Beyond the certification of smart tourism destination: insights from the city of Medellín in Colombia

Naïma Aïdi and Nathalie Fabry

Abstract

Purpose – *This paper aims to give meaning to the smart tourism destination (STD) certification, highlighting its main advantages and limitations. The case of Medellín (Colombia) presents characteristics worth studying. The city has suffered from stigmatization and has recently started the steps to become an STD with the Spanish company Segittur (December 2020). Thus, this study aims to focus on the implications of the STD process, especially in an area that has been impacted by tourist activity.*

Design/methodology/approach – *This paper is a qualitative and exploratory case study about Medellín in Colombia and its tourism development in an STD framework. After a theoretical exploration of the STD from an urban perspective, the paper will present a multiple data corpus to analyze the city's certification process to turn into an STD. This methodology explores stakeholders on the destination, including an observation, and allows us to obtain an overview of the implications of the STD certification for Medellín.*

Findings – *During the past decade, Medellín passed from a dangerous destination to a trendy destination. Findings reveal interesting results, considering the need to consider all aspects of territory as a central issue for the STD settlement and look beyond a technological approach.*

Originality/value – *This paper lets to understand better the STD process established by the institution. Moreover, it highlights the gap between the coveted certification to become the first STD in Colombia and the realities of a Latin American territory.*

Keywords *Smart tourism destination, Smart tourism, Segittur, Medellin, Colombia*

Paper type *Case study*

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Más allá de la certificación de destino turístico inteligente: Perspectivas desde la ciudad de medellín en Colombia

Resumen

Propósito : *Este articulo pretende dar un significado a la certificación de destino turístico inteligente (DTI), destacando sus principales ventajas y limitaciones. El caso de Medellín (Colombia) presenta características relevantes de estudio. La ciudad ha sido ampliamente estigmatizada y recientemente ha iniciado el proceso de certificación para convertirse en destino turístico inteligente con la entidad española Segittur (dic. 2020). Dicho esto, queremos enfocarnos en las implicaciones de este proceso, especialmente en un área que ha sido impactada por la actividad turística.*

Diseño/metodología/enfoque : *Este artículo comprende un estudio cualitativo y exploratorio sobre Medellín en Colombia y su desarrollo turístico en un marco de DTI. Luego de una exploración teórica del destino turístico inteligente desde una perspectiva urbana, el artículo presentará un corpus de múltiples datos para analizar el proceso de certificación de la ciudad en su conversión en una DTI. Nuestra metodología explora a los stakeholders sobre el destino, incluyendo una observación, y nos permite obtener una visión general de las implicaciones de la certificación DTI para Medellín.*

Hallazgos : *Durante la última década, Medellín pasó de ser un destino denominado de alto riesgo a un destino altamente recomendado. Los hallazgos revelan resultados interesantes, mostrando la necesidad de considerar todos los aspectos del territorio como un tema central para el asentamiento del DTI y mirar más allá de un enfoque tecnológico.*

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Originalidad/Valor : *Este trabajo permite tener una mejor comprensión del proceso de DTI establecido por la entidad Segittur. Además, resalta la brecha existente entre la deseada certificación y las realidades de un territorio latinoamericano.*
Palabras clave *Destino turístico inteligente, Turismo inteligente, Segittur, Medellín, Colombia*
Tipo de papel *Caso de estudio*

Introduction

The smart tourism destination (STD), conceptualized in recent years (Boes, Buhalis, & Inversini, 2015; Koo, Shin, Gretzel, Hunter, & Chung, 2016), is a topic of equal interest to researchers and policymakers. Tourism needs to renew itself to face contemporary challenges such as global tourism growth, urban density, global health crisis and increased use of technology. The STD seems to be a new model for managing tourism destinations that is part of a smart ecosystem (Gretzel, Werthner, Koo, & Lamsfus, 2015). Nowadays, many fields claim to be smart, such as STDs, smart cities, smart technology and smart tourists. If smart concepts have a common foundation such as technological innovations service-driven (Vesci, Polese, Botti, Grimaldi, & Monda, 2018), a link exists between the concept of the innovative city or smart city and that of STD. Indeed, the innovative city stems from the concept of the smart city, an urban territory that uses information and communication technologies (ICT) to improve public infrastructure, make mobility and transport networks more fluid, reduce energy consumption and improve inhabitants' quality of life. As specified by Zeghni, Fabry, and Blanchet (2018), the smart city forms a complex and resilient urban ecosystem involving several actors, fueled by ICT, innovation and environmental concerns, while benefiting from adapted governance. In parallel, the STD is a tourism destination management model that draws innovation from the smart city (Ivars-Baidal, Celdrán-Bernabeu, Mazón, & Perles-Ivars, 2017) and is increasingly gaining traction in urban and tourism development in Latin America.

Medellin is a city in Colombia. It represents a genuine experimentation laboratory in urban, social and tourist development. Since the beginning of the 2000s, the policies and the network of public and private companies have reduced the violence and social and economic inequalities present in the Latin American continent. So that improvements and efforts in the environment, culture, progress, education and technology allowed Medellín to be the "Most Innovative City of the Year" in 2013 by Citigroup, The Urban Institute and *The Wall Street Journal*. A few years later, in 2020, the Spanish public company Segittur integrated Medellín into its STD network. In such a context, we discuss two research questions:

RQ1. First, how does a Spanish company propose the STD certification process for a destination located in Latin America?

RQ2. Second, how do tourists and accommodation providers of a tourist area perceive the transformation of a tourist destination into an STD?

We choose to analyze a corpus of multiple data to answer these research questions. The corpus comprises a questionnaire established for hotels and hostels; semi-structured interviews conducted with a strategic member in charge of the STD project in the City of Medellín and the STD manager in Segittur. Moreover, we made an observation in Medellín between August and September 2021. We reviewed the tourist's comments on TripAdvisor (TA) and analyzed secondary data from official documents (Segittur, Medellín city hall, etc.). This article is structured as follows. The first part aims to provide a literature survey that presents STDs in a smart city context and identifies the process implemented by the public company Segittur to convert a tourist destination into an STD. The second part highlights the certification process, taking the case of Medellín in Colombia. Finally, the discussion of the results will stress the advantages but also the limits of a certification built on the basis of European standards to apply to a Colombian destination, and in conclusion, we will make some suggestions for future research.

Smart tourism destinations from an urban perspective

About innovative territories and smart cities

Currently, 55% of the world's population, or 4.2 billion people, live in cities. The United Nations predicts that 2 out of 3 inhabitants will live in cities or urban areas by 2050, 2.5 billion more than today (ONU, 2018). Moreover, developing-countries cities – such as those in Latin America – have a density three times higher than those in industrialized countries (Angel, Sheppard, & Civco, 2005; Angelidou, 2015). This growth can be explained by the existence of forces that would shape urban expansion. According to Angel *et al.* (2005), these forces are about the natural environment, the demographics, the economy, the transport system, the consumer preferences for proximity and the governance. The urban planning of Latin American cities reflects an injunction to transform traditional cities into smart cities, positioning urban problems into technological problems to propose technological solutions and with a propensity to develop smart initiatives in the most favored areas from a social and economic point of view (Irazábal & Jirón, 2021). Beyond the technological framework and the capacity of cities to accommodate an ever-increasing population, the question arises of issues related to energy resources, density, the well-being of citizens, the necessary infrastructure and the impact on the environment (Diguet & Lopez, 2020).

The mere use of the term "smart city" spontaneously implies a positive vision, making it quite challenging to criticize (Hollands, 2008). Although the theory linked to the smart city turns out to be an ideal urban model, empiricism may offer another version of the facts (Irazábal & Jirón, 2021; Oliveira, Oliver, & Ramalhinho, 2020; Yigitcanlar *et al.*, 2019). In addition, the use of the smart city concept is increasingly present in academic literature and political agendas (Chopplet, 2018; Marsal-Llacuna, Colomer-Llinàs, & Meléndez-Frigola, 2015; Pereira, Parycek, Falco, & Kleinhans, 2018; Trindade *et al.*, 2017). At the same time, it raises many questions:

Q1. Is it a fad, a marketing argument or an innovative way of rethinking urban planning in a digital and global context, facing environmental constraints?

