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JOURNAL OF TOURISM RESEARCH / REVISTA DE INVESTIGACIÓN EN TURISMO

En el taíno, una de las lenguas indígenas del Caribe, el término *Ara* significa árbol y gente, entre varias otras acepciones. *Ara* es un símbolo de identificación y arraigo al territorio caribeño, y a la vez un símbolo universal con un mensaje y un sentido muy positivos.

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In the Taíno language, one of the indigenous languages of the Caribbean, the term *Ara* means tree and people, among various other significations. *Ara* is a symbol of Caribbean identity and origins as well as a universal symbol with a positive message.

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ÍNDICE
SUMMARY

Mobile Ethnography as an Innovative Tool for Customer Experience Research in Tourism – A Case of the Tourism Destination Upper Austria

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Abstract

Service marketing has evolved from focussing on products to services to experiences. Enterprises are nowadays competing for and looking for competitive advantages in experiences rather than customer satisfaction. Even though customer experience management is nothing new, it is a field that has evolved strongly in the last years. Especially in tourism destinations, various local tourism providers struggle with providing high service quality throughout the whole customer journey. Customer experience management has thus become an interesting approach also in tourism research. This paper applies customer experience research by using an innovative research method. Mobile ethnography as a qualitative method transfers the classic ethnographic approach by using mobile devices. Thus, the customer becomes a researcher himself and has the possibility to self-structure his or her data. Especially for tourism destinations, this method allows to "follow" the guest throughout the geographical space that he or she uses and collects data in real-time and in-situ. It therefore overcomes many of the disadvantages of both classic survey studies and ethnography. However briefing of participants and incentivising them turned out to be the main challenges in two projects carried out in the Austrian province of Upper Austria.

Resumen

El marketing de servicios ha evolucionado de centrarse en productos a servicios y experiencias. Las empresas compiten actualmente y buscan ventajas competitivas en las experiencias en lugar de la satisfacción de cliente. Aunque la gestión de la experiencia del cliente no es nada nuevo, es un campo que ha evolucionado mucho en los últimos años. Especialmente en los destinos turísticos, varios proveedores turísticos locales luchan por proporcionar una alta calidad de servicio durante todo el trayecto del cliente. La gestión de la experiencia del cliente se ha convertido así en un enfoque interesante también en la investigación del turismo. Este artículo aplica la investigación de la experiencia del cliente mediante el uso de un método de investigación innovador. La etnografía móvil como método cualitativo combina el enfoque etnográfico clásico mediante el uso de dispositivos móviles. Por lo tanto, el cliente se convierte en investigador y tiene la posibilidad de auto-estructurar sus datos. Especialmente para destinos turísticos, este método permite "seguir" al huésped a lo largo del espacio geográfico que utiliza y recolecta datos en tiempo real e in situ. Por lo tanto, supera muchas de las desventajas de las encuestas clásicas y la etnografía. Sin embargo, las instrucciones para los participantes y sus incentivos resultaron ser los principales desafíos en dos proyectos llevados a cabo en la provincia austríaca de Alta Austria.

Key Words:
Mobile Ethnography, Customer Experience Research, Service Marketing, Experience Management, Tourism Destination, ExperienceFellow.

Palabras clave:
Etnografía Móvil, Investigación de Experiencia de Cliente, *Marketing* de Servicios, Gestión de Experiencia, Destino Turístico, ExperienceFellow.

Introduction. Problem Statement

International tourism is facing growing competition as new destinations are emerging and customers are becoming more demanding (Porter, 1990; Dwyer, Forsyth, & Rao, 2000; Morrison, 2013). The Internet has increased transparency and the access to information and consumers are therefore gaining more power as they are no longer just information seekers and users, but also content providers on social media and evaluation platforms (O'Konner, 1999; Buhalis, 2004; UNWTO, 2011; Batinic, 2013; Morrison, 2013). Marketing is therefore concentrating more on customer experience management than customer satisfaction (Meyer & Schwager, 2007). However, managing holiday experiences is still a challenge as various service providers need to cooperate in order to create a high-quality service experience (Morrison, 2013). Another challenge concerns the research of customer experience within destinations and the geographical range of customers (Stickdorn & Frischhut, 2012; Stickdorn, Frischhut, & Schmid, 2014).

From Service Management to Experience Management

Tourism as a service industry implies various peculiarities in comparison to the goods industry. The tourism industry is characterized by perishability (services are produced and consumed at the same time), the lack of storage (an unsold airline ticket is a lost one), inconsistency (it is difficult to guarantee high quality as it depends on the customer's expectation and perception), asset intensity (hotels need to provide ground, a building and furnishing), dependence on location (it is crucial what the destination itself offers), people-orientation (tourism is all about the interaction of staff and customers), inseparability (travel products are sold first, but consumed at a later stage), intangibility (tourism products cannot be reproduced or reused), inflexibility (a hotel cannot change its capacity in order to react to fluctuations in demand), and imitability (how can a business develop a unique selling proposition which is difficult to copy?) (Chase, 1978; Cowell, 1986; Grönroos, 1998; Bateson, 2002). A tourism product in a destination consists of a bundle of services which focuses on a main service framed by auxiliary services (Normann, 2000; Grönroos, 2001; Kandampully, 2002). This bundle is, however, delivered by a number of local service providers within a destination. As destinations are "amalgams of tourism products, which offer an integrated experience to consumers" (Buhalis, 2000: 97), it is important to take a more holistic view (Palmer & Bejou, 1995; Buhalis & Cooper, 1998; Weaver & Oppermann, 2000).

Therefore, service marketing has to take into account these characteristics more than the goods industry (Shostack, 1977; Grönroos, 1982; Parasuraman, Zeithaml, & Berry, 1985). Marketing has seen various shifts in paradigm over the past decades. While at the beginning marketing focused on product brands, in the 1990s it shifted to service-based relationship marketing. In the 2000s, it was customer experience management that replaced this concept (Pine & Gilmore, 1999; Maklan & Klaus, 2011). Meyer & Schwager (2007) point out the differences between customer relationship management and customer experience management in subject matter, timing, monitoring, audience, and purpose.

