, requires more than observing, listening, designing, testing, and creating the expected service (Buhalis & Sinarta, 2019). Consequently, the personalized and co-created experience offers enhanced by ICTs is a factor able to define the success of a STD (Jasrotia & Gangotia, 2018; Cimbaljević, Stankov, & Pavluković, 2019).



MODELS OF STD

The STDs have as its advantage the establishment of a project integrated into technology, which is a leading factor in the evolution of a destination, becoming a trend (Buhalis & Amaranggana, 2013). Mendes Filho, Silva, and Silva (2019) claim that the first step towards a STD project is to diagnose the local reality to identify areas that need improvement to establish a Master Plan for STD. According to the authors, the plan must be integrated with the other municipal plans to link the proposal to other municipal management departments.

The STD plan should outline local needs besides identifying points to be developed efficiently in the destination transformation process. Measurement indicators and criteria may vary according to the destination (Freitas & Mendes Filho, 2020). Becoming a STD is a strategy to expand the destination by proposing to improve the receptivity in natural, historical, and cultural attractions by valuing existing resources and developing innovative resources, contributing to sustainable development through the interaction between visitors and destination (SEGITTUR, 2016).

Based on a bibliographic review, we have observed that there is no consolidated and scientifically validated model of STD in the academic literature so far. However, researchers like Jurin (2008), Avila et al. (2015), Blanco (2015), Santos and Gândara (2016), and Sousa et al. (2016) present methodologies for transforming a traditional destination into a STD. In Spain, a world reference in the theme (INVAT.TUR, 2015; SEGITTUR, 2016), the Valencian Tourism Agency of INVAT.TUR proposed a management model called the Smart Tourist Destinations Project of the Valencian Community (STD - CV), created in 2014 to increase the competitiveness of tourist destinations by developing processes, products, and services, aiming to improve the satisfaction of tourists (INVAT.TUR, 2015). Thus, the INVAT.TUR (2015) model was chosen to guide this research.



THE INVAT.TUR MODEL

The benefits of a tourist destination when becoming a STD are listed in INVAT.TUR documents such as Smart Tourist Destination Management Manual and Operating Manual for Smart Tourist Destinations Setup. For INVAT.TUR (2015), the benefits are:

- i. Advance towards the sustainable development of tourism;
- ii. Integrate governance principles in tourism management;
- iii. Improve efficiency in destination management in all areas, such as marketing, environmental, mobility, among others;
- iv. Strengthen competitiveness and improve the positioning of the destination;
- v. Explore opportunities for rapid adoption of ICT by tourism demand, as well as the use of ICT by tourism service companies;
- vi. Develop a more innovative knowledge-based tourism management;
- vii. Adopt a proactive role in the use of new technologies according to the needs of each destination;
- viii. Boost entrepreneurship and new business models by associating tourist activities with ICT.

The Valencian Community's tourist destinations seek to involve actors and actions that influence tourist activity through an efficient and effective management process. The study includes the following STD analysis indicators: Governance, Sustainability, Accessibility, Connectivity and Sensorization, Information System, and Innovation (INVAT.TUR, 2015).

The indicators of INVAT.TUR Model were defined based on the Valencian Community's tourist destinations' reality to assist in self-diagnosis. Among the indicators, as a strategic pillar, is Governance, essential for the development of the model, as well as the participation of Destination Marketing Organizations. The pillars of Sustainability and Connectivity derive from this organizational structure and, thus, originate other pillars such as Sensorization, Information System, and Innovation (INVAT.TUR, 2015). A STD seeks to positively impact residents' and visitors' lives, taking into account social, environmental, and economic aspects inherent to the community that enhance the tourist experience.



Based on the STD-CV project proposed by INVAT.TUR and managed by the University Institute of Tourism Investigations (IUIT) of the University of Alicante, an Operational Manual for the Configuration of Smart Tourist Destinations (2015) was prepared by a multidisciplinary team, with professionals and specialists from different areas related to cities and smart destinations. This document contains features of the Smart City concept, as Connectivity through an infrastructure network to improve economic and political efficiency; integrative and socially inclusive development; urban development based on the growth of the economy and companies; a crucial role for high technology and innovation companies; and sustainable development in the environmental, economic and socio-cultural dimensions (INVAT.TUR, 2015). In each area mentioned, indicators and criteria for measurement are assigned. These criteria and indicators are adaptable to the reality of the destination (Figure 1).

Figure 1: INVAT.TUR model



Source: STD-CV Operational Manual (2015).

INVAT.TUR model indicators

From this perspective, the description of the indicators that structure the model and assist in self-diagnosing destinations, such as Governance, Sustainability, Accessibility, Connectivity and Sensorization, Information Systems, and Innovation, are presented next (INVAT.TUR, 2015).

- **Governance:** occurs through the participation of institutions that must work more openly with active communication and understandable language for the citizens, who should participate in all public policy-making stages (Blanco, 2015).

- **Sustainability:** the sustainable development of tourism depends on many factors related to the urban and tourist destination, which are characterized by urban evolution, real estate development, the municipal master plan, as well as the instruments that regulated it, that is, urban planning (INVAT.TUR, 2015).

- **Accessibility:** as part of Sustainability (INVAT.TUR, 2015), Accessibility allows the access, use, and enjoyment to all individuals without exception, giving the right to equal opportunities in the environment, goods, services, products, technologies, in a more secure, comfortable, and autonomous way for all (SEGITTUR, 2016).

- **Connectivity:** it is a fundamental pillar for the success of a STD due to the universal availability of Internet access. Two purposes enable the development of this indicator: for tourists and residents, the access to the STD services using mobile devices such as smartphones and tablets; and for the tourist destination, providing support to technical services implemented in the territory, such as environmental sensors, smart and interactive services (INVAT.TUR, 2015).