The arrival of this innovative urban model called "smart city" is not sudden. In the 1990s, in the wake of advances in ICT, the idea of intelligence emerged, connecting technology and urban areas to improve the quality of life (Başer, Doğan, & Al-Turjman, 2019). This urban model is rooted in the initiative of American technology companies based in Silicon Valley (Yasser Wahyuddin, 2021). Although the academic literature dealing with the smart city is abundant and uses many ways of considering it (Angelidou, 2015; Bajdor & Starostka-Patyk, 2021; Guo *et al.*, 2019; Hajek, Youssef, & Hajkova, 2022; Lim, Edelenbos, & Gianoli, 2019; Winkowska, Szpilko, & Pejić, 2019; Yigitcanlar, 2015), there is a lack of consensus on what a smart city is. At the same time, a multitude of cities in the world claim to be smart, and the use of the term "smart" to characterize urban changes raises questions about the labeling of a smart city and its transformations (Hollands, 2008).

The smart city does not represent a fundamental break with the city's essence. Instead, it proposes modifying its space and using digital tools now omnipresent in citizens' daily lives. The smart city is, therefore, an urbanized territory that uses ICT (connected objects, apps, cloud) supposing to facilitate the optimization of essential services of a city such as administration, education, energy, healthcare, public safety, resilience, real estate, transportation (Bajdor & Starostka-Patyk, 2021; Corte, D'Andrea, Savastano, & Zamparelli, 2017; Khatibi *et al.*, 2021; Silva, Khan, Han, & Society, 2018). According to (Caragliu, Del Bo, & Nijkamp, 2011) "A city is smart when investments in human and social capital and traditional transport and modern ICT infrastructure fuel sustainable economic growth and a high quality of life, with a wise management of natural resources, through participatory governance". In the other hand, Boyd Cohen developed a methodology called "Smart City Wheel" (Boes *et al.*, 2015; Kaluarachchi, 2022; Qonita and Giyarsih, 2022) composed by an

index including 62 indicators, highlighting 6 smartness dimensions: smart governance, smart environment, smart mobility, smart economy, smart people and smart living, with a meaningful policy impact, encouraging mobility issues, bicycle and e-government (Irazábal & Jirón, 2021).

Then and above all, it is nonsense to talk about smart cities without mentioning sustainability to develop sustainable, accessible and inclusive living spaces at the service of the citizens who live there or visit them. Indeed, the need to move towards a sustainable future is a prerequisite for "smartness," particularly among urban planning and tourism researchers (Coca-Stefaniak, 2021). The sustainable aspect of the smart city can be a quest for green interventions, gardens and parks (Wachsmuth & Angelo, 2018); for a circular economy (Bibri & Krogstie, 2017), or even a system aimed at reducing waste, developing renewable energies and slow transportation (Bibri, 2018). Nowadays, there is no consensus on the sustainable aspect of the smart city and no template for framing it (Ibrahim, El-Zaart, & Adams, 2018). It is probably because each author, each institution, each researcher or each company has their proper viewpoint but also established their lens according to their interests (Lara, Da Costa, Furlani, & Yigitcanla, 2016; Lee, Hunter, & Chung, 2020; Trindade et al., 2017). For Yigitcanlar et al. (2019), sustainable urban development requires an interdependence between society, economy and nature to establish an economic system that respects the environment and nature. The authors point out that the smart city must be considered holistically due to its complexity.

Moreover, the smart city concept seems to be part of a positivist paradigm with a technological device that would solve all the problems and needs induced by urban growth. Chopplet (2018), the smart city is "a set of data collected by surveys of all kinds and constituting the whole of the knowledge of the urban object". It is a quest for anticipating and estimating possible action under the triple thrust of technology, political conceptions and socio-cultural changes. He suggests questioning the real intention of the companies and actors participating in developing smart cities. It is, namely, the commercial responsibility in the plethoric proposal of technological solutions so as the deviations linked to individual freedoms and the power exercised over the citizens who live or visit these digitized urban spaces.

So, how does the transposition of the smart city model into the tourism destination works? In theory, the intertwining between the STD and the smart city exists because STD emerges from the smart city concept. Both support the value creation process by collecting and sorting data from ICT (Brandt, Bendler, & Neumann, 2017), with the common goal of implementing improved services for tourists and residents to provide reliable information for all (Başer et al., 2019). One of the conditions for becoming an STD is that it must first be a smart city, equipped with all the technological infrastructure, to deploy it in the tourism sector (Liberato, Alén, & Liberato, 2019). Moreover, cohabitation between inhabitants and tourists can sometimes be challenging to manage when tourism activity mixes with urban spaces. Thus, smart cities leverage their technology to implement ICT-based tourism experiences to mitigate the negative feelings that tourism can induce (Fabry & Blanchet, 2019). STD is when a symbiosis and alignment between destination management and intelligence occurs (Corte et al., 2017). Moreover, for both the city and the tourist destination, becoming smart is more of a process than a status (Fabry & Blanchet, 2019). It can take time to consider numerous parameters, actors and objectives, forming a complex and intelligent ecosystem (Gretzel et al., 2015)

Smart tourism destinations

Smart Tourist Destinations is derived from smart cities, applying its principles to rural and urban areas considering both tourists and residents, and supporting mobility, resources, sustainability and quality of life (Gretzel et al., 2015). Nevertheless, despite the substantial investments for the modernization of urban services, tourism seems to be sidelined in the

development of smart city planning; neither do nor consider the services the smart city offers in tourism planning (Gretzel and Koo, 2021). Thus, if the smart city and the STD have similarities, these two concepts seem to ignore each other.

In urban areas (Peyrache-Gadeau & Pecqueur, 2011), tourist destinations come up against new territorial, organizational, human and technological issues. At the same time, the city of the 21st century is no longer limited to permanent residence and economic and political activities. However, it is changing, polymorphous and undoubtedly a place in which tourism occupies a significant place, contributing to urbanization (Stock & Lucas, 2012). Furthermore, our era is experiencing an increased use of ICT, the immediacy of access to information, the dematerialization of transactions and the appearance of new flows linked to mobility, thereby ushering in a new era of tourism. Suppose, in general, travel represents an essential activity for developing a territory and personal emancipation. In that case, it is accompanied by potential nuisances such as tourist–resident conflicts (Tsaur, Yen, & Teng, 2018), overtourism (Goodwin, 2021) or economic and social impacts (Wilson, 2008). To preserve heritage, and optimize the flows of tourists and local development, the tourism ecosystem needs to shift more sustainable and wiser (Coca-Stefaniak, 2021; Fabry, 2021).

STD is a growing research topic in the tourism field primarily associated with ICTs as vectors to fulfill the promises of STD: innovation, competitiveness and attractiveness based on sustainability and the quality of interactions between tourists and residents (Lopez de Avila, 2015). Innovation refers to the sixth wave of innovation cycles proposed in Schumpeter's theory (Badillo, 2013) characterized by the introduction and use of the Internet of Things, nanotechnology and artificial intelligence. The notion of intelligence leverages technology to pool and interconnect all stakeholders, enabling value creation through ICT infrastructure deployed in the territory (Xiang, Tussyadiah, & Buhalis, 2015). These innovative tools materialize public Wi-Fi, Big Data analysis tools, destination websites and apps, quick response (QR) codes and geolocation, virtual and augmented reality, chatbots, interactive social networks, etc. (Femenia-Serra & Ivars-Baidal, 2018). In sum, combining and adequately using all these innovative technologies create intelligence, enabling an improved experience and optimized destination management.