Customer Experience Management

However, customer experience management is nothing new. The basis of CEM lies within the theories of consumer behaviour and service quality. Many authors already noticed that consumers buy products in order to satisfy expectations (Parsons, 1934; Keynes, 1936; Abbott, 1955). In their CAB theory (cognition, affect, behaviour) Sheppard, Hartwick, and Warshaw (1988) describe CE as sequences of evaluation of past, present and expected experiences, however only including the rational and not the emotional experience. Definitions of CE, however, are still rather vague (Richardson, 2010; Klaus, 2013). Richardson (2010: Online) marks that "it (CE) is the sum-totality of how customers engage with your company and brand, not just in a snapshot in time, but throughout the entire arc of being a customer". Meyer and Schwager (2007) define customer experience as "the internal and subjective response customers have to any direct or indirect contact with a company". Data about CE is collected as touchpoints, which are "instances of direct contact either with the product or service itself or with representations of it by the company or some third party" (Meyer & Schwager, 2007). A series of touchpoints is then referred to as customer corridor (Meyer & Schwager, 2007) or customer journey (Stickdorn & Schneider, 2010). Touchpoints can vary in importance and value, according to the customer's wishes and needs. They can also change within a customer's life (Meyer & Schwager, 2007).

Many authors agree that the measurement of CE is rather complex (O'Neill, Palmer, & Charters, 2002). Early work includes the SERVQUAL model (Parasuraman, Zeithaml, & Berry, 1988), which received much attention. It has, however, also been criticized for its dimensions, which do not seem to fully cover the complex concept of CE (Sureshchandar, Rajendran, & Anantharaman 2002). Furthermore it does not consider the mix of utilitarian and emotional factors (Chitturi, Raghunathan, & Mahajan, 2008) and focuses too much on the assessment of the service-delivery process through the customer (Cronin & Taylor, 1992; Richard & Allaway, 1993). CE however follows the service-dominant logic (Vargo, Stephen, & Lusch, 2008), has a much wider interpretation and involves rational and physical as well as emotional, sensorial and spiritual aspects (Gentile, Spiller, & Noci, 2007). In addition, multi-channel considerations have to be added (Sharma & Patterson, 2000; Chandon, Morwitz, & Reinartz, 2005) as well as the whole service process from pre- to post-service period (Berry, Carbone, & Haeckel, 2002; Payne, Storbacka, & Frow, 2008). Different authors worked on overcoming these limitations of SERVQUAL (Bauer, Hammerschmidt, & Falk, 2005; Kheng et al., 2010; Lemke, Clark, & Wilson, 2010; Lo & Chin, 2009; Nantel, 2000). However they all focused on measuring only specific aspects of CE such as customer loyalty or satisfaction (O'Loughlin, Szmigin, & Turnbull, 2004; Reibstein, Day, & Wind, 2009; Klaus et al., 2013). Klaus & Maklan (2012) developed the EXQ (customer experience quality) as a multi-item scale and multi-dimensional model. Based on Morgan (2007), they define CE as a continuum, namely "an ongoing process of interactions, including gathering of information, evaluation of offerings, physical interactions, purchases, consumption of services, maintenance, and evaluations after consumption" (Klaus et al., 2013: 509f). Therefore CE includes three stages (Voss, Roth, & Chase, 2008): anything that happens before the actual purchase of a service, during the purchase or service delivery itself and after the service period. In the CE continuum, Klaus (2011) proposes that the post-service period turns into a new pre-purchase phase and therefore concludes that a positive CE increases loyalty and the willingness of recommendation (Brown et al. 2005). The application of the customer experience continuum seems to be rather relevant for services, as these are evaluated over all three stages (Zeithaml & Valarie, 1988; Klaus & Maklan, 2007).

Many authors still criticize the scarcity of research on CE (Hill et al., 2002; Roth & Menor, 2003; Stuart & Tax, 2004; Patricio et al., 2008; Verhoef et al., 2009) and the fact, that many methods and tools only focus on single elements of CE (e.g. personas, service delivery process, customer contact intensity) instead of providing a holistic approach (Chase, 1981; Saffer, 2010). While the focus has been strongly on descriptive aspects of CE so far (Weed & Bull, 2004), more recent research puts the measurement of customer experience quality into the centre of attention (Klaus & Maklan, 2012). Most studies on customer experience are still being carried out by classical surveys. Meyer & Schwager (2007) criticize, that companies lack data on emotions. "Yet unless companies know about these subjective experiences and the role every function plays in shaping them, customer satisfaction is more a slogan than an attainable goal." (Meyer & Schwager, 2007: 11) They therefore created the customer experience modelling (CEM) which should serve as a method for capturing all elements that shape an experience. CE follows the service-dominant logic of Vargo & Lusch (2004). It is therefore not designed, but co-created through various interactions between the customer and the service provider. All these single service elements along a customer journey need to be taken into consideration (Berry et al., 2002). However, not all of these touchpoints (e.g. the social environment) can be designed, as they are not under the control of the service provider (Verhoef et al., 2009). Consequently we need to design situations, which support the customers in co-creating a desired experience rather than predicted outcomes (Forlizzi & Ford, 2000). Authors claim that service design methods need to focus on a holistic view of CE including all elements and touchpoints and slipping into the shoes of the customer (Berry et al., 2002; Teixeira et al., 2012).

Customer Experience Management in Tourism and Destination Management

Customer experience is therefore what companies –also in tourism– are nowadays competing for and becoming crucial for every company's success (Pine & Gilmore, 1998; Richie & Crouch, 2000; Prahalad & Ramaswamy, 2004; Shaw & Ivens, 2005; Badgett, Boyce, & Kleinberger, 2007; Johnston & Kong, 2011; Klaus et al., 2013) as it has a great impact on the business performance (Prahalad & Ramaswamy, 2004; Verhoef et al., 2009). Because of customer's power, dissatisfied customers can become a threat to a company (Meyer & Schwager, 2007; Carroll, 2012).

Tourism products consist of a bundle of intangible and immaterial services. It is rather information-intense with a high involvement (Bieger, 2004). In order to study CE in tourism, it is necessary to include all interactions between customers and service providers over all three-stages, during the pre-service, service and post-service period. During the pre-service period, potential travellers make up their mind about where to spend their next holiday by generating information on various channels such as magazines, social media or from recommendations from either close friends and family or from online recommendations (Xiang & Gretzel, 2010; Fotis, Buhalis & Rossides, 2012; Amaro, Duarte & Henriques, 2016; Miguens, Baggio & Costa, 2008). Once in the destination, tourists seek for information on activities and consume touristic offers. (Gretzel, 2009; Cox, Bourgess, Sellitta & Buultjens, 2009). After the journey, tourists often share

their experiences with friends and family or nowadays also on virtual platforms and thus generate electronic world-of-mouth (eWOM). This again serves as the basis for inspiring new potential tourists during their pre-service period (Fotis, Buhalis & Rossides, 2012; Hudson, Roth, Madden & Huddson, 2015; Landvogt, 2017). Therefore, in order to measure customer experience in tourism, both on- and offline services need to be included (Sharma & Patterson, 2000; Jamal & Naser, 2002; Klaus et al., 2013).