- **Sensorization:** consists of collecting data of an objectively measurable magnitude, being an extension of Connectivity (INVAT.TUR, 2015). While connectivity characterizes the access to the internet, Sensorization has, as an



indicator, the use of devices by visitors. The Operating Manual for Configuring a Smart Tourist Destination of the Community of Valencia stated some elements to improve the effectiveness of a sensing system (INVAT.TUR, 2015):

- i. The "cloud" - the infrastructure responsible for providing data publishing services;
- ii. Sensors - the elements capable of collecting information of any kind and publishing it to the cloud system.
- iii. Processing - the mechanism responsible for collecting cloud system information, processing it, and publishing the results;
- iv. Exploration - the elements that collect data posted on the cloud system and use them, for example, to give visualization to the public or make decisions.

- Information System (IS): as tourism is an information-intensive activity involving several areas - tour operators, travel agencies, airlines, hotels, food and beverage, leisure and entertainment, tourist guide, car rental, transportation -, the IS are indispensable to expand the sector (Ramos, Mendes Filho & Lobianco, 2017). For these authors (2017, p. 22), the IS consists of "a system through which data are obtained, processed, and transformed into information schematically and orderly to serve as decision-making process inputs."

- Innovation: it is essential to maintain the competitiveness of the tourist destination through techniques that allow the improvement of services, processes, marketing methods, destination management, and relationship with residents and visitors (SEGITTUR, 2016).

METHODOLOGICAL PROCEDURES

This research aims to analyze the aspects of a STD by analyzing the city of Natal/RN. The study consists of exploratory research, due to its investigative nature, aiming to expand theoretical knowledge on the subject. Alongside, it is descriptive research (Bervian & Hart, 1996), for having a characteristic of describing the aspects of a STD, according to the model of INVAT.TUR.



The study was based on documentary research on the Municipal Master Plan of Natal and materials produced by the INVAT.TUR (2015), in partnership with Spanish agencies: a) Implantation Guide of Smart Tourism Destinations of the Valencian Community, prepared by the Generalitat Valenciana and the University of Alicante; and b) Operational Manual for the Configuration of Smart Tourist Destinations, produced by Generalitat Valenciana and IUTT. It is important to mention that the Guide to Smart Tourist Destinations: building the future, prepared by Ávila et al. (2015), also contributed to the theoretical conception of the research. This document was created to carry out the necessary actions to prepare the Specific Report within the scope of the National Smart Cities Plan of the Digital Agenda for Spain.

The data collection stage was the longest, as it coincided with events that made it hard to complete the planned schedule. Among these events, the Soccer World Cup (Russia) is completed, followed by Brazil's electoral process and the transition between governments (Elections 2018). Given this difficulty, this stage took place between June 2018 and April 2019. The sampling method used in the research is non-probabilistic, for convenience, since the sample population was selected according to elements representative of the target audience, based on the study objectives.

Concerning means of investigation, semi-structured interviews were carried out with public and private managers. For data processing, INVAT.TUR model indicators were used as an analysis category aiming to identify barriers, opportunities, and contributions to the development of Natal/RN's tourist destination as a STD.

The research has a qualitative approach, still known as hermeneutic, reconstructive, or interpretative approaches (Flick, 2009). This type of research has particular features, such as the understanding, interpretation, and understanding of the researcher, who uses the text as empirical material and analyzes the social construction of the reality in which the study is placed (Denzin & Lincoln, 2005, Flick, 2009). The qualitative approach is characterized



as a direct source for data collection, interpretation of phenomena, and attribution of meanings (Vargas & Maldonado, 2001; Silva & Menezes, 2001).

According to Dencker (2000), before the data collection instrument's final application, one should perform a pre-test or pilot study. That serves to show flaws in the interview script's text, the complexity of the questions, the inaccuracy of the wording, the irrelevance of some questions, among other aspects to improve data collection. In this perspective, a pilot study was carried out in August 2018 with a manager of a foundation of private law linked to the productive chain of tourism in the city of Natal/RN. After the pilot, it was considered necessary to include one more question, going from 18 to 19 questions.

Thus, the semi-structured interview script consisted of 19 open questions based on the six indicators of the INVAT.TUR model (2015) and was applied to managers of public agencies and private organizations considered strategic to meet the research's objective (Table 1).

Table 1: Description of interviewees.

Interviewee	Organization	Position
Manager 1	Natal Convention Bureau	Coordinator
Manager 2	Travel Agency (regional)	Manager
Manager 3	RN Tourism Secretariat	Secretary
Manager 4	Natal Bus Terminal	Manager
Manager 5	Potiguar Tourist Promotion Agency	Director
Manager 6	Airline (national)	Manager
Manager 7	Municipal Secretariat of Tourism	Secretary
Manager 8	Brazilian Micro and Small Business Support Service (SEBRAE)	Manager
Manager 9	Natal Airport	Manager
Manager 10	Hotel Escola Barreira Roxa (SENAC)	Manager

Source: Prepared by the authors (2019)

An Informed Consent Form was presented to respondents to clarify the objectives and the importance of the research, besides ensuring ethical



procedures, stating the participant's name would not be revealed, giving greater freedom of expression in the answers. A Voice Recording Authorization Agreement was also prepared to provide transparency to the research, with the recording reason being informed and the respondents being ensured that the content would be used only for academic purposes.

Concerning data processing, it was used the content analysis that, according to Bardin (2011), involves methodological procedures divided into stages: pre-analysis, content exploitation, data collection, coding of responses, tabulation, and data interpretation. Researchers performed data analysis with the NVIVO software aid (version 12.0), which supports qualitative and varied research methods, such as interviews, open research responses, articles, social media, and web content (NVIVO, 2019). What motivated the use of NVIVO was the functionality offered by the program, which provided an organization, structuring, and coding of the collected data, allowing a better understanding and analysis of the research results.

ANALYSIS AND DISCUSSION OF RESULTS

In this topic, the analysis and discussion of the collected data begins, both about the secondary sources of the first phase of the research, in bibliographic and documentary terms, and concerning the second phase's primary data, when it started in the field. Then, the indicators of the INVAT.TUR model are treated at the destination Natal/RN.

Governance

As it happens in Smart Cities, the STDs are boosted to rethink government management. Dirks and Keeling (2009) affirm that the city's strategic development is the fundamental element to become a smart city, and so it happens with destinations. For a destination to become a STD, we need to



rethink the public policy strategies and efficiency of government management (INVAT.TUR, 2015).