The specificities of the STD regarding the traditional model lie in its design, which blends the digital and the physical (Kontogianni & Alepis, 2020), fostering collaborations between the public and private sectors and offering personalized services made possible by the value creation from the sharing of digital data (Jovicic, 2019). In this sense, this scheme is not a palimpsest of the traditional destination. However, it follows the technological developments over the past two decades, particularly ICT integration within urban and tourist territories (Boes et al., 2015). Concretely, the notion of value creation relies on the socio-numerical devices used by citizens who will emit digital traces during their trip, which turn into a large volume of data. Once collected and analyzed, they can be used to know and anticipate tourists' needs, improve tourism services, better-known tourist flows, use of the territory or their satisfaction rate during their stay (Brandt et al., 2017). Boes et al. (2015) identified the key factors that drive intelligence within a tourism destination: leadership, entrepreneurship and innovation, social capital and human capital. The authors point out that these elements need ICT to implement enjoyable and immersive experiences for tourists and boost the competitiveness of tourism businesses.

In recent decades, some urban places turned to be designed and fitted out for tourist activity (Encalada-Abarca, Ferreira, & Rocha, 2022; Lee et al., 2020; Spirou & Judd, 2014). Hotels were zoned out from residential areas and directly related to market services such as restaurants adapted to tourist demand, souvenir shops, day trippers, train stations. According to Gretzel and Koo (2021), internet connectivity blurs this separation. Smart technologies (mobile devices, QR codes, beacons) are used and shared between residents and tourists, transforming how those spaces are managed and consumed (Femenia-Serra, Ioannou, & Tussyadiah, 2021; Ivars-Baidal et al., 2017). The technology facilitates mobility

(Uber, Smart-bike sharing, etc.), and the sharing economy (Airbnb, co-working apps, etc.) makes cities more accessible to people, without counting the gentrification or overtourism phenomena mainly occurring in densely populated city centers. Otherwise, Destination Manager Organizations or practitioners can use innovative technologies to improve the image of their destinations and enhance visitation (Tavitiyaman, Qu, Tsang, & Lam, 2021). In other words, smart technologies are also a vector of attractiveness for tourist destinations. In addition, if smart technologies improve the tourist experience, they are also a source of information shaping tourism management (Rocha, 2020). Furthermore, ICT, by increasing personalization and experience co-creation, represents an essential factor for STD competitiveness (Cimbaljević, Stankov, & Pavluković, 2019), and competitiveness cannot exist without sustainability. According to Ritchie & Crouch (2003), the destination that will stand out from the competition is the one that provides the greatest success and well-being to its residents based on the principle of sustainability.

The current context of international tourism leads to redrawing the classic paradigms and places the issue of sustainability at the heart of new forms of governance (Byrd Erick, 2007; dos Anjos & Kennell, 2019; Gössling, 2017; Jamal & Camargo, 2018). Due to the multiplicity of definitions, dimensions and applications, the term governance can appear fuzzy and subject to controversy (Windsor, 2009). According to Beritelli, Bieger, and Laesser (2007), the governance of a tourist destination consists of "setting and developing rules and mechanisms for a policy, as well as business strategies, by involving all the institutions and individuals". Developing an STD involves networking several stakeholders (Gretzel, 2021; Neuhofer, Buhalis, & Ladkin, 2012). From this perspective, successful destination governance implies agreement on objectives and pooling of resources, work distributed in a balanced and judicious manner by policymakers and professionals and the ability to adapt to change (Conceição, Dos Anjos, & Gadotti dos Anjos, 2019). STD governance relies on planning, public–private collaboration and management towards sustainability and competitiveness through innovation (Boes et al., 2015; Corte et al., 2017; Koo et al., 2016; Sari & Göktaş Kulualp, 2020; Sorokina et al., 2022). One of the innovations brought about by this type of governance resides in the fact that from now on, public actors must participate in innovation and not expect everything from private companies (Arrona, Franco, & Wilson James, 2020). It begins with an administrative reorganization that must give way to new schemes leading to a resource allocation framework and collaboration with private actors, thus leaving compartmentalized and inflexible top-down practices (Foray, 2018). However, this smart governance is a long process because actors face new challenges to foster public innovation. Namely, developing participatory decision-making with a multitude of public or private actors, including citizens, adopting a test and learn approach, leading an inter-departmental organization within the administration and adapting uncertainty which is intrinsic to the deployment of smart governance (Baggio, Micera, & Del Chiappa, 2020; Kyriakou, Martínez, Periáñez-Forte, & Rainoldi, 2016).

In this way, the flexible and multi-actor networking governance model featured by the STD concept seeks to contribute to the sustainability policy (dos Anjos & Kennell, 2019). Indeed, one of the key elements of smart tourism concept lies in sustainability. Although, in theory, smartness drives sustainability through technology, in practice, it is more complicated and not so visible (Perles Ribes & Ivars-Baidal, 2018). So as not to reduce it to a rhetorical use, the authors suggest a model focused on smart sustainability based on a framework led by technology. They propose implementing five fundamental pillars: planning, public–private cooperation, innovation, knowledge, transparency and participation, where governance is the keystone that supports this scheme. Conversely, the conditions for sustainable smart tourism are linked to the innovation enabled by ICTs (Shafiee, Rajabzadeh Ghatari, Hasanzadeh, & Jahanyan, 2019). In this perspective, they consider the growth of internet penetration rate, the use of ICTs, the development of smart cities and social networks and global changes as critical roles. In regions where tourism plays an important role, connecting the digital and the physical through sensors or devices can boost satellite

business sectors such as facilities, transport or local resources and thus contribute to the local development of a destination (Romao & Neuts, 2017). Mixed methods using data from social media, online review platforms and open administrative datasets can be relevant and crucial to managing sustainability in a smart tourism context (Xu, Nash, & Whitmarsh, 2020). Indeed, capturing information such as tourists' movements, travel patterns, cross-border tourist flows, energy used and employment may largely contribute to managing social, economic and environmental impacts. Maybe, the hardest part is turning theory into practice. In that way, public and private stakeholders should build a good relationship by working together on common objectives to convey confidence to investors. Then, it could invite all actors to engage in innovative projects toward smartness and sustainability (Rocha, 2020).

However, a successful transition from a traditional to a smart destination would also require placing the population at the model's center, i.e. tourists and residents. Thus, as pointed out by Sigalat-Signes, Calvo-Palomares, Roig-Merino, and García-Adán (2020), the issue of citizens in the paradigm of territorial and tourism intelligence remains underdeveloped. However, they are the cornerstone of the concept, as they are its primary users. Besides, STD needs to be analyzed holistically, considering knowledge specific to several disciplinary fields, such as information systems, urban planning, marketing, governance or data analysis (Xiang et al., 2015). Nevertheless, this tourist destination vision raises many questions about the future of the tourist experience (Vergopoulos, 2016), the invasion of privacy and freedoms or the control of the tourist territory by algorithms. Moreover, it seems more challenging to set up a new governance model with an innovative technological base than to develop a theoretical concept.

Smart tourism destination according to Segittur: certification process, indicators and promotion

Segittur is a Spanish public firm specializing in innovation and tourism technologies. It depends on the Ministry of Industry, Trade and Tourism and is attached to the State Department for Tourism. The company occupies a central position in the tourism industry in Spain, with 347 members, including 226 destinations, 50 institutions, 68 companies and 3 observers. It leads the Network of STDs. Segittur has also worked with destinations in Latin America such as Mexico and Colombia for some years. For Segittur (2020a), STD is "an innovative tourist destination, consolidated on a state-of-the-art technological infrastructure, which guarantees the sustainable development of the tourist territory, accessible to all, facilitates the interaction and integration of the visitor with the environment and increases the quality of the experience in the destination and improves the quality of life of the residents." This definition fits the methodology of Segittur, which considers five axes: governance, innovation, technology, sustainability and accessibility. To become an STD, Segittur suggests a five-stage methodological process that follows two cycles. The first cycle is called diagnosis and planning grants for a diagnosis based on an assessment of 96 criteria and 262 indicators, based on standards issued by the Spanish Standards Association (UNE) (Segittur, 2020b). This first stage allows the candidate destination to be integrated into the Segittur STD network and to define a strategic action plan for the destination to become STD. The second cycle, named execution and follow-up, helps the destination implement this action plan to obtain the title of STD awarded by Segittur. It can last a certain period of continuous improvement to guarantee the objectives and the required transformations (Segittur, 2021).