Already Pine & Gilmore (1999) stated that creating memorable experiences is the outcome that service providers are aiming for and what they are competing for – also in tourism. The tourism product with its specific characteristics lives from such memorable experiences. However, they are no longer an optional added value, but a must-have of any tourism offer (Larsen, 2007; Cooper & Hall, 2008; Hwang & Seo, 2016). "Consumers today do not ask themselves as often 'What do I want to have that I don't have already?'; they are asking instead 'What do I want to experience that I have not experienced yet?'" (Clavé, 2006: 164) This is due to societal changes, which have led to much more power of consumers. Tourists are nowadays multi-option, quality-conscious, much more experienced in travelling, independent and looking for emotional experiences (Brunner-Sperdin, 2008; Grissemann & Stokburger-Sauer, 2012; Walls, Okumus, Wang, & Joon-Wuk Kwun, 2011; Minkiewicz, Evans, & Bridson, 2014; Mathis et al., 2016). These experiences include multiple interactions between tourists and service providers (Uriely, 2005; Lashley, 2008) and have a processual character (Carlson, 1997). "Experiences don't have a beginning or an ending. They are a continuum." (Carbone 2004: 63) Experiences are co-created by the service provider and the customer in order to create these memorable experiences (Mathis, Kim, Uysal, Sirgy, & Prebenson, 2016). Experience co-creation is conceived as the new paradigm in marketing as it provides the basis for understanding how experiences are being created (Buhalis & Foerste, 2015; Kandampully, Zhang & Bilgihan, 2015; Torres, 2016). They are often visualized in customer journey maps including the pre-service (perceiving a need, information seeking, booking, travel planning), the service period within the holiday destination and the post-service period (travel back home, online evaluation, eWom) (Stickdorn, Frischhut, & Schmid, 2014). Hence, proposing successful experiences has become a key factor for service providers on destination-level. The main aim of tourism providers is to allow and support the framework and setting for such experiences, which are, however, subjective and individually different (Hirschman & Holbrook, 1982; Brunner-Sperdin, 2008). The tourist him- or herself constitutes his or her own holiday experience (Uriely, 2005).

Various stakeholders within a destination deliver the touristic product as a bundle of services. Buhalis (2000) thus calls DMOs as amalgams of stakeholders with a big variety of touristic offers. In Austrian – similar to many other worldwide destinations, destination management organisations (DMO) function on the basis of a community-based model (Bieger, 2004) and thus differ from corporately managed destinations in Northern America (Flagestad & Hope, 2001). These DMOs are usually collectively financed as they emerge from local communities and embedded stakeholders. Another difference of this destination management model is that DMOS show a strong presence of small- and medium-sized enterprises as well as family-run businesses (Cooper, Fletcher, Fyall, Gilbert, & Wanhill 2005; Dregde, 2006). The tourism industry is thus fragmented as SMEs lack industry leadership in comparison to large tourism companies like e.g. in the airline business. DMOs and governments have to step in and take over a coordination role at both national and sub-national (Scott, Cooper, & Baggio, 2008). DMOs nowadays compete on an international level (Buhalis, 2000; Dwyer, Edwards, Mistilis, Roman, & Scott, 2009) and tourism destination competitiveness has seen high interest in academic literature (Claver-Cortes, Molina-Azorin, & Pereira-Moliner, 2007; Dwyer, Edwards, Mistilis, Roman, & Scott, 2009; Ritchie & Crouch, 2003, 2011). "Destination marketing has long been structured and had its strategies influenced by tradition, i.e. the co-located perspective of distribution processes and passive customers." (Lemmetyinen, 2010, p. 131) and thus the consumer has been not considered sufficiently. King (2002) thus claims that the customer has to become an active partner in the marketing process of destination marketers. Also Beritelli, Bieger & Laesser (2014) claim for a new paradigm of destinations where the basic scope is to create added value for both the visitors and the suppliers other than just "serving" them.

On the regional level, thus Austrian DMOs act as the leading organization to coordinate those tourism providers in order to manage the tourism products (Flagestad & Hope, 2001; Strobl & Peters, 2013). The main tasks of DMOs include the planning and development of the destination, the coordination and improvement of all touristic offers and its infrastructure, as well as both strategic and operative marketing of the destination, network building and representation of interest among all stakeholders. The latter includes destination branding, positioning, promotion and distribution of the touristic product, provision of information as well as the coordination of marketing activities (Bieger, 2004; Munar, 2012). The DMO thus plays a crucial role within the coordination of all single tourism providers at a supra-regional level (Bornhorst, Ritchie & Sheehan, 2010; Volgger & Pechlaner, 2014).

Mobile Ethnography as an Innovative Research Method

Many authors argue that for understanding the experience from the customers' point of view, a qualitative approach is necessary (Johns & Gyimothy, 2002; Browning et al., 2009; Jennings, 2010; Palmer, 2010;

Trischler & Zehrer, 2012) as customer experience cannot be measured with surveys and pre-defined categories. A more open approach is needed to analyse what customers experience (Stickdorn, 2009; Bosio, Rainer, & Stickdorn, 2017).

Ethnography as a discipline of anthropology focuses on understanding people's behaviour and their relationships by observing them and using various techniques like photo/video observation, observation protocols, ethnographic interviews, reflexive photography, cultural probes or storytelling. One major disadvantage of classical ethnographic research is however the fact that it is very time-consuming and cost-intensive, as researchers have to put much effort into observations and need to be on the spot. This is especially the case in tourism because of the geographical scope and temporal extension of tourist journeys (Agar, 1996; Buscher & Urry, 2009; Segelström, Raijmakers & Holmlid, 2009; Stickdorn, Frischhut & Schmid, 2014). The rise of digital technology has become a game changer in research. Mobile research ranges from participants taking videos of themselves, calling or texting them to ask them questions, to using mobile devices for geo-location. All of these methods have the common aim to gain richer insights about attitudes and behaviour (Baker et al., 2017).