The INVAT.TUR model follows the basic principles of European Governance, which establishes five basic principles: Openness, Participation, Responsibility, Efficiency/Effectiveness, and Coherence. These principles are applicable in all political spheres, being a basic reference to analyze the evolution of a Smart City and, therefore, for STD (INVAT.TUR, 2015).

Luque-Gil, Zayas-Fernández and Caro-Herrero (2015) argue that studies aiming to collect data can maximize destination management's positive impacts. The achievements will base relevant discussions on preparing a tourism observatory and contributing to initiatives for expansion, understanding, and practical application of the concept. This methodology is applied in some Spanish destinations.

Regarding this research data in Natal/RN, all respondents claimed that tourism is of paramount importance for the city, contributing to promoting economic, socio-cultural, and environmental development. Among the opinions of respondents included:

When well-managed, tourism moves more than 50 sectors of the economy quickly, including informal workers, artisans, and a vast production chain, positively impacting micro and small businesses (Manager 10).

When tourism is placed as a priority for management, the other points are also treated as a priority; economic development is a consequence of generating jobs and income provided directly by the activity. Cultural and environmental valorization are also promoted, as both compose the attractions offered to tourists visiting a specific region (Manager 1).

Unanimously, respondents said they noticed a deficiency in tourism planning in Natal/RN, as it is shown below:

Regardless of the municipal and state planning, recently concluded, little has been put into practice [on] the actions that should be considered



priorities for developing tourist activity and promoting the destination effectively. When we look at neighboring states, like Ceará and Paraíba itself, we see that we are increasingly falling behind on many issues, especially concerning the promotion and attraction of investments (Manager 1).

I consider tourism planning in Natal still weak, compared to other cities in the Northeast, we are far behind, mainly in terms of promoting the destination. Despite the organization that has been carried out in recent years, tourism activity does not have the attention it deserves, and much is still done in improvisation (Manager 4).

On the other hand, four managers ensured they are not aware of the full Master Plan of Natal (PDN), the main regulatory framework governed by Complementary Law No. 082 of June 21, 2007. The PDN directs public spaces' management, being a guiding document for public and private agents that work in the urban area's production and management. This lack of knowledge means the low participation and involvement of stakeholders in local planning processes, one of the main elements of a STD governance (Wilhelm & Ruhlandt, 2019).

The PDN's last version is from 2007, and since 2017 a review has started. However, until 2019 the new proposal had not been concluded (Natal City Hall, 2019). The PDN is the basic instrument of the Municipality's sustainable urban development policy, whose objective is to develop the city's social and environmental functions, as well as property, ensuring socially fair and ecologically balanced use of the territory (Natal City Hall, 2019).

All public managers interviewed stated that there is a great deficiency concerning public policies for tourism, including two respondents who presented similar responses when commenting that the budget has been tight in recent years, making it very difficult to execute some plans.

Public managers also cited the Integrated Development Plan for Sustainable Tourism (PDITS) and the Northeast Tourism Development Action



Program (PRODETUR / NE) as local tourism development actions. As the study was restricted to Natal/RN, we noted that there is a dependency on macro strategies and policies by the State:

The goals through PDITS and PRODETUR are significant investments for all the tourist centers of Rio Grande do Norte state. Considering the city of Natal is inserted in the Costa das Dunas hub, [it] is inserted into the tourist development plan (Manager 3).

PRODETUR is currently expanding throughout the Northeast, and it is no different in Rio Grande do Norte. Investments are expected for the sector at the state level, which will consequently be an advancement for the capital Natal. Tourism is significantly considered relevant for local development, and we are focused on actions and projects to boost the sector (Manager 5).

The PDITS has its goal to define a strategy for developing tourism in the state and serve as a "logical framework" for PRODETUR/NE. The Northeast states' governors created the PRODETUR/NE with the Federal Government's support and the financing of the Inter-American Development Bank (IDB). That action is aimed at developing and consolidating tourism, taking advantage of the existing natural potential, and at the same time, assuring economic sustainability through an increasing activity worldwide as a way to reduce and eliminate social disparities between the regions of the country (Natal City Hall, 2019).

Still concerning Governance, in the interviewees' opinion, the tourist infrastructure in the city of Natal/RN has problems or deficiencies, such as: mobility, security, signaling, infrastructure, accessibility. For Femenia-Serra and Perea-Medina (2016), the perspective of developing a traditional destination in a STD is related to destination management that involves budget and infrastructure, considered essential aspects in the transformation process towards smart tourism.



Tourism management must be based on a planning process, with a methodology to include social participation, thus achieving a greater degree of consensus among the different agents. New management characterizes the STDs to make them efficient, proactive, local tourist product integrators and capable of managing the complexity and transversal nature of local supply. This new management reinforces the need to transform the traditional model of tourism management into smart destinations.

The INVAT.TUR proposed developing a strategic plan in the face of the strategies initiated in the Valencian Community, based on collaborative Governance gathering ideas, suggestions, and opinions through the participation and contribution of all stakeholders in the Valencian tourist sector. The Strategic Plan of Tourism of the Valencian Community 2020-2025 aims to make STD-CV an authentic and safe tourist destination. Visitors can choose the destination for features like hospitality, quality of life of residents, and ethical values, managed in a collaborative and co-responsible way, becoming a smart, inclusive, innovative, and sustainable territory (INVAT.TUR, 2020).

Currently, the Strategic Tourism Plan for the Valencian Community 2020 - 2025 is in the initial phase of social participation and consensus with tourist agents. Due to the current global situation, the Covid-19 pandemic, activities are being developed through telematics meetings. Among the invited actors for this phase, we highlight Business Confederations, Trade Unions, Consumer Organizations, Autonomous Federation of Neighborhood Associations, Universities in Valencia, STD-CV Network, specialists linked to the "CV Safe Destination Program," members of the Tourism Commission, among others (INVAT.TUR, 2020).

Comparing tourism management of Natal/RN with INVAT.TUR model, we note that there are no methods and practices of Governance clearly defined and implemented. According to the reports, it is also perceived that it is necessary to elaborate a participatory and transparent strategic plan.



Objectives are outlined, and coordinated actions are developed, which can be monitored and controlled by the destination managers.