Then, it is necessary to define two essential elements of the Segittur methodology: standards and indicators. According to Grenard (1996) "The phenomenon of normalization from its generic definition is a process for developing and producing reference documents, i.e. standards," (p. 3), and the certification is "the attestation of conformity of an entity to standards, by a third-party". Other scholars specify that certification is "a procedure that

audits and gives written assurance that a facility, product, process, service, or management system meets specific standards" (Honey, 2002), p. 380. Certification is "an effective tool for regulating tourism initiatives and has the potential to reduce negative social and environmental impacts associated with tourism". At the same time, in developing countries, certification seems to beneficiate more to the private sector than the country, ignoring socio-cultural issues (Rattan, 2015), p. 11.

On the other hand, indicators, which is a variable that can describe the state of a system (Walz, 2000), provide "an indication, i.e. an entity that can be used as an argument of a function used to take a decision" (Riley, 2001), (p. 6), or even measuring destination competitiveness (Mendola & Volo, 2017). According to Noss (1990), (p. 358), "the selection of indicators depends on formulating specific questions relevant to management or policy that are to be answered through the monitoring process". Moreover, the indicator term can have different meanings that can be held for descriptive, normative or hybrid measures (Heink & Kowarik, 2010). In the case of Segittur, they offer an STD certification to tourist destinations that comply with UNE standards, which serve as the basis for establishing the indicators divided into the five axes mentioned above. According to Ivars-Baidal, Celdrán-Bernabeu, Femenia-Serra, Perles-Ribes, & Giner-Sánchez (2021), indicators represent an excellent manner of measuring, managing and monitoring STDs initiatives and are a helpful tool in the policy-making processes. A study on the use of indicators to measure the competitiveness of tourist destinations indicates that they are mostly the end goal rather than the starting point for evaluation and consultation (Mendola & Volo, 2017).

Furthermore, the certification can draw the attention of media and public opinion. It can be an attractiveness factor from the point of view of marketing positioning and the perceived image of the tourist destination. Likewise, initiatives have been taken in Europe and Latin America to develop a link between governance and destination marketing through websites promoting smart tourism (Gretzel & Collier de Mendonça, 2019). Thereupon, smarttourismcapital.eu is a website promoting the European capitals of smart tourism. This is an award granted by the European Commission to reward innovative and smart tourism in European cities (Sotiriadis, 2022). Websites such as destinosinteligentes.es and reddti-ar.com.ar, respectively, set up by Segittur in Spain and Argentina, are two smart tourism networks built for exchanging experiences and knowledge to promote STDs. According to dos Anjos and Kennell (2019), this kind of action fosters the debate between all stakeholders and coordination and may contribute to smart governance forward. In the other hand, Tavitiyaman et al. (2021) have identified four significant attributes of smart tourism applications (smart information systems, smart sightseeing, e-commerce systems and smart safety) that reflect tourists' positive perception and enhance behavioral intention.

Case of Medellín as a smart tourism destination

The case of Medellin (Colombia) presents characteristics worth studying. The town has suffered from stigmatization and a poor reputation in the past for its drug trafficking and violence. Today, Medellín is the capital of the Antioquia region and the second-largest city in Colombia, with a population of 2,933,094 (Medellín, Alcaldía de Medellín, 2020) and a dynamic economic environment, ranking among the most innovative cities in the world. Its climate, infrastructure and people's kindness attract more and more travelers. But, the eternal spring city still copes with an image linked to the Medellín cartel (Piñeros, 2019), of which the city was a victim between the 1980s and the mid-1990s. The Gini coefficient, which measures the inequality level within a population, went from 0.52 in 2014 (Públicas, 2015) to 0.47 in 2018 (Colombia, Departamento Administrativo Nacional de Estadística, 2019). Since 2015, the city has stopped appearing on the list of the 50 most violent cities in the world. However, although these figures have improved, they do not hide the urban problems that continue to occur in Medellín. Historically, Moreno Bedoya (2003) argues that the violence committed in Medellín has affected some areas while others remain relatively

preserved. The areas where most acts of violence occur are the northeastern, northwestern and central western areas, notably characterized by being spaces that present more significant exclusion, where people live from informal jobs, and in which the population faces complicated economic and social problems.

At the same time, the tourism policy of Medellín and its communication campaigns want to overcome the stereotypes, promoting cultural, local and business tourism, to attract new visitors. Between 2008 and 2019, Medellín has seen its number of foreign visitors increase from 75,761 to 383,874 (Antioquia, Observatorio Turístico de Medellín, 2020), becoming a trendy tourist destination in Latin America. Also, its environmental, culture, progress, education and technology efforts have led Medellín to be awarded as "Most Innovative City of the Year" and to engage in an STD certification. This development has captured the attention of researchers: connecting the social transformation of Medellín induced by tourism with the development of a city brand strategy (Hernandez-Garcia, 2013), the conditions for an emerging sustainable tourism in a post-conflict context (Castillo-Palacio, Harrill, & Zuñiga-Collazos, 2017), the effects of tourism policies on local development (Leal Londoño & Medina, 2017) or the role of memory tourism in the city's metamorphosis Naef (2018). Moreover, City Hall has communicated the most about the STD certification started with the Spanish public company Segittur in December 2020, stressing that it was "the first city in Colombia to obtain this title and the second in Latin America". Therefore, it seems interesting to us to take the case of the city of Medellín in Colombia to study the dynamics of STDs in Latin America with a certification granted by a Spanish company.

Methodology: case study

Given its complexity, transversality, global and evolving nature and firm anchorage to places, tourism justifies using an empirical inductive approach that allows us to start from observing dynamic interactions in Medellin and go ex-post to a more theoretical framework. Thus, induction designates a researcher's posture that pays particular attention to the primary data collected (Interviews, surveys, observing, social media analysis, etc.), to the observation of interactions (interactions in context) and lived experience. The inductive approach calls for the mobilization of more qualitative than quantitative data. It takes account of the rigor and form of the statement and the nature of the information transmitted and analyzed.

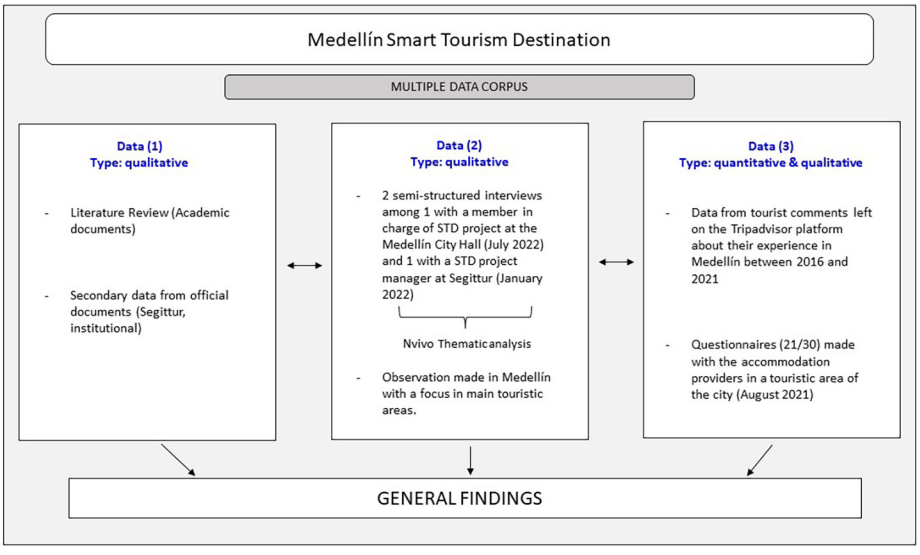
We choose the single case study (Stake, 1995; Yin, 2018) as a research method. It can complete or even refine an existing theoretical framework by considering particularities identified in its natural context (Gerring, 2016; Yin, 2003) over which we have little or no control (Xiao & Smith, 2006; Yin, 2003). Our methodology relies on a corpus of multiple data that can complement each other to obtain a global view (Bloomberg & Volpe, 2018).