Mobile ethnography has first been addressed as ethnography "on the move" (Marcus, 1995; Newman, 1998) and only later on as a term for ethnography with a mobile device (Axup & Viller, 2005). Stickdorn, Frischhut & Schmid (2014: 495) refer to mobile ethnography as "geographically independent ethnographic research for a specific subject matter through the utilisation of mobile devices." Mobile ethnography as an innovative form of classical ethnography transforms the tourist into a researcher. It applies the practice of self-tracking where the tourist can use his own mobile device as a research tool in order to track his journey and document positive as well as negative touchpoints (Hein, O'Donohoe and Ryan, 2011; Rettberg, 2014; Lupton, 2016). The sum of experiences will then make up the customer journey.

Authors however still disagree whether the researcher himself should be present during data collection. While Marcus (1995), Watts and Urry (2008) as well as Buscher and Urry (2009) see mobile ethnography as multi-sited and therefore as a walk along ethnographic research, Stickdorn and Zehrer (2009), Segelström and Holmlid (2011) and Stickdorn and Frischhut (2009) follow the concept of self- or auto-ethnography (Coffey, 1999; Alvesson, 2003; Chang, 2008) and claim that the tourist him- or herself collects data without the presence of a researcher.

Koschel (2018) states, that the main advantages of mobile ethnography include research in real-time (Stickdorn, Frischhut, & Schmid, 2014; Poynter, Williams & York, 2014), with authentic, spontaneous data collection through video, photo, audio and text, longer spans of field work, a bigger number of cases (Stickdorn & Frischhut, 2012; SIS International Research, 2015), simultaneous and multi-cultural observations throughout various countries or regions, no bias through the researcher present, an easy capture of emotions, moods and sensations, of everyday life, less cost and time-intensity as well as a possibility or multi-perspectivity. Furthermore it minimizes recall bias (Schwarz, 2007) as it enables researchers to capture both cognitive as well as emotional factors at the same time (Urry, 2007). Other researchers further argue that this method minimizes the researcher's influence (Hulkko, Mattelmäki, Virtanen & Keinonen, 2004) and supports investigator, method and data triangulation (Bosio, Rainer, & Stickdorn, 2017). Another advantage of the use of mobile ethnography is the fact that the tourist him- or herself decides what is important for him or her and that data is recorded in real-time and can even be geo-referenced (Mager & Gais 2009; Stickdorn & Schneider, 2010; Stickdorn, Frischhut & Schmid, 2014). Thus mobile ethnography helps fostering innovation in self-centred and participatory design (Buscher & Urry, 2009; Segelström & Holmlid, 2011; Stickdorn & Frischhut, 2012). It allows to have more "participant controlled social interaction during the research process" (Boivin & Cohen Miller, 2018: 585) and "to gain a deeper understanding of how people experience, perceive, create, and navigate the social world" (Hallet & Barber, 2014: 307).

The challenge of ethnographic research is the balancing act between researchers immersing themselves (Anders, Yaden, Da Silva Iddings, Katz, & Rogers, 2016; Bell & Phal, 2017) and assessing and interpreting what they observe (Heath & Street 2008). Therefore there has been a growing interest in ethnography as co-participatory research and giving voice to participants (Mitchell & De Lange, 2011; Hart el al., 2013; Banks et al., 2014; Pauwels, 2015). Boivin & Cohen Miller (2018) follow a new research paradigm and apply a co-participatory research method using mobile devices. They "allow participants to construct their lived experience from their point of view in providing their choice of data, instead of confining them to the perspective of the researcher, to provide more inclusivity and giving more authentic voice to the participants." (Boivin & Cohen Miller 2018: 584) This leads to a more balanced position of interviewers and interviewees, as participants are not just data objects, but giving voice and the possibility to define what the research is about (Chimirri, 2015). Mobile ethnography follows this co-participatory approach by giving the participant the power to decide what he captures, when and where.

Even though some customers might be intrinsically motivated to participate in mobile ethnography projects (Stickdorn & Frischhut, 2012), researchers highly depend on the willingness of the participants to collect and share their data and the recruitment of participants can thus become a challenge. Authors therefore argue that offering incentives for participants is crucial (Bonner & Sprinkle, 2002; Rainer, 2016). Moreover a good and profound

briefing of participants is necessary in order to obtain quality data (Bosio, Rainer, & Stickdorn, 2017). Even though becoming less important, for some target groups technology readiness might still be an issue (Parasuraman, 2000).

Mobile ethnography has been applied in recent research for various service industries such as the health industry (Rodgers et al., 2005; Connelly et al., 2006; Logan et al., 2007), retail (Kourouthanassis, Giaglis, & Vrechopoulos, 2007), tourism (Stickdorn & Zehrer, 2010; Frischhut, Stickdorn, & Zehrer, 2012; Muskat et al., 2013; Bosio, Rainer, & Stickdorn, 2017), mobility (Spinney, 2011) and education (Beddall-Hill, Jabbar, & Al Shehri, 2011). "Mobile ethnography research in combination with smartphone use and other internet-based technology is becoming more prevalent, driven by the increased usage of mobile devices and especially smart phones by consumers." (Muskat et al., 2013: 2)

Methodology

Mobile Ethnography is a rather young discipline with a clear qualitative focus. To date only few mobile research tools are available (Stickdorn & Schneider, 2010; Segelström & Holmlid, 2012; Stickdorn & Frischhut, 2012). ExperienceFellow is one of them, which offers a free mobile app for customers (in this case tourists) and a web-based software tool for researchers. The tool has already been applied to various studies in order to research customer experience in tourism destinations (Stickdorn & Frischhut, 2012; Stickdorn, Frischhut, & Schmid, 2014). It allows researchers to invite tourists to become "holiday testers" and document their personal customer journey. This is done by adding touchpoints, naming, evaluating and describing them by means of pictures, videos or text. Furthermore for each touchpoint a time stamp and GPS-location is recorded. Once the data is uploaded from the app to the back-end system, researchers can start analysing the data by sorting touchpoints, tagging them and applying various filter options. Moreover all touchpoints can be viewed in a map to identify hotspots within the destination and their performance (ExperienceFellow, 2016a).