Sustainability

The sustainable development of tourism depends on the urban and tourist destination model because urban evolution, real estate-tourism development, and urban planning influence destinations' advancement. In the context of smart cities and the STD, Sustainability rests on a tripod comprising the economic aspect, linked to competitiveness; the social aspect, related to the quality of life; and the environmental aspect, with efficient management of natural resources (INVAT.TUR, 2015).

According to the OMT (2004), sustainable tourism development is an ongoing process that requires constant monitoring of the activities, reducing the negative impacts, and enhancing the benefits through corrective measures. This process requires the participation and commitment of all actors, especially the public power, which should encourage and support the process, stimulating society's participation through the construction of consensus. Thus, sustainable tourism products are developed in balance with the environment and the particularities of the destination, through sustainability and conservation of natural resources and heritage, as well as encouraging the economic growth of the local community (INVAT.TUR, 2015).

This topic is significant to analyze the sustainability concepts implemented in Natal/RN, through the understanding of some aspects such as protecting and improving the countryside and the urban environment, as further analyze the situation on the sustainable management of available public resources to promote tourist activity. However, nine out of ten respondents report being unaware of sustainability projects in the city. Corroborating the data obtained by Mendes Filho, Silva, and Silva (2019), that the sustainable tourism segment has zero results without the possibility of characterization as a STD in this regard.



SEBRAE/RN continues to provide consultancy services to small and medium-sized enterprises regarding Solar Photovoltaic Energy implementation. Also, with a focus on sustainability, it has been assisting with feasibility studies, from the initial phase to implementation, with guidelines for tourist companies' environmental licensing.

The sustainable development of tourism is relevant to preserving the destination in the face of growing awareness of the environmental impact. The demand requires the management of the destination to promote public policies to maintain sustainability. In Natal/RN, although the result points out that so far there has been no evolution in the aspect of Sustainability, PDN (2007) provides in the following Article, Item I, the following text:

The preservation, protection, and recovery of the environment and the urban landscape, in order to guarantee, besides the balanced maintenance of natural resources, quality of life for the inhabitants of the Municipality, incentive to sustainable economic activity, and protection of the city's historical and cultural heritage (Natal City Hall, 2007).

Accessibility

As the concept of accessibility, all respondents informed being unaware of projects in this line. It is important to highlight Manager 2's opinion when asked about the projects that are being developed in the city in terms of Accessibility:

I don't know. I know, because I experience in my activity the demands of accessibility for the private initiative that are constant, but when it turns to the public power, we do not see a straight sidewalk.

Therefore, it was necessary to deepen the reading in the current PDN, where there is a guideline in Article 3, item V, to adapt collective spaces to urban accessibility for all its citizens. Article 6, Paragraph V, narrates the quality of housing suitable for human use, with health, safety, and accessibility



of services and urban infrastructure. Thus, despite being a public sector responsibility, accessibility is still not considered sufficient today.

Accessibility on a STD should work in full perspective, promoting the creation of accessible environments under two approaches: physical and digital accessibility (INVAT.TUR, 2015). Accessibility is defined as eliminating or at least reducing obstacles and barriers to ensure universal access to citizens. Tourism is a social and fundamental right for all, which means the right to equal opportunities, non-discrimination, and social integration of a significant segment of the population.

A study carried out by MTur and the Secretariat for Human Rights to analyze the Profile of the Tourist of Persons with Disabilities (2013) presented indexes of the municipalities that need to advance in terms of accessibility. According to this research, the destination Natal was rated as median accessibility (MTur, 2013). The Ministry of Tourism (2013) vision is that tourism activity is treated as a path of inclusion so that social tourism is a form of tourism accessible to all citizens without discrimination of access of any kind. As a result, MTur has been supporting projects that enable urban accessibility, the adaptation of tourist activities, awareness-raising, and the dissemination of guidelines in the various sectors directly and indirectly linked to tourist activity (MTur, 2015).

The Tourism Ministry's position meets the theory of the authors Santos, Souza Neto, Pereira, Gandara, and Silva (2016), which propose the implementation of local plans for urban accessibility, aiming at minimizing barriers.

Among the main urban problems mentioned in the interviews, it is worth highlighting the unsafety, violence, deficient tourist signaling, historical and cultural heritage without proper attention, deficiency in urban cleaning, and lack of mobility, paving, public transport, and accessibility.

The Valencian Community is implementing the Smart Natural Space model, aligned with aspects of Safety, Accessibility, and Sustainability,



adapting natural areas of the STD project, intending to identify risks and analyze opportunities through the current reality and the prospect of that is expected for the future (INVAT.TUR, 2020). The model considers tourists' and residents' needs through activities, products, and services offered by natural spaces.

Connectivity and Sensorization

Connectivity and Sensorization is a fundamental pillar in the success of a STD, for contributing to tourists and residents, universally making available access to smart and interactive services from mobile devices and sensors (INVAT.TUR, 2015).

The INVAT.TUR model has characteristics for implementing this pillar through a sustainable economy, free access to tourists and residents, reasonable broadband speed, and geographically well-located. The implantation process must adapt to the destination in order to comply with the mentioned characteristics, being necessary to analyze the technological options in the territory and the applicability for the tourist destination (INVAT.TUR, 2015).

A study by Thomaz, Biz, and Gândara (2013) exposed that marketing actions on social networks contribute to the promotion of the destination due to free and easy access. Therefore, technological tools and social networks used by tourists generate data capable of improving the management of a destination (Thomaz, Biz, Bettoni, Mendes Filho and Buhalis, 2017). Comparing the study with Natal/RN's reality, the city did not position itself as a STD in the Connectivity and Sensorization category. Also, the ten managers complained about the lack of free and safe Wi-Fi for tourists and residents. So the access to free internet in tourist sights and public areas (shopping malls, squares, urban visitation parks, airports, and public spaces) is strategic for the development of a Smart City and a STD.



In turn, some private managers informed that in the enterprises where they work is made available access to the internet, while others limit access by password or by check-in on social networks. In the case of public officials, they had no internet access and no corporate phone in their offices at the time. According to an interviewee, "Telephones were cut for lack of payment for services."