Thus, we choose to adopt a qualitative approach to understand better the process of the STD certification made by a Spanish company for a Latin American destination, for which we have no clear outcomes (Bloomberg & Volpe, 2018). Our transversal study explores a bounded system (Bloomberg & Volpe, 2018) during a single period since the certification procedure is relatively recent. Besides, the diversity of the data mobilized for this case study allows us to highlight the possible similarities and contradictions (Caillaud & Flick, 2016). Moreover, the case study is a methodology widely applied in tourism research, particularly in public policy (Xiao & Smith, 2006). So, it reinforces our choice to use such a methodology to bring out from our analysis essential elements to understand better the issues related to an STD certification.

As Figure 1 shows, the corpus is composed of three types of data:

1. academic articles and secondary data from documents of tourism and public institutions;

Figure 1 Research design



Source: Authors according to Yin (2003, 2018) and Xiao and Smith (2006)

2. two semi-structured interviews made in 2022, respectively, one with a manager in charge of the STD project at the Medellin City Hall, and the second-one with an STD project manager at Segittur, qualitative data from observation, conducted in several places in the city of Medellín, during approximately one month between August and September 2021; and
3. a questionnaire addressed to the staff of accommodation establishments in a tourist area of the city in September 2021, digital data in the form of comments written by tourists on the online review site TA, who visited the city between 2016 and 2021.

The data (1) allow us to carry out a literature review around the concepts of smart city and smart destination through a theoretical approach; also, we could synthesize the meaning given to STD by the Spanish company Segittur through their methodology and the principal axes that compose it.

The data (2) were collected during observation and two semi-structured interviews with key STD project stakeholders:

1. Observation is a fundamental method for qualitative inquiry which allows to discover and explore situations or interactions in their natural habitat. In addition, it enables researchers to experience reality through immersion, detect recurrent patterns and explain behavior or relationships (Bloomberg & Volpe, 2018). As stated by Winkin (1998), although tourism is a large-scale economic and social phenomenon, observation enables to be as close as possible to the field, which is not a standard method in tourism studies. We, therefore, chose the observation in an exploratory way by focusing on the tourist dimension of the city of Medellin. The observation allowed us to analyze the behavior of tourists in the studied environment and the local infrastructure. The observation lasted one month between August and September 2021, conducted with a field diary in which it was indicated the places visited, the subjects and the environments observed and the time interval devoted for each place.

2. Data from semi-structured interviews with Segittur and the City Hall were conducted online, averaging 50 minutes. For Segittur, it started with a general presentation of the STD certification. It evolved and focused on the requirements expected for each axis, the nature and number of criteria and the protocol implemented with the destination. For the City Hall, the interview started with a presentation on tourist governance in Medellín, then focused on the STD certification process and the actions implemented. Finally, for both interviews, questions were asked about the juxtaposition of a Spanish model within a Latin American destination. To make sense of the textual data collected, we opted for coding with NVivo. Data were recorded, transcribed, analyzed and finally translated from Spanish to English. After careful reading, key phrases were selected and tagged with keywords and concepts identified in the literature review, which permitted us to identify our central themes.

The data (3) gather responses collected from accommodation providers located in the tourist area of Parque Lleras and comments from the online review platform TA made for the most touristic area of the town between 2016 and 2021:

- We surveyed 21 of the 30 accommodation providers identified in Parque Lleras, the most touristic area of the city, using a questionnaire built with open and closed questions with the Google Forms program. This type of questionnaire favors comparisons (closed questions) but also allows the observer to take into account the specificity of the organization and the singularity of the interactions in place (open questions), thus questioning, beyond the discourse, the structure of the organization and its ongoing transformations
- The numerical data from TA were analyzed mainly using two specific techniques, web scraping and the semi-quantitative text analysis technique (text mining). A series of computer functions have been developed entirely in the R language (Team, 2020). This platform has been analyzed by associating the TA search engine with one of our computer functions developed around the rvest package (Wickham, 2019) that allows the analysis of the node structure in XML and HTML objects, as well as its extraction from tags. During this phase, 737 comments (in English) were collected between 2016 and 2021 and subsequently analyzed. The textual analysis phase consisted of constructing unigrams and bigrams (Silge & Robinson, 2016; Wickham, 2020) in which tokenization or separation of words is carried out individually or in pairs. Finally, the visualization of these results is synthesized based on word clouds (Lang & Chien, 2018) and bar graphs (Wickham, 2016) that will allow obtaining a general semi-quantitative perception of a representative population of tourists.

Results

The semi-structured interviews (2) provide information about the STD certification process between a Spanish company and a Latin American destination, and focus on its transformation into an STD. The observation (2) allows us to analyze the urban organization of the destination, the behavior of tourists and the infrastructure. The data collected from the TA comments and accommodation providers (3) complete the previous data; respectively, focusing on the perception of tourists visiting the main attractions of the city and relevant clues from accommodations' staff who work in a district highly frequented by tourists.

Global observation with a focus on Parque Lleras

This methodology allows observation of tourists and residents in each space, interaction with some of them and identification of the city's main tourist areas. This observation survey took place day and night in many places in the city, especially in "Parque Lleras". First, from an urban planning point of view, the city of Medellin is divided into 16 neighborhoods,

following a logic of categorization by socio-economic strata. Stratum "1" refers to the poorest socio-economic classes and stratum "six" to the richest. Although the city's social and urban planning policies aim to mitigate the disparities created by such a division, particularly by focusing on public transportation to open up the most disadvantaged neighborhoods, this urban planning tends to highlight the segregation, poverty-related problems, violence and inequalities within a city (Brand, 2013). Generally, Medellín is a welcoming city; permanent residents seem to have a natural ease in exchanging and interacting with people, even more so with foreigners. The city has an international airport about 25 km from the center and is accessible by bus or cab. The airport is medium-sized and has few services, especially for online check-in. The city has a pleasant climate all year-round, although its topography, a valley, often gives way to pollution peaks, which sometimes make the air unbreathable. Although heavy traffic causes traffic jams, Medellín is the only city in Colombia to have modern public transportations with two metro lines, five cable car lines, a bus network that serves the whole city and cycle paths with a public bicycle rental service.

The metro is aerial, and most stations do not have electric stairs, which can be a problem for people with reduced mobility. However, there is an electrically operated facility for wheelchair users, allowing them to use the metro. The five cable car lines connect the most remote areas of the city to the downtown area and are a popular attraction for residents and some tourists for the views they offer. Outside some residential regions and busy areas such as the city center or certain tourist areas, the city is not conducive to pedestrian activity. Pedestrians rarely have priority.

Moreover, the sidewalks are not all properly adapted and, sometimes, non-existent. From the point of view of innovation and modernization, the city offers an Internet connection via public Wi-Fi spread in a dozen places in Medellín, especially the cultural and tourist areas. A physical tourist office with a digital information terminal is also available in the city's center. However, tourists do not seem interested in it, considering the few tourists we met there. Also, the city offers the "Medellín City Card," a pass that can be purchased online to access five places of interest. Medellín is a dynamic and festive city, with a business network and many cultural places such as theaters, museums, social cooperatives, activities and meeting places, especially in the center. The city also has gardens and parks in a natural setting, such as Parque Arvi, which is reachable by public transport. However, this observation shows that the places frequented by permanent residents differ from those frequented by tourists. Tourists seem to congregate in the same places for security reasons, which prevents the mixing and interaction between tourists and permanent residents and value other places in the city (Table 1).

Two semi-structured interviews to catch the certification process

The STD certification relies on a standard provided by Segittur, enhancing some functional aspects of the tourist destination organization and occulting some others, primarily environmental issues and physical infrastructures. Thus, we identified three significant themes for this STD certification process.