The Upper Austria Tourism Board is the first of 9 Austrian regional DMOs on provincial basis to install the position of a "Service Designer" within the organization. As part of their strategic work the DMO launched two research projects, which made use of mobile ethnography. In the first case they defined and evaluated the winter sports product in the Dachstein-Salzkammergut region. In the second case they were looking for improving the touristic experience on the Danube cycling path. The research design followed the approach of mobile ethnography and made use of the ExperienceFellow mobile app (ExperienceFellow, 2016b). In the case of Dachstein-Salzkammergut, participants were recruited by the local tourist board or directly in the hotels and received a free cable car ticket as an incentive. The project was rolled out from March to April 2015. 20 guests had signed up for the project, 5 of which did however not submit any data. In some cases two people used the app together to document the couple's experience, they were, however, only counted once. For the Danube cycle path participants were recruited by a travel agency and got the rental bike offered for free plus a tablet for documenting their journey. Out of 17 people that were contacted by the travel agency by email, 2 refused to participate in the project and further 5 guests had signed up at the first stage, but did not submit any data. As various authors (Arnould & Wallendorf, 1994; Trischler & Zehrer, 2012) suggest the use of multiple methods for data collection in ethnographic research, the authors of the present paper decided to combine mobile ethnography with a group discussion in the second case. During their one-week holiday, the participants of the Danube cycle path were invited for dinner to further discuss their holiday experience and details of their touchpoint documentation with ExperienceFellow.

Results

Dachstein-Salzkammergut

The 15 participants collected a total of 174 touchpoints with a minimum of 1 and a maximum of 42 touchpoints per participant. This accounts for an average of 12 touchpoints per participant. In comparison to similar projects using the same tool, this is a rather good result while at the same time delivering high-quality data. For the holiday evaluation with the ExperienceFellow tool mainly the text and picture functions were used. Only one participant added a video. The overall average emotion value was 1.0 on a scale ranging from -2 to +2. Average emotional values of participants ranged from -0.5 as the worst and 2.0 as the best average value. The vast majority of touchpoints collected were rated very positive (103 out of 174 TP), 33 positive, 17 neutral, 12 negative and 8 very negative. Male evaluations were slightly more negative with an average of +0,83 in comparison to evaluations of female participants with +1,3. Also the average total evaluation of younger participants aged between 17 and 35 years old was slightly more positive (+1.03) than that of older participants (+0.9).

As participants could choose by themselves, what to them was important and therefore worth mentioning, it is interesting to see which elements of the service chain were evaluated. By far the most evaluations were associated with gastronomy (41), lifts & ski slopes (23), weather (18), accommodation (14), attractions, great views (13 each), thermal bath & swimming pools (10), snowshoe- & winter hiking (9), self-catering (7), signage, relaxation, shopping, rentals and entertainment (4 each). In terms of locations

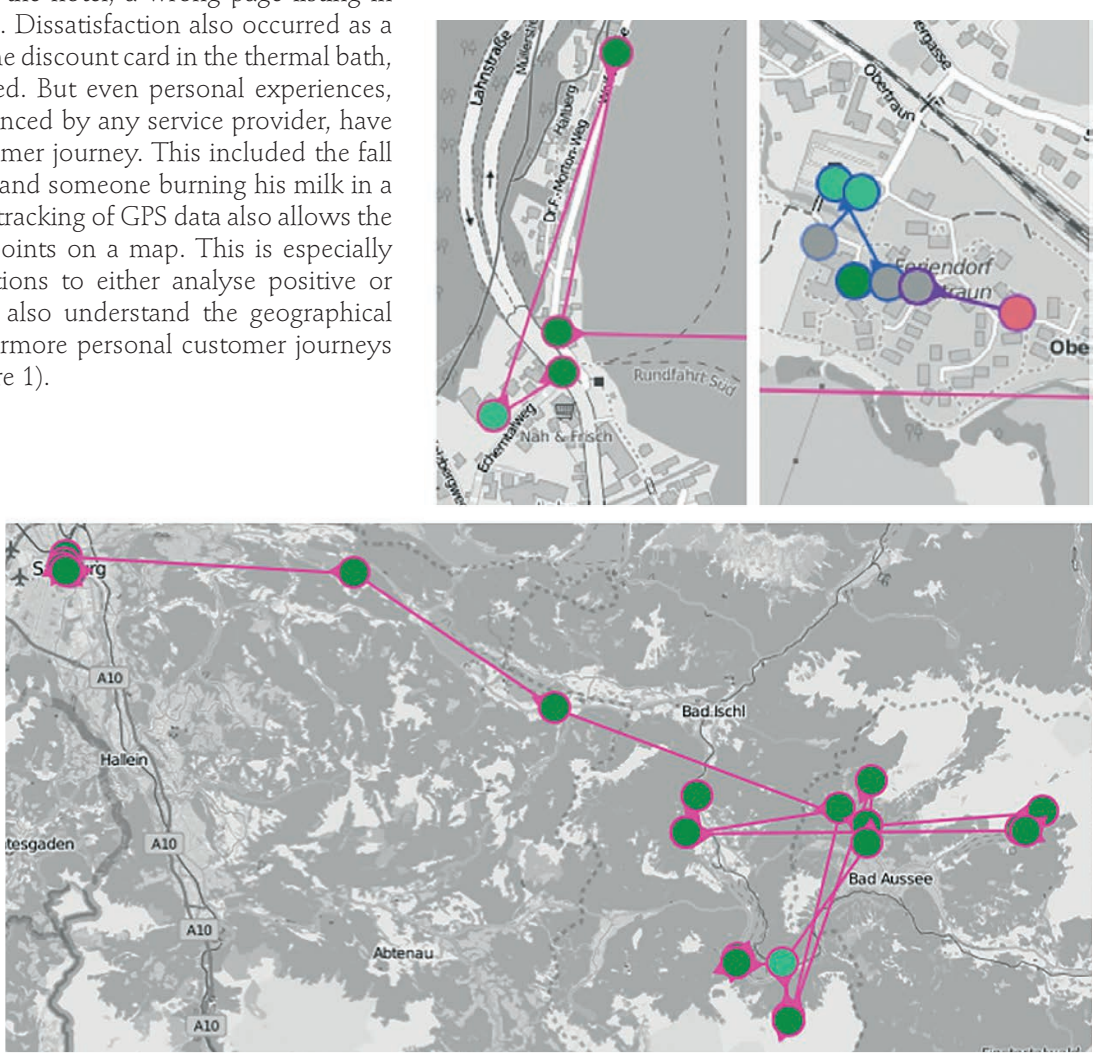
which had been visited outside the area, Salzburg was rated the most attractive one (6), followed by Hallstatt (4), Wolfgangsee and Fuschlsee (1 each). Other evaluations concerned transportation, the fact that there were a lot of Asian guests (in Hallstatt and Salzburg), opening hours (3 each), cross-country skiing, tobogganing, advertising material, churches and local architecture (2 each). Single evaluations were made for mountain rescue, a petrol station, toilets, spotted animals, the tourist information, parking, smoking, medical services, a playground, and the ExperienceFellow tool itself. When looking at the various service providers within the destination, most evaluations concerned gastronomy followed by the cable car company, the accommodation sector and attractions. Nevertheless, it becomes obvious that other services within the destination like supermarkets, shopping facilities, medical services, petrol stations or even churches are also part of the touristic customer journey.