In the view of managers is of paramount importance to have an application focusing on tourist/visitor. However, four of them said they were unaware of applications designed to boost the activity in the city. Yet, the destination has an application focused on tourism. Find Natal was the first app created in 2015 by students and teachers of UFRN and accessed on the Android platform (Cacho et al., 2016). In 2017, it was launched a new version named Visit Natal, becoming the official app of tourism. Visit Natal was conceived for two years in the Natal Smart and Human City Program, a partnership between the Natal City Hall and UFRN, through the Metropolis Digital Institute (Mendes Filho, Silva, and Silva, 2019).

Concerning Connectivity and Sensorization, stands out the perception of Manager 8:

I know the Visit Natal app, but I'm not sure how it is updated and maintained. Personally, I question the effectiveness of applications in tourist destinations because I still pin my hopes on web platforms for being more dynamic and easily accessible since it is independent of installing anything on the phone. The application tends to be installed before and during the trip, but it will be uninstalled after the trip. I bet on a web page, provided with good information and updated, undoubtedly costs are lower than the application about the development and maintenance.

For managers, the social networks are meaningful instruments to promote the destination Natal but must be managed professionally and designed to collaborate with tourism growth.



Concerning the Connectivity and Sensorization of STD-CV, we can mention the progress in technological tools development. Two projects were carried out: Travel Apps and Reservation Monitor. Currently, three other tools are under development: Social Networks Panel (RRSS Dashboard), STD Self-diagnosis (STD Self-Diagnosis), and Social Analysis of Destinations (Social Analytics CV Destinations) (INVAT.TUR, 2020).

Information System (IS)

The IS represent part of smart management in the context of a STD and depend on actors linked to the destination for the production, generation, and sharing of tourist data. Several aspects of the IS affect tourist consumption patterns, including experience, satisfaction, and behavioral intentions (Mehraliyev et al., 2020).

According to the INVAT.TUR (2015) model, the main actors of this pillar are:

1. Destination Managers - of public character and that make decisions based on available data, performing actions so that the destination complies with the goals as a STD;
2. Public Initiative - in order to meet the objectives of the organization, needs to consider the available data and provide indicators to improve competitiveness;
3. Tourists - the smart data management of a STD must revolve around people and provide data to have a tourist experience before, during, and after the trip.

The tourist wants to take advantage of the maximum of the attractions available during the trip through data integration and interaction. Besides, the data generated by tourists is relevant to the analysis of other actors throughout the travel cycle. Managers and entrepreneurs of the destination can make decisions supported by these data, increasing visitor's satisfaction.

ICTs are immeasurable compared to the traditional means of communication, and, according to Thomaz, Biz, and Gandara (2013), content production expanded with the advent of social networks. And, in



tourism, the sharing of experiences contributes to the structuring of a potential STD (Gomes, Gândara, & Ivars-Baidal, 2017).

ICTs are not restricted to a single technological tool since they are associated with generating knowledge of a destination (Thomaz, Biz, & Gândara, 2013). Therefore, they play an important role in managing tourist destinations, boosting marketing promotion and evolution through access to information and knowledge sharing.

As of the study about Natal/RN, all public managers consider the ICT important for the tourism development of the city, likes next opinions:

It is indispensable, as it contributes to more targeted actions for the tourist activity. I am glad to know that communication technologies have been essential presently. Tourism needs to have it as an ally because the tourist is connected before the trip, posts photos during the journey, and still has post-trip posts, as it is the case of that #TBT (Manager 6).

ICT is fundamental and must go hand in hand with tourism, as it contributes to the capture and analysis of data, and with that, the targeting of the 'new tourist profile' is connected during the travel cycles (before, during, or after). It is important that destinations have this technological support because, as I have already mentioned, contributing to capturing data, and once generated, can direct the promotion and dissemination of the destination (Manager 8).

The ICT is very important and indispensable for the tourist development of the city of Natal since it is linked to various processes and can be an excellent ally for the unification of data and generation of information (Manager 10).

Despite managers' views on the contribution of ICT, only three respondents said that the organization where they work uses any tool to generate database/information. Dropbox and Google Drive were among the tools appointed. Manager 8 commented that the organization invested high printed media for a given advertising campaign. However, when the campaign ended, all the remaining material was discarded. With ICT, they



started to develop websites and social networks as a strategy to promote tourism. Also were cited front office, Global Distribution System, and back-office tools for private tourism enterprises.

In the Valencian Community, the project Smart Data Office (SDO) was installed in the Invattur Smart Lab and is integrated into the Valencian Community Tourism (TCV) and the Smart Tourism Destinations (STD-CV). The main objective of the project is to collect and analyze information on the profile and behavior of the tourist visiting the Valencian Community. In order to advance the project, a public tender was opened for hiring a Tourist Intelligence System in the Valencian Community, called: DATATUR4CV. At this moment, it is in the phase of prospecting proposals (INVAT.TUR, 2020; Plataforma de Contratación del Sector Público, 2020).

Innovation

The Natal Municipal Administration is seeking an innovative environment. Promoting partnerships with UFRN through the Metropolis Digital Institute, the Federal Institute of Education, Science, and Technology of Rio Grande do Norte, the University Potiguar using these environments as incubators to develop programs in different areas, such as safety and smart cities (Mendes Filho, Silva, & Silva, 2019).

Only four respondents claimed to know some tourist project developed in the city. All the managers said they know the concept of Smart City and STD through SEBRAE. However, concerning the Natal/RN's perspective as a STD, everyone stated there is a trend along this path. Still, today they do not see the destination as smart, as indicated by Manager 8:

The STD concept is innovative, and Natal lacks basic infrastructure, such as safety, accessibility, signaling, and information. I believe that if you relegate the precept of a STD, you have to take care of the basics to really become a destination with this smart proposal.



Among the main obstacles that prevent Natal/RN to become a STD, the following excerpts stand out:

Natal may become a STD, but it is necessary to prepare a strategic plan since the main obstacles are linked to the current urban problems (safety, mobility, and accessibility). It is also necessary to improve the projects for innovation and technological strategy (Manager 2).