A smart tourism destination certification built based on European standards adapted to the Latin American demand In 2020, the public tourism policy of Medellin established by the City Hall wished to set up a new model of tourist planning by contacting Segittur to convert it into an STD. Indeed, previously, the organization of tourism was centered on the promotion of the destination:

> Before 2020, the touristic strategy of the city was solely based on promotion [. . .]. In 2020, the city was looking for a globally recognized methodology, we realized that the trend was STD and that the leader in this field was Segittur (Medellín STD Project Manager).

Table 1 Focus on Parque Lleras, the most touristic area of the city

Location	*El poblado (stratum 6)*
Configuration	Many hotels, hostels, restaurants, discos and bars concentrated on the place
Main touristic attraction	Tourists gather around the central plaza to find many services for lodging, dining, booking excursions, public Wi-Fi, etc
Atmosphere	The place is relatively calm and uncluttered during the day. At night, especially during weekends, the place turns into a party center and gathers many people offering sexual services to tourists and the possibility of buying illegal substances
Accessibility	Hilly streets but suitable for pedestrians. The nearest metro is a 20-minute walk away, the area is also served by taxis and private drivers
Specific aspects	Deviance in the tourist activity: prostitution and drugs, exclusively reserved for tourists. Paradoxically, it remains relatively secure because of the police presence

Source: Authors

Following this first contact, to make the first diagnosis, Segittur sent them questionnaires to fill out and return, which included 400 indicators:

> During the first phase, we send the questionnaires, i.e., the questions regarding the indicators corresponding to each of the five axes, so that the destination complements it. [. . .], we also organize as many meetings as needed (Segittur STD Manager).

Meanwhile, in the following year, Segittur reviewed its assessment by lowering the number of criteria to encourage new destinations to join their network and become STD in an easier way:

> We do not share certain criteria. In 2020, we were evaluated with an old methodology, they made their questionnaires more flexible, by reducing the number of criteria which went to 262 criteria (Medellín STD Project Manager).

Indeed, Segittur's STD certification is built on criteria that meet European standards, setting aside the socio-economic, urban, geological and political differences between Spain and Colombia:

> The methodology is a standard that has been updated for everyone, as it was created in Spain, it was thought for Spain, we took it as great challenges, things incompatible with us, they did adaptations [. . .]. (Medellín STD Project Manager).

By reducing their criteria, Segittur wishes to adapt its offer to a larger market:

> Latin America and Spain are brothers. There is a cultural and language link. Segittur adapts to demand. We serve them [. . .] In Medellin, they adapt, they adapt the methodology to the particularities of Latin America (Segittur STD Manager).

Furthermore, it is difficult to have accurate information about the criteria corresponding to the axes:

> Recently, we implemented a new scoring mode [. . .] 262 indicators based on the 5 axes that are: governance, sustainability, Innovation, accessibility and technology. Each axis is divided into areas with 3 or 4 areas per axes. There are axes with many indicators, it is distributed unevenly between the axes. The axis that has more weight is sustainability (Segittur STD Manager).

As it seems to be non-public information:

> It's not public information, because when we give the information, you understand, we show how they evaluate and Segittur wouldn't want to [. . .], well I don't know [. . .] (Medellín STD Project Manager).

During the first audit, if the destination obtains a percentage of at least 80%, Segittur certifies it as an STD:

> You need to reach 80% to become an STD. Segittur offers a new audit every two years. This year, we received a new audit [. . .] we plan to answer it at the end of August 2022 to receive an answer in October 2022, the objective is to exceed 80% to become STD (Medellín STD Project Manager).

If this score is not reached, recommendations with an action plan to set it up is suggested to the candidate destination, which nevertheless becomes a member of Segittur's STD network:

> The idea is to create collaboration within the destinations: generate documentation, reports, good practice guides, resources, business search engine for tourism [. . .] The STD proposal has an integrating ambition (Segittur STD Manager).

For Medellín, this STD certification serves as a basis for rolling out their entire tourism strategy:

> It is not only a certificate [. . .] it's a big challenge, a road map, a management plan module for the development of the city (Medellín STD Project Manager).

An organizational process based on a solid public–private collaboration

For the STD model proposed by Segittur, governance is a central pillar for deploying the project on the territory:

> Governance within a STD must be with a transversal and coordinated management of all areas, taking into account how tourism affects and is affected by the different areas (Segittur STD Manager).

Narratives show a willingness to create synergies between the stakeholders to maintain and stimulate the Culture of cooperation:

> Governance is built on the basis of a development plan: to convert Medellín into a STD [. . .] relationships between stakeholders in Medellin are very friendly, everyone makes compromises, there is always a consensus (Medellín STD Project Manager).

Joining the STD network of Segittur has enabled the city to develop governance based on articulation between numerous public and private entities:

> We are about 25 people, and we work in an articulated way with 65 decentralized public and private entities around the STD project [. . .] It can be corporations, associations, cooperation between the different sub-secretariats of the City Hall of Medellín, the Bureau of Medellín. All the identities of Medellín who work in the tourism sector and who can provide us with information about the STD (Medellín STD Project Manager).

Belonging to the Segittur STD network would be an opportunity to share information and knowledge with external structures but also with other departments of the City Hall:

> For example, the Bureau of Medellin gives us all the information about events and the digital transformation of the city, smart information points, digitalization, promotion of the destination, there is much information which are given to us, and which serve as proof that Segittur asks us [. . .] The sub-Secretariat of Culture brings us much information about historical heritage, the sub-Secretariat of Innovation, it is about open data, the use of beacons, digital transformation, etc. The Mobility sub-Secretariat: sustainable mobility, the use of bicycles, smart mobility, recycling, the Medellin subway (Medellín STD Project Manager).

The city has built a real working group dynamic that allows them to collect, share and pool information, which is not only related to the tourism sector but also from different departments:

> The intelligence of a tourist destination manifests itself when there is management capable of having all the information at its disposal, enabling its sources of information and making decisions in the short, medium or long term on the development strategy of the destination. Management with as much information as possible with its rational use (Segittur STD Manager).

These collaborations have allowed the tourist observatory to create a tourist intelligence system:

> This observatory has always existed with historical data, and we could not be in reality. With the Segittur methodology, we have set up a tourist information system of data forecasts [. . .] Through the observatory, we collect data via the Medellin city card, it is possible to buy it from anywhere in the world. We know the average length of stay, how much they spend, the visits made, the hosts, hotel occupancy, agencies give us information on the packages purchased, and the type of tourism: natural, cultural, urban, etc. that is most in demand (Medellín STD Project Manager).

A deficiency in terms of accessibility that requires a significant financial investment

The axis of accessibility is part of the STD model of Segittur, they consider that it is part of the tourist cycle:

> A STD has to make an effort to ensure that its offer has an increasingly better level in terms of accessibility within the destination for people with disabilities. You have to try to have accessible resources so that the person who arrives at the destination does not have problems getting to your destination but also within the destination to go between the hotel and the place of entertainment, beach, activity, etc (Segittur STD Manager).

During its first audit, in 2020, Medellín obtained an average of 64.1% with the highest score obtained for the "innovation" axis (88%) and the lowest for the "accessibility" axis:

> We got only 26% for accessibility [. . .]. (Medellín STD Project Manager).

If great efforts have been made to make digital information almost completely accessible:

> We work with all the attractiveness of the city so that they put in place digital accessibility plans (video, web pages accessible to all); for example, for people of short stature, with hearing problems, with reduced mobility, visually impaired people, there are city maps in Braille, immersive videos in sign languages. It is something that we had a hard time digesting with such a low score. [. . .] our digital transformation is accessible, it was a difficult but beautiful process because in the end we had good results (Medellín STD Project Manager).

Improving the accessibility of infrastructure such as sidewalks, public transport, roads, etc., seems to be non-existent in the new certification process:

> Our actions in terms of accessibility do not concern physical infrastructures (roads, sidewalks, buses, etc.), it's out of our control and we can't force tourism players to invest (Medellín STD Project Manager).