Negative evaluations mainly concerned the cable car: queues at lifts or gondolas (3), crowded or bad condition of slopes and dirty toilets (2 each). Single remarks were made for smoking in the public area of hotels, bad weather, opening hours of shops and churches, an overprized cappuccino, the organization of the bus transport from the ski station back to the hotel, a wrong page listing in a destination catalogue. Dissatisfaction also occurred as a guest expected to use the discount card in the thermal bath, which was not accepted. But even personal experiences, which cannot be influenced by any service provider, have an impact on the customer journey. This included the fall of a guest while skiing and someone burning his milk in a guest appartment. The tracking of GPS data also allows the visualisation of touchpoints on a map. This is especially interesting for destinations to either analyse positive or negative hotspots and also understand the geographical range of guests. Furthermore personal customer journeys can be visualized (Figure 1).

Danube cycle path

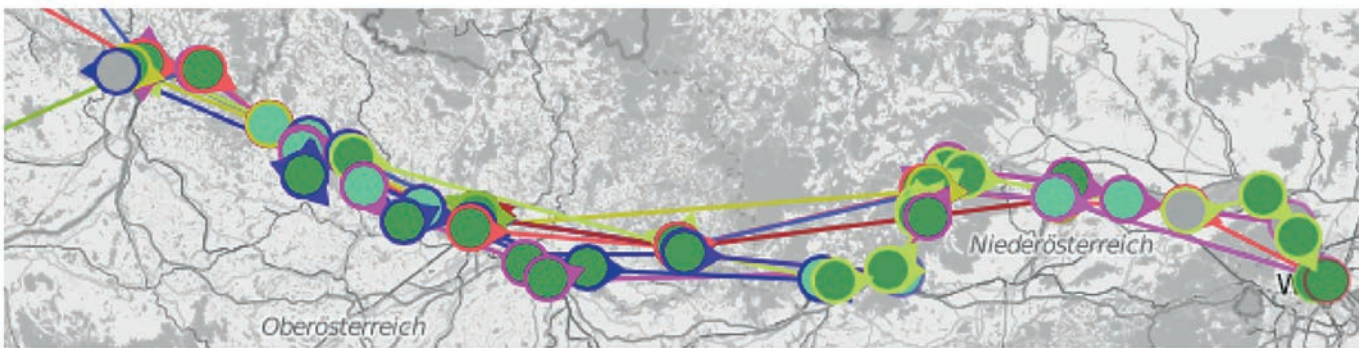
The 10 participants collected a total of 132 touchpoints. Again some participants were couples and thus documented their journey together. Participants were equal in sex (5 male and 5 female) and were aged from 45 to 67 years old. Participants submitted a minimum of 5 up to a maximum of 25 touchpoints. This means that on average every participant uploaded 13 touchpoints. Similar to the Dachstein-Salzkammergut project, participants mainly added text and pictures as media. There was, however, a difference between the amounts of text added. Participants of the Danube cycle path added much more text at a much higher level of detail. This would even allow to give feedback on single accommodation providers. Therefore also the number of tags used per touchpoint was much bigger. At the same time, this makes it harder to analyse

Figure 1 Positive hotspot Hallstatt, negative hotspot Obertraun, longest customer journey (Data visualisation from ExperienceFellow tool, 2016)



Source:
Prepared by the author

Figure 2 Visualization of all touchpoints along the Danube cycle path (Data visualisation from ExperienceFellow tool, 2016)



Source: Prepared by the author

data as many aspects are combined in one touchpoint. The overall average emotion value was 1.5 (scale -2 to +2). Average emotional values of participants ranged from +1.1 to +2.0. Hardly any gender difference could be noted. The average total evaluation of male participants was slightly more positive (+1.575) than the one of female participants (+1.5). The majority of touchpoints were rated very positive (82 out of 132 touchpoints), 34 positive and only 10 neutral, 4 negative and 2 very negative.

As for categories, most evaluations concerned accommodation, sights on the Danube cycle path (33 each), gastronomy (32), the biking route itself (22), landscape (16), hotel staff (15), breakfast in hotels (13), transportation of bicycles (11), travel documents which guests received beforehand, and the weather (10 each). Other evaluations targeted signage (7), tour description, the arrival, WLan in hotels, swimming possibilities (6 each), hotel bathrooms, hotel location, distribution of bikes, great views (5 each), check-in at the hotel, luggage service and the garden exhibition in Tulln (3 each). The most mentioned locations were Passau (11), Linz (10), Wien, Grein, Niederranna (7 each), Melk (6) and Enns (5). No negative hotspots could be identified. The geographical visualisation showed that some participants even documented their pre-service period (booking decision & process).

According to service providers within the destination, again evaluation mostly concerned accommodation and gastronomy. According to the touristic product many comments were related to the biking route and sights on the Danube cycle path (corresponding to the cable car company in the Dachstein-Salzkammergut project) as well as to the tourist offices which are responsible for signage and maintenance of the cycle path, travel agencies, but also attraction manage-ment. Negative evaluations resulted from the biking track itself (too steep), missing signage at a crossing, insufficient directions to a hotel (as it is known amongst the locals under a different name), problems with WLan in hotels, problems with the speedometer on the rental bike (as the size of the tyres was not correct and therefore distances were wrongly calcu-lated) and one accommodation which received bad evaluation from one guest.

The main findings from the two projects were rather diverse for the Tourism board. In the first case, it was interesting to track the radius within which guests move around. This implies that the tourism board needs to work on a supra-regional basis in order to offer a holistic tourism experience. Furthermore it turned out that food and culinary art was a major element of the touristic experience in the Dachstein-Salzkammergut region during the winter season. In the case of the Danube cycle path it was remarkable how the use of ExperienceFellow allowed the project team to become part of the participants' world of images. They themselves claimed that their holiday was experienced a lot more intensely through the use of this app and the documentation of their journey. In addition, the Upper Austrian Tourism Board received important advice on necessary improvement of the cycle path signage (ExperienceFellow, 2016b).