I believe that Natal will still be a smart destination, but the obstacles are many, from total accessibility in the city to the efficient competitiveness of the destination, seeking to promote the tourist experience uniquely, with the quality of efficient services and sustainable development in the use of resources natural resources (Manager 3).

The main obstacle is the low budget of the Municipal Secretariat of Tourism. The financial resources are not worthy of boosting any new work with a relevant impact on tourism, unlike other destinations that prioritize tourism as an important economic sector for local development (Manager 7).

The global dynamics of innovation can, therefore, become a threat to companies and traditional tourist destinations. According to Mehraliyev et al. (2020), there is a number of innovative initiatives associated with the concept of STD, with the use of the latest technologies such as the internet of things, computing cloud, neural networks, among others.

In this scenario, the development of STD acts as a stimulus and an element to increment innovation. However, the transformation of destinations into innovative environments requires a long and complex process for municipalities (INVAT.TUR, 2015).

The Valencian Tourism Agency has developed different strategic lines to improve innovation in recent years (INVAT.TUR, 2015), for example:

1. Financial assistance for the implementation and certification of management systems and perform plans and projects;
2. Financial aid to companies and associations for online promotion and marketing;



3. Accessibility and social media marketing initiatives (accessible beaches);
4. Orientation for the innovation of the Tourist Information Network;
5. Support for training aimed at boosting the innovation concept;
6. Creation of the Valencian Institute of Technologies;
7. Development of the marketing platform and travel applications.

Five managers stated that their represented organization contributes to actions and strategies to make Natal/RN a STD, as illustrated:

By promoting the destination, and its mission is to present a city with all the necessary conditions to capture events of great proportions, we offer the services that can be hired at the destination. Besides, we seek to do this with quality, dynamism, and technology, and we are apolitical and partners of all entities that promote the destination. Our work is directly influenced by public policies for the development of tourism (Manager 1).

I can mention the public policies that the agency has been developing during the current administration; we seek consolidated models in other countries; we are partners in events. Unfortunately, with the current financial crisis and state, we are not investing as we should. But we believe that this phase will soon pass, and we will develop strategies to not only Natal be a smart destination, but who knows how to implement it in other destinations in the state (Manager 5).

The organization I work in contributes with actions and strategies to make Natal a STD through our policy of valuing human capital, sustainability in its three pillars (economic, social and environmental), and using resources intelligently (Manager 10).

From a historical perspective, there are innovations in tourism over the years, such as the advent of airlines of low cost and the appearance of innovative business models such as Online Travel Agencies and shared hosting as Airbnb, which affect the tourists' behavior impacting the tourist offer. Therefore, they represent a threat to companies and traditional destinations when they do not follow global innovation dynamics.



CONCLUSIONS

This study aimed to analyze aspects of Natal/RN tourist destination from the perspective of a STD. From interviews with public and private managers involved in the local tourist activity, it is concluded that the city is in an embryonic phase as a STD, being necessary to establish an integration between public power and private initiative through participative management. Furthermore, STD practices help to increase the competitiveness of a destination when compared to traditional tourist destinations.

As for the STD indicators of the INVAT.TUR model (2015), among the aspects of Governance and Sustainability that need to be improved, the City Hall, through the Municipal Secretariat of Environment and Urbanism (SEMURB), resumed the update process of the PDN. The new plan will be segmented by the participation of public agencies at the municipal and state level. Some of them are the Municipal City Council, Public Prosecutor's State office (MPRN), Superintendence of Federal Union in Rio Grande do Norte (SPU), Sustainable Development and Environment Institute of Rio Grande do Norte (IDEMA). Also, Non-Governmental Organizations (NGOs), business entities, universities, research institutions, and popular movements (Natal City Hall, 2019). Working groups to work in the PDN review process were created, contributing to the technical deepening in the physical-territorial aspects and the municipal urban management, divided into themes: Macro zoning and Land Use, Special Areas and the System Urban Development Planning, Management and Funds (Natal City Hall, 2019).

Concerning Information and Connectivity Systems, SEBRAE has invested around R\$ 1.3 million in tourism technology actions in the state. The funds were invested in small tourist businesses' insertion in the online environment, mainly travel agencies and lodging facilities, as the STD Project actions. According to the state's Manager of STD Project, the first phase was implemented from 2017 to 2019, being necessary the continuity of strategies



and actions. The proposal aims to improve tourism's production chain, focusing on Governance, Technology, tourism experiences, and Sustainability. Among other things, SEBRAE's project intends to generate resources efficiently, ensure more competition in the sector, provide quality experiences to tourists and offer accessibility (SEBRAE, 2019).

In terms of Innovation, there is a project considered innovative by SEBRAE/RN to develop local tourism: The World War II Route (Natal and Parnamirim municipalities). SEBRAE/RN has been supporting and promoting this project by surveying points of tourist interest. With the project's progress, the agency conducted a feasibility study for implementing a Cultural Center in the old air terminal Augusto Severo in Parnamirim/RN, with the Air Force's support in the Air Base of Natal (SETUR, 2019).

Introducing the scenario of the city of Natal/RN, this work contributes to the identification of barriers and opportunities for the development of a significant tourist destination national as a STD. Therefore, it is imperative to adopt key strategies such as to prepare, plan, and implement tools and procedures that promote participative public management and government practices. Also, the implementation of public policies to raise awareness of sustainability and valorization of the environment, improvements in accessibility and urban mobility, making a universal and accessible environment for all. It is necessary, too, to invest in developing strategies for creating an environment conducive to innovation and the integration of technological tools essential to position Natal/RN as a STD.

As limitations of the study, one must mention the restricted number of respondents due to access difficulties at a government transition time. Therefore, it is suggested that in future studies, the sample of managers is expanded and the data updated, taking into account the new challenges imposed by the new coronavirus pandemic. It is also recommended that investigations of a quantitative nature are carried out on the theme, with tourists and residents as subjects, to know this public's perception about STDs.