Indeed, it requires large financial investments:

> The STD model is an expensive model, you have to do things that require investments: things that are not adapted or accessible like sidewalks, places, museums, web pages, content, generate online content, human resources, etc. [. . .] It's an opportunity to develop and improve the competitiveness of the destination, for both the tourism sector and the improvement of the quality of life of residents (Segittur STD Manager).

And above all it depends on various local institutions and legislation:

> They realized that in Latin America, unlike Spain, we have no legislation on mobility, sustainability, [. . .] for Colombia it's very difficult to adapt, there are a lot of improvement to be made to have a level of advance on this axis [. . .] they are very advanced on this subject and on

> digital transformation, we are making progress on this topic, they're reducing that requirement a bit for one to become a STD (Medellín STD Project Manager).

Beyond the political and socio-economic differences between Colombia and Spain, there are also differences related to topography:

> Medellín is a city located between mountains, we do not have this infrastructure, bus stops, roads, public transport [. . .] The city has given priority to what does not require physical investment (Medellín STD Project Manager).

The city informs institutions and professionals so that they integrate the dimension linked to accessibility in their projects:

> For example, we are in the process of building a new subway station, we are working with them to tell them that this station must be fully accessible. If a hotel, a tourist site, a travel agency, transform its website, we ensure it is accessible (Medellín STD Project Manager).

Focus on main touristic areas in Medellín

The data (3) gather responses collected from accommodation providers located in the tourist area of Parque Lleras and comments from the online review platform TA made for the most touristic area of the town.

Accommodation provider's point of view. We surveyed 21 of the 30 establishments identified, and 9 hosts did not respond, probably because they did not have a reception or did not wish to reply. The establishments surveyed belonged to different categories, including youth hostels (19%), bed and breakfasts (4.8%), hotels 3* (47.6%), hotels 4* (23.8%) and hotels 5* (4.8).

While respondents said that clients were generally satisfied with their experience in their establishment (95.2%), some were more nuanced about tourist behavior. They have witnessed changes in the neighborhood following the development of tourism since the mid-2010s. As one notices, "a few years ago, there were hardly any tourists, but now there are many coming from many countries, and we are afraid because someone who comes from so far, we say 'what are they doing in Medellin?,'" however, the increasing flow of tourists supports job creation in accommodation, catering, tourist services and nightlife and makes the area increasingly attractive. "There are more and more establishments that are opening, more circulation of people. There are more nightclubs, restaurants, bars, and hotels". Nevertheless, as we found during our observation phase, although Parque Lleras is a well-equipped, accessible and pleasantly arranged place, it is witnessing a form of deviant tourism with prostitution and delinquent acts, primarily related to the sale and consumption of drugs. By interviewing the hosts, we not that, on the one hand, most hosts speak openly about deviant behaviors, seem saddened by the situation and lack the means to limit the nuisances caused. As said, "Before, Parque Lleras was a quiet family place. The atmosphere is heavier today, due to the prostitution that is a door for drugs and robberies in this neighborhood". On the other hand, interviewees see a kind of hedonic tourist practice. "I respect this type of thing because ultimately, people choose what they want for their lives. Prostitutes or people who use drugs do it of their own free will. (. . .) So, the hobby here is all about sex, alcohol, etc.". Some add that these behaviors in the local press deter tourism and the destination's attractiveness.

About the STD certification process ongoing in Medellín, 71.4% of the hosts surveyed said they were aware of it, while 28.6% did not know what it was. For some hosts, the STD is a recognized status and some even feel pride. They think it could improve tourist activity with more effective communication between the tourism professionals and the institutions that have set up this STD project. The following excerpts testify it: "We are working with the city to change somehow the sex tourism that is apparent in this area", or "We are also

developing solutions that are in line with sustainability with drinking water dispensers, [. . .] and we are cautious about tourists' identification documents, their behavior, etc." and "The idea is to inform the City Hall about the tourism activity [. . .]. For example, we want to install more lighting in the area to deter risky behavior at night and reduce insecurity, put cameras and curfew hours".

In addition, some hosts say that tourism is a gateway to innovation, local economic development, the creation of new places and the promotion of heritage. As said, "tourism makes the city active, receiving many foreign tourists. [. . .] It brings technology and innovation; many new hotels are being built, with much innovation". Alternatively, "Tourism is a way to showcase our culture: gastronomy, tourist sites, etc. It contributes to the economic development of our city".

Tourist's point of view Figure 2 gathers a series of terms found in the extraction of 737 comments in English on the TA platform during the period 2016–2021. Regarding the word cloud reading grid, the size of the words is proportional to the frequency of appearance: the larger the word, the more frequently it is found in the semantic analysis. The Parque Lleras world cloud comprises comments exclusively extracted from the "Parque Lleras" TA page. The other comprises six main touristic attractions, namely, Museo de Antioquia, Graffitour, Parque Arvi, Plaza Botero, Parque Explora and the metro.

For Parque Lleras, the word "Night life" appears most frequently, confirming our observation data (2), where the most intense activity occurs at night and during weekends with the appearance of the word "Saturday night." The other most frequently used terms revolve around the theme of the recreational life offered by this place, for example "restaurants," "bars," "clubs."

On the other hand, and to a much lesser extent, when commenting on their stay, tourists use negative terms such as "drug dealers" and "prostitutes," which corroborates the declarations of some accommodation providers (3). Tourists would therefore be more enthusiastic about making positive comments than the opposite in an area experiencing some decline. These terms confirm what has been observed in this area: the presence of deviant tourism with the circulation of drugs and prostitution activity reserved for tourists.

For the main touristic attractions, the words "highly recommend," "tour guide," "metro cable," "parque arvi," "plaza botero" appear most often, qualifying the experience and the places most visited, highlighting the "metro system." It is in line with our observations (2)

Figure 2 Word clouds

Notes: (a) Parque Lleras; (b) medellin main touristic attractions
Source: Authors

made during our visit to this place, marked by a large influx of tourists in some well-located regions. To comment on their visit, tourists use terms like "botero sculptures," "street vendors," "extremely clean," "interactive exhibits," "bike tour" or "civica cards," describing the touristic offers and infrastructures that we also notified during our observation phase. Moreover, there is a contradiction with the use of the term "highly recommended" used quite frequently given its size, and the words "drug addicts," "drug dealers," or "people watching," used to a lesser extent. However, if we cross-check this with our observations, it seems to correspond to reality since, as we have mentioned, Medellín is a pleasant city with warm inhabitants. However, some places remain dangerous or with a feeling of insecurity especially at night.

Figure 3 represents the sum of the positive and negative words used in the tourists' comments during their visit. For the Parque Lleras, the frequency of negative words is slightly higher than positive comments. This analysis of the tourists' feelings made from the sum of the terms used shows that even though the tourists use terms belonging to the lexical field of the party, their general perception of the place is still negative. Whereas, for Parque Lleras, the words cloud shows a more positive connotation than sentiments' expression. However, the difference between the positive and negative accumulation is not abysmal; tourists are not fully satisfied with their experience in this place. Regarding the other main tourist attractions, the frequency of favorable terms is slightly higher than that of negative words.

This sentiment analysis shows that although tourists mentioned the presence of tendentious behaviors in certain places, also seen in our observation, the positive accumulation remains higher than the harmful accumulation. Nevertheless, tourists' mixed feelings about their presence at Parque Lleras are consistent with the testimonies of the hosts interviewed in this area, particularly the appearance of certain deviations such as drug use and prostitution in a tourist context.

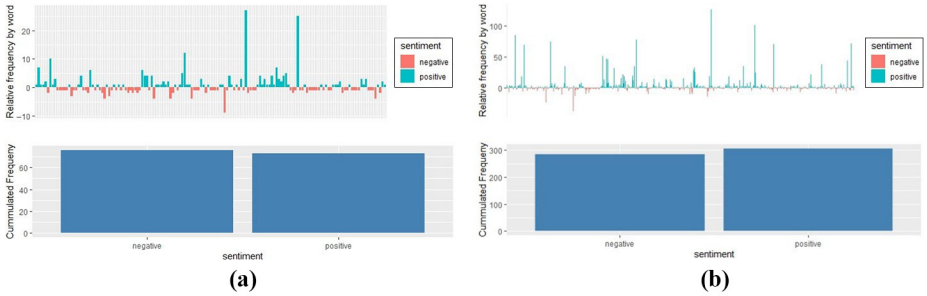
Discussion and conclusion

Medellín represents an interesting case study because of the shift from a violent and dangerous territory to the process of becoming a STD. This study allows us to formulate two research questions and provide the following answers:

RQ3. How does a Spanish company propose the STD certification process for a destination located in Latin America?