Discussion and limitations

Mobile ethnography has proved to have various advantages in contrast to classical survey studies in tourism. Mobile devices have become game changers in research. Participants have collected data and become researcher themselves while their mobile device has functioned as the research tool. This **co-participatory research** provides more equity between researcher and participant. "(...) research shifts from a static researcher-controlled data collection perspective to co-constructed research practice. Consequently, utilizing mobile digital technology appears to be a strategy to overcome this predicament." (Boivin & Cohen Miller, 2018: 585) Using digital and mobile technologies thus has proved to also

affect the participants' roles. They reported that they had enjoyed being a holiday tester and stated that their holiday experience had become even more intense by using ExperienceFellow. Rainer (2016) also stated that the participation in mobile ethnography projects had a positive influence on the participants' experience quality.

Participants are thus not only becoming researchers giving detailed and precise feedback, but also **co-creators of the touristic product** giving ideas for improvement on the product development of destination management organizations and the service providers. Already previous studies have shown that actively involving tourists into the co-creation of experiences leads to higher tourists' satisfaction, level of expenditure and happiness (Grissemann & Stokburger-Sauer, 2012; Buonincontri et al., 2017). As stated by Buonincontri et al. (2017: 274) "tourism service providers should improve their interaction with real and potential tourists along all the experiential process before, during, and after their stay at destination by offering different direct communication channels and involving tourists in the organization and development of their trips." Mobile ethnography allows this interaction between service providers in the destination and guests in order to create more valuable and memorable experiences. As a result of these projects, the Upper Austria tourism board adapted and improved various aspects of their touristic service together with other service providers. The Danube cycle path has already existed for more than 30 years. However, this was the first project that included a customer-centric approach. A personalized handbook has been developed for each guest in order to include detailed information about the place of picking up the bike, the selected cycle path, booked hotels, average time of each section of the cycle path, etc. An auxiliary app provides a detailed map of the chosen path and more details on sights, supermarkets, repair stations, etc.

Mobile ethnography allows not only **real-time, but also in-situ collection** of data through participants making use of **geo-referenced data**. This is especially important for tourism research as guests usually move around within a destination. "The integrated use of geo-referenced data is invaluable for studies on mobility, and the unique ability of mobile devices to stay 'in-world' with the participants is the key attraction of using this technology for research." (Beddall-Hill, Jabbar, & Al Shehri, 2011: 86) One of the aims of the Dachstein Salzkammergut project was to better understand the geographical radius of guests during their holiday. As a result, the tourism board has understood that guests frequently move out of the region and that the tourism board has to cooperate more intensely with neighbouring destinations as guests perceive "their" destination not necessarily in accordance with political boarders. This result corresponds with Beritelli, Bieger & Laesser (2014) who ask for deframing the construct of the destination and apply variable geometry in order to solve this problem. This mean instead of considering just one area, DMOs have to be based on multiple different, partly overlapping spaces. One disadvantage of the app is however, that the GPS function does not work within buildings. Furthermore GPS data is recorded at the time a touchpoint is created. In case a participant adds touchpoints at the end of the day in his hotel, the location of the hotel will be captured instead of the spot where the experience actually took place.

Mobile ethnography has proved to be applicable mainly for **longer stays** within a destination like in the present study. Especially participants of the Danube cycle path collected a vast number of very detailed touchpoints during their own-week holiday. The method has proven to be less valuable for shorter stays or events (Segelström & Holmlid, 2012).

Participant recruitment and motivation has proved to be a challenge as also experienced in other research projects (Stickdorn & Frischhut, 2012; Stickdorn, Frischhut, & Schmid, 2014; Bosio, Rainer, & Stickdorn, 2017; Koschel, 2018). Even though it is not the aim of a qualitative study to attract a vast number of participants, these projects have shown that it is crucial to get motivated participants, which are willing to take the time to document their experience throughout their holiday. While in former research projects participants needed to have their own smart phone, in the case of the Danube cycle path participants were provided with a new tablet. This might have motivated participants even more to collect high quality data. Incentives have proofed to be crucial for participants' willingness to take part in the project and to foster motivation (Stickdorn & Frischhut, 2012; ExperienceFellow, 2016a; Rainer, 2017). In the Dachstein Salzkammergut project the tourism board had defined and **created personas** in an initial project phase. However it proved to be difficult to get hold of these people in reality as the local tourism board as well as hotel owners, who were very busy during high season, carried out the recruitment. The drop-out rate was rather low with 5 participants of each project signing up for the project, but not collecting any data.

Many authors (Palmer & Bejou, 1995; Buhalis & Cooper, 1998; Weaver & Oppermann, 2000; Berry et al., 2002; Payne, 2008; Saffer, 2010; Teixeira et al., 2012) claim that following a **holistic approach** in capturing customer experience is indispensible. The tool would in general enable the collection of data throughout all three service periods (Klaus & Maklan, 2011). This depends, however mainly on the time of participant recruitment for the pre-service and on communication for the post-service period. The projects at hand do not include any data for the post-service period. Participants concluded their data collection and uploaded the data once the holiday was finished. A more detailed briefing and communication would be necessary in order to include also the post-service period. The app therefore has now included the function to send out push notifications to participants in order to remind them to collect data, upload it or also include touchpoints once they have returned home. The Danube cycle path

project also includes touchpoints for the pre-service period as participants were recruited at a very early stage, but not all participants did make use of this. Maybe also clearer communication and instructions are necessary in order to make participants understand what and when they are expected to evaluate their holiday experience. Furthermore it is important to offer support to participants during the phase of data collection in order to address open questions, which might still arise after the briefing (Koschel, 2018). In order to support participants at any time, a service hotline was installed 7/7 from 9am to 7pm by the tourism board for the Danube cycle path project. This has proved to be helpful for participants being able to pose questions at any time and gain more **high-quality data**.

The data of the Danube cycle path project have turned out to be much more detailed. Even though the Salzkammergut-Dachstein project collected a higher number of total touchpoints (174), single touchpoints of the Danube cycle path included much more text and details on various aspects of services (total of 132 touchpoints). When evaluating a whole destination, managers can learn about the geographical range of guests, understand what is important to them, but often the detail level does not allow feedback for single service providers. In the case of the Danube cycle path, however, this was possible due to the vast amount of detailed feedback given by participants. They used the ExperienceFellow tool as a travel diary giving a lot of information on single services (even mentioning prices and directions how to get there).