REFERENCES

- Ávila, A. L., Lancis, E. García, S. Alcantud, A., García, B. & Muñoz, N. (2015). *Informe destinos turísticos: construyendo el futuro*. Madrid.
- Bardin, L. (2011). *Análise de conteúdo*. São Paulo: Almedina.
- Blanco, J. (2015). *Libro Blanco de los destinos turísticos inteligentes: estrategias y soluciones para fomentar la innovación em el turismo digital*. Madrid: LID Editorial Empresarial. Available at <http://www.segittur.es/es/DTI/dti-detalle/Libro-Blanco-Destinos-Tursticos-Inteligentes/#.WhStiVWnHIU>. Accessed 16 jul. 2019.
- Boes, K.; Buhalis, D., & Inversini, A. (2015). Conceptualising smart tourism destination dimensions. In I. Tussyadiah and A. Inversini (eds.), *Information and Communication Technologies in Tourism 2015*. (391-403). Switzerland: Springer.
- Buhalis, D. & Sinarta, Y. (2019). Real-time co-creation and nowness service: lessons from tourism and hospitality. *Journal of Travel & Tourism Marketing*, 36(5), 563-582.
- Buhalis, D., & Amaranggana, A. (2014). Smart Tourism Destinations. In: Xiang Z., Tussyadiah I. (eds) *Information and Communication Technologies in Tourism 2014*. Springer.
- Cacho, A., Mendes-Filho, L., Estaregue, D., Moura, B., Cacho, N., Lopes, F. & Alves, C. (2016). Mobile tourist guide supporting a smart city initiative: a Brazilian case study. *International Journal of Tourism Cities*, 2(2), 164-183
- Cervo, A. L., & Bervian, P. A. (1996). *Metodologia científica*. (4a ed.). São Paulo: Makron Books.
- Cimbaljević, M., Stankov, U., & Pavluković, V. (2019). Going beyond the traditional destination competitiveness – reflections on a smart destination in the current research. *Current Issues in Tourism*, 22(20), 2472-2477.



Del Vecchio, P., Mele, G., Ndou, V. & Secundo, G. (2018). Creating value from Social Big Data: Implications for Smart Tourism Destinations. *Information Processing and Management*, 54, 847-860.

Dencker, A. F. M. *Métodos e técnicas de pesquisas em turismo*. (4a ed). São Paulo: Futura, 2000.

Denzin, N.K. & Lincoln, Y.S. (2005) Introduction: The Discipline and Practice of Qualitative Research. In: Denzin, N.K. and Lincoln, Y. S., Eds., *Handbook of Qualitative Research*, (3rd Edition). Sage, Thousand Oaks, 1-32.

Dirks, S., & Keeling, M. (2009). *A Vision of Smarter Cities: How Cities Can Lead the Way into a Prosperous and Sustainable Future*. Somers, NY: IBM Global Business Services. Available at <ftp://public.dhe.ibm.com/common/ssi/ecm/en/gbe03227usen/GBE03227USEN.PDF>.

Femenia-Serra, F. & Perea-Medina, M. J. (2016). Analysis of three Spanish potential smart tourism destinations. In *6th International Conference on Tourism - New Challenges and boundaries in tourism: policies, innovations and strategies*. Nápoles, Itália.

Flick, U. (2009). *Desenho da pesquisa qualitativa*. Porto Alegre: Artmed.

Freitas, H. B. B., & Mendes Filho, L. (2020). Iniciativas de destinos turísticos inteligentes na cidade de Natal-RN: Uma abordagem qualitativa. *Rosa Dos Ventos - Turismo e Hospitalidade*, 12(4), 997-1016.

Gomes, E. L., Gândara, J. M., & Ivars-Baidal, J. A. (2017). É importante ser um destino turístico inteligente? A compreensão dos gestores públicos dos destinos do Estado do Paraná. *Revista Brasileira de Pesquisa em Turismo*, 11(3), 503-536.

Gretzel, U. (2018). From smart destinations to smart tourism regions. *Investigaciones Regionales - Journal of Regional Research*, 42, 171-184.



Gretzel, U., Ham, J., & Koo, C. (2018). Creating the City Destination of the Future – The Case of Smart Seoul. In Wang, Y. Shakeela, A., Kwek, A., & Khoo-Lattimore, C. (Eds.). *Managing Asian Destinations*. Springer, forthcoming.

Gretzel, U., Werthner, H., Koo, C., & Lamsfus, C. (2015). Conceptual foundations for understanding smart tourism ecosystems. *Computers in Human Behavior*, 50(1), 558-563,

Instituto Valenciano de Tecnologías Turísticas - INVAT.TUR (2020). Available at <http://invattur.es>. Accessed 29 set. 2020.

Instituto Valenciano de Tecnologías Turísticas - INVAT.TUR (2015). Manual Operativo para la configuración de destinos turísticos inteligentes. Available at <http://invattur.gva.es/estudio/manual-operativo-para-la-configuracion-de-destinos-turisticos-inteligentes/>. Accessed 15 mar. 2018.

Jasrotia, A. & Gangotia, A. (2018). Smart cities to smart tourism destinations: a review paper. *Journal of Tourism intelligence and Smartness*, 1, 47-56.

Jovicic, D. Z. (2019). From the traditional understanding of tourism destination to the smart tourism destination. *Current Issues in Tourism*, 22(3), 276-282.

Jurin, E. (2008). Smart Tourism Destinations: a framework for the elaboration of an implementation model. *Acta Turistica Nova*, 2(1), 123-143.

Luque-Gil, A. M., Zayas-Fernández, B., & Caro-Herrero, J. L. (2015). Los Destinos Turísticos Inteligentes en el marco de la Inteligencia Territorial: conflictos y oportunidades. *Investigaciones Turísticas*. 10,1-25.

Mehraliyev, F., Cheng Chu Chan, I., Choi, Y., Koseoglu, M. A. & Law R. (2020) A state-of-the-art review of smart tourism research. *Journal of Travel & Tourism Marketing*, 37(1), 78-91.

Mehraliyev, F., Choi, Y., & Köseoglu, M. A. (2019). Progress on smart tourism research. *Journal of Hospitality and Tourism Technology*, 10(4), 522-538.



Mendes Filho, L., Silva, J. C. & Silva, D. S. (2019). Percepções e perspectivas de destino turístico inteligente: um estudo de caso com a secretaria municipal de turismo em Natal/RN. *Revista Turismo: Estudos & Práticas* (RTEP/UERN), 8(1), 98-124.