Medellín has experienced exceptional tourist growth in a few years, going from a dangerous city to a trendy destination. In a short time, the city had to become aware of its power of

Figure 3 Sentiments' expression



Notes: (a) Parque Lleras; (b) medellín main touristic attractions
Source: Authors

attractiveness and its position as a tourist destination at the international level, which is becoming increasingly important. Medellin being a relatively young international destination, the city's team in charge of tourism policy wanted to adapt to this new configuration by seeking an innovative and globally recognized tourism planning model. At the same time, Networking and STD Segittur certification is attracting more and more destinations in Spain and internationally, specifically in Latin America. Indeed, historical ties and the common practice of Spanish promote and facilitate exchanges between the two continents. The results of our study revealed several interesting things. The STD Segittur methodology, based on European standards, is not fully applicable in Colombia. Thus, Segittur had to review the composition of the questionnaires, particularly concerning the axis of accessibility, by modifying or deleting specific criteria. Indeed, Medellín, as a city and tourist destination, has many physical infrastructures that are not suitable for all; and this requires proper planning and financial investment. As we noted during our observation, numerous sidewalks, lanes and access to buses or certain metro stations are not entirely suitable for disabled people. The city's policy does not support a legislative framework concerning accessibility considering that it is not a matter of public policies but a private investment. These accessibility difficulties also concern digital infrastructures such as websites, applications, or city maps. They have benefited from an improvement by offering content with subtitles for deaf people or applications with auditory descriptions for the visually impaired. According to Irazábal and Jirón (2021), it is like positioning urban problems into technological problems to propose technological solutions.

Nevertheless, this STD certification process has enabled Medellín to review its tourism policy, previously focused on promotion and to consolidate its governance. Since then, an articulation to establish lasting links between public and private actors has been built to pool information, data processing and analysis to make decisions on standard bases known to all, as evidenced by the modernization of the city's tourism observatory. Although this certification process questions the validity of specific essential criteria, it nevertheless constitutes a device that will help destinations manage tourism by setting limits and standards, primarily by digital tools.

RQ4. How do tourists and accommodation providers perceive the transformation of a tourist destination into an STD?

The data analysis (2) from the observation allowed us to understand better the urban, social and tourist configuration. The town has many assets, including a modern and extensive public transportation system, a strong sense of hospitality with a willingness to communicate a positive and enthusiastic image of the destination and the presence of cultural and natural sites. However, cross-referencing data (2) and data (3) show certain limitations and even tourist practices that are totally at odds with the values conveyed by an STD. For example, we observed a form of sex tourism and micro-trafficking in drugs for tourists. These nuisances were visible during our observation (2) and mentioned by the hosts (3). While the visible phenomena of tourism linked to drug use and sex stay localized in a specific part of Medellín (Parque Lleras), the lack of accessibility and infrastructure adapted to pedestrian mobility is evident in the city.

More particularly, although the data (3) shows a positive perception by tourists in the city's main tourist sites and a somewhat negative perception following their experience at Parque Lleras, the digital infrastructures improvement of Medellín is not noticeable in their comments. In their wording, nor do the tourists allude to technology, applications, accessibility, sustainability, or innovation, which are the pillars of the STD in academic research and political discourse, and among certain practitioners.

Indeed, the STD includes a processual part related to governance and the organization of the tourist territory, which is not visible to tourists. In the other hand, it also includes a functional part, more visible to tourists, resulting from the actions implemented as part of the

tourism policy, such as the use of products and services (apps, Medellin City Card, accessible websites, etc.) aimed at facilitating and fluidizing the tourist experience; without being explicitly verbalized by tourists, but rather expressed by a feeling of satisfaction or by the issuance of recommendations (Figure 2). As for the hosts, if the data (3) indicate a neighborhood's deterioration, such as insecurity and public space transformation, following the growth of visitors; they see tourism as a source of income. From hosts, the STD process can be perceived as an evolution of relations between them and political institutions. Indeed, local public authorities consult and propose solutions to reduce tourism deviations, redefine specific water-use and waste management standards, or install lighting devices to avoid gathering tourists and thus sex tourism or drug consumption on that touristic area. Thus, the perception of transformation into an STD is hardly perceptible insofar as it is not directly tangible. Although it is present in the political discourse for competitiveness, in their discourse, the hosts do not perceive it in a direct way. The perception of the STD is challenging to capture because the continuous experience improvement leads to the result, and above all, this requires a longitudinal study to be carried out over a long period of time.

Nevertheless, the transformation of Medellín into an STD relies on numerous improvements. The team in charge of tourism at the City Hall indicates that it is implementing actions to improve the quality of life of tourists and residents, as shown on Table 2. As part of an inclusive policy, it concerns awareness campaigns for young women (prostitutes) or closer communication with tourism professionals. In addition, Segittur indicates that the destination must also improve the infrastructure related to accessibility. Thus, accommodation providers perceive STD as an opportunity to innovate, which leads them to communicate with institutional actors to propose solutions.

The single case study methodology allows us to gather a corpus of multiple data to better grasp the tourism transformations in the city of Medellín. First, it allowed us to present its evolution from a dangerous city a few years ago to a SDT in the making, and to better

Table 2 STD process assessment

Field	*Actions implemented following the certification request with Segittur, between 2020 and 2022 according to the Medellín STD Project Manager*
Governance	• Expansion of the tourism advisory council: A team of 25 people within the City Hall secretariat of tourism, including 6 people dedicated to the STD project, who work with 65 public and private entities around the DTI project which constitutes the central element of the tourist planning of the city • Modernization of the tourist observatory towards a tourist intelligence system • City brand creation
Innovation	• Medellín City Card • Medellin travel app design
Technology	• Smart tourist information – Installation of 54 beacons distributed in the city to collect data – Augmented Reality – Smart tourism center
Sustainability	• Diploma in leadership and management of community tourism • Community tourism training: design of cultural tourism products, digital marketing, etc. • Training in responsible tourism, accessible tourism, hotel and gastronomic offer including inhabitants and tourism value chain's actors
Accessibility	• Adjustments in the digital ecosystem to make it accessible: – Medellin.travel app and platform – Smart tourism center

Source: Authors

understand the STD certification awarded by Segittur. This article has provided information highlighting the STD meaning and limitations for tourism development in Medellin. In addition, the case study has allowed us to cross-check some data, revealing the importance of having a transversal and long-term vision in implementing an STD project and its usefulness in the communication between stakeholders.

Medellín is experiencing an evolutionary process. At the turn of the 2010s, the city experienced reborn with political decisions that allowed to curb insecurity and create a favorable climate for economic investments. This stage also marks the transition from a dangerous and unattractive city to an innovative one, representing a title of recognition for this territory marked mainly by an unsavory past. In the early 2020s, the town follows a logical sequence with the transposition of the smart city model into the tourism sector, which has in common, among other things, the objective of using a technological base and the data derived from it (Brandt et al., 2017) to improve services for residents and tourists (Başer et al., 2019). Indeed, the increase in the number of tourists visiting Medellín has led to the emergence of new needs, particularly in terms of infrastructure, services, sustainability, accessibility and establishing its status as a tourist destination through the lever of attractiveness in a competitive environment. In almost 20 years, Medellín, also known as a Software Valley, has started and continued a social, urban, tourist and technological transformation.

As an opening for future research, several questions arise. How representative and exemplary is the STD certification in Latin American countries? To what extent is Medellin a singular case or one that can be transposed to other cities? Beyond the commitment to the emergence of an STD, how much resilience is there?

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