Ministério do Turismo (2013). *Turismo acessível: estudo do perfil de turista – pessoas com deficiência*. Available at http://www.turismo.gov.br/turismo/o_ministerio/publicacoes/downloads_publicacoes/Estudo_de_dem_turistas_pessoas_com_def_DocCompleto_12.2013.pdf. Accessed 16 jul. 2019.

Ministério do Turismo (2015). *Turismo Acessível*. Available at: <http://www.turismo.gov.br/assuntos/5054-turismo-acessivel.html>.

Ministério do Turismo. (2018). *O futuro do setor está na inovação e sustentabilidade*. Available at: <http://www.turismo.gov.br/%C3%BAltimas-not%C3%ADcias/11873-o-futuro-do-turismo-est%C3%A1-na-intelig%C3%A1ncia,-inova%C3%A7%C3%A3o-e-sustentabilidade.html>

NVIVO. (2019). Available at: <http://www.qsrinternational.com/nvivo-portuguese>. Accessed 16 jul. 2019.

Organização Mundial do Turismo. (2004). *Desenvolvimento sustentável do ecoturismo*. São Paulo: Roca.

Plano Diretor de Natal. (2007). Available at <https://natal.rn.gov.br/semurb/planodiretor/>. Accessed 16 jul. 2019.

Plataforma de Contratación del Sector Público. (2020). Available at <https://contrataciondelestado.es>. Accessed 29 set. 2020.

Ramos, A. S. M., Mendes Filho, L. A. M., & Lobianco, M. L. (2017). *Sistemas e tecnologia da informação no turismo: um enfoque gerencial*. Curitiba: Prismas.

Sánchez, A. V. (2014). *Investigación Científica em Turismo: La experiencia Ibérica*, *Revista Turismo e Desenvolvimento*, 20, 21-29.



Santos, S. R., & Gândara, J. M. G. (2016). Destino turístico inteligente: construção de um modelo de avaliação com base em indicadores para planejamento, gestão e controle de destinos histórico-culturais patrimônio da humanidade, analisando o caso de São Luís (Maranhão, Brasil). *CULTUR: Revista de Cultura e Turismo*, 10(2), 69-79.

Santos, S. R., Souza Neto, V. R., Pereira, L. R. S., Gândara, J. M. G., & Silva, S. R. X. (2016). Destino Turístico Inteligente: Acessibilidade no Centro Histórico de São Luís - Maranhão, um estudo sobre a reputação Online no TripAdvisor. *Marketing & Tourism Review*, 1(2), 1-27.

Serviço Brasileiro de Apoio às Micro e Pequenas Empresas – SEBRAE. (2019). Available at <http://www.sebrae.com.br/sites/PortalSebrae/sebraeaz/destinos-turisticos-inteligentes,983d59f53b1bb510VgnVCM1000004c00210aRCRD>. Acesso em 16 jul. 2019

Serviço Brasileiro de Apoio às Micro e Pequenas Empresas – SEBRAE. (2016). *Destinos Turísticos Inteligentes*. Tecnologias de informação e desenvolvimento sustentável. Available at: https://m.sebrae.com.br/Sebrae/Portal%20Sebrae/Anexos/BI_Tur_2016_06_Destinos%20Tur%C3%ADsticos%20Inteligentes.pdf. Accessed 15 mar. 2018.

Serviço Brasileiro de Apoio às Micro e Pequenas Empresas – SEBRAE. (2017). *Destinos turísticos inteligentes: Saiba o que são os destinos turísticos inteligentes e conheça como o Sebrae atua no setor*. Available at <http://www.sebrae.com.br/sites/PortalSebrae/sebraeaz/destinos-turisticos-inteligentes,983d59f53b1bb510VgnVCM1000004c00210aRCRD>. Accessed 15 mar. 2018.

SETUR - Secretaria de Turismo do RN - (2019). Rio Grande do Norte – *Informações Gerais*. Available at http://setur.rn.gov.br/?page_id=4050. Acessado em 05 ago. 2020.



Silva, E. L. & Menezes, E. M. (2001). *Metodologia da Pesquisa e Elaboração de Dissertação*. (3a ed). Florianópolis: Laboratório de Ensino a Distância da UFSC.

Sociedad Estatal para La Gestión de La Innovación y las Tecnologías Turísticas - SEGITTUR. (2016). *Norma UNE 178501 - Sistema de gestions de los destinos turísticos inteligentes*. Available at <http://www.segittur.es/es/proyectos/proyecto-detalle/Aprobada-Norma-UNE-Sistema-de-Gestin-de-los-Destinos-Tursticos-Inteligentes.-Requisitos>

Sociedad Estatal para La Gestión de La Innovación y las Tecnologías Turísticas - SEGITTUR. (2013). Available at: <http://www.segittur.es/es/DTI/>

Sousa, T. C. G., Souza, M. J. B., Rossetto, C. R. & Ivars-Baidal, J. A. (2016). Análise da transformação de um Destino Turístico Tradicional (DTT) em Destino Turístico Inteligente (DTI) à luz do modelo da SEGITTUR (2013). *CULTUR: Revista de Cultura e Turismo*, 10(2), 86-91.

Thomaz, G. M.; Biz, A. A.; Bettoni, E. M.; Mendes-Filho, L. & Buhalis, D. (2017). Content mining framework in social media: A FIFA world cup 2014 case analysis. *Information & Management*, 54, 786-801.

Thomaz, G. M.; Biz, A. A.; Gândara, J. M. G. (2013). Innovación en la promoción turística en medios y redes sociales: Un estudio comparativo entre destinos turísticos. *Estudios y Perspectivas en Turismo*, 22, 102-119.

Vargas, L. & Maldonado, G. (2001). *Guia para apresentação de trabalhos científicos*. 3. ed., Porto Alegre: Programa de Pós-Graduação em Administração – PPGA/UFRGS.

Wilhelm, R. & Ruhlandt, S. (2018). The governance of smart cities: A systematic literature review. *Cities*, 81, 1-23.