Some touchpoints however only include a touchpoint name and evaluation, but no further description. This makes it often difficult to understand what customers want to communicate. Misinterpretations might follow. Therefore it is advisable to combine data collected through mobile ethnography with analog methods like **qualitative interviews, group discussions or even quantitative surveys** and apply a **mixed-method** (Stickdorn & Frischhut, 2012; Bosio, Rainer, & Stickdorn, 2017; Koschel, 2018). This allows going much more into detail, clarifying aspects of touchpoints and might even include a workshop for future product development.

Thus, it should not be underestimated that mobile ethnography as a qualitative approach leads to a high expenditure of time for recruiting and motivating participants as well as analysing the data. Even though the analysis function of the back-end of ExperienceFellow tool helps to find patters within the data, **data analysis remains time-intense**. However, the software is constantly under development in order to improve researchers' possibilities to get the most out of the data. Currently, the ExperienceFellow team has started a project to implement automated data analyses applying algorithms and machine learning. As touchpoints are rather complex and include various aspects of the holiday experience, it would however be necessary to add a more detailed tagging function. This could include the possibility to not only tag the whole touchpoint, but also selected parts of the text or pictures. Furthermore it would be useful to allow tagging on various levels. In addition to tagging aspects of various services at the first stage, it would be desirable to create a second level of tagging in order to mark which service providers are assigned to which touchpoints.

As stated before, smart phone ownership as well as technology readiness might also be limitations of mobile ethnography. Accordning to Poushter (2016), smart phone ownership in Europe is highest amongst millennials (18-34 years old) with 92% compared to only 50% among people older than 35 years. It also varies according to education and income; the higher the education or income level, the higher the probability of smart phone ownership. While in former projects participants tended to be quite young (Stickdorn, Frischhut, & Schmid, 2014; Bosio, Rainer, & Stickdorn, 2017), especially the Danube cycle path attracted mainly older participants (45 to 67 years old). The distribution of tablets however might have helped in this case.

Further limits and challenges of mobile ethnography stated by Koschel (2018) including problems of self-portrayal of participants, the handling of big volumes of data, limited data volume of participants, higher drop-out rates through app downloads and log-ins, the limitation of types of questions (e.g. matrix questions) or special requirements of surveys (structure, length, formulations) These challenges have not been remarked in the present study. Participants did not make many selfies, but rather captured pictures of the service being provided. Due to the limited number of participants, the software could easily handle the volume of data. Neither limited data volume of participants nor the drop-out rate proved to be a hurdle.

In comparison to other use of mobile devices in ethnographic research (Consolvo & Walker, 2003; Mikkelsen & Christensen, 2009; Ravert, Calix, & Sullivan, 2010), the ExperienceFellow app offers a combination of a short participant profile, GPS-tracking, a time stamp, the evaluation of touchpoint capturing videos and pictures from the customer's perspective as well as a short quantitative survey. As theory clearly states (Meyer & Schwager, 2007), customers experience the same touristic product differently (Bosio, Rainer, & Stickdorn, 2017). The mobile app combined with the web-based software enables researchers to gain insight through the whole customer experience of a large number of participants across both offline and online channels and thus, covering the whole complex service bundles in tourism (Pine & Gilmore, 1998; Meyer & Schwager, 2007; Konus, Verhoef, & Neslin, 2008; Neslin et al., 2006; van Birgelen, de Jong, & de Ruyter, 2006; Kwortnik & Ross, 2007; Bosio, Rainer, & Stickdorn, 2017). It further allows researchers to "follow the people" (Marcus, 1995) within vaster geographical areas and illustrate heatmaps, which is especially relevant for destination management organizations. Hence, it overcomes the challenge of spatial and temporal di-

mensions in tourism destination (Stickdorn & Zehrer, 2010). Touchpoints captured by participants included both tangible and intangible aspects of the service. Quite some participants have not only included pain point experiences during their trips, but also provided ideas how to improve them and thus have helped tourist destinations to stay competitive and innovative and follow a customer-centric approach in their product development. The present study underlines that destination management organizations have to keep in mind that the touristic experience is composed of both direct and indirect aspects of the service (Verhoef et al., 2009; Klaus & Maklan, 2012). Public services and personal experiences form part of the holiday experience, but are beyond the control of service providers.

Further development of ExperienceFellow would be necessary for a better and quicker analysis of data including multilevel filters or an automated analysis. Additionally, a combination of the app with an online application would be useful, where participants can edit touchpoints at a later stage from a laptop or tablet as typing long texts on the smart phone can become painful. Better GPS tracking within buildings would further help to locate touchpoints also in buildings such as hotels or touristic attractions. Further research in mobile ethnography should focus on the use of various incentives for participant recruitment and motivation, the right participant briefing in order to assure high-quality data and the differences between gender and age groups. Beyond that, it would also be interesting to include sensorial aspects of customer experience.

To conclude, mobile ethnography is a very young discipline and at the moment only single case studies exist in tourism. More case studies in various destinations as well as comparative studies of the use of mobile ethnography in destination management would be necessary in order to analyse whether results are only applicable specifically for single or whether they can be found in various destinations. Furthermore the method has recently also been applied not only for consumer-centric research, but also for investigating employer experience (Bosio, Rainer, & Stickdorn, 2017; ExperienceFellow, 2016c). This could help improve the image of the sector as a potential employer and help overcome the big challenge of skills shortage (OECD, 2018) by improving the employee experience in a similar way as customer journey mapping.

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De la turismofobia a la convivencia turística: el caso de Barcelona. Análisis comparativo con Ámsterdam y Berlín

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Resumen

El fenómeno de la turismofobia y los problemas de convivencia turística son el objeto de estudio del presente artículo, realizado en base a un análisis comparativo de las ciudades de Ámsterdam, Barcelona y Berlín. El objetivo principal es estudiar el concepto turismofobia con la finalidad de conocer las características comunes que provocan la aparición de varios problemas de convivencia turística.
Para el estudio de la extensión del fenómeno se ha llevado a cabo una búsqueda de cifras y artículos divulgativos con el objetivo de definir los problemas provocados por la actividad turística en las tres ciudades. Paralelamente se han realizado entrevistas a 27 personalidades del sector, pertenecientes tanto a la administración pública como a asociaciones vecinales, al mundo académico y al sector privado.
Los resultados llevan a considerar que la concepción del término turismofobia, teniendo en cuenta su significado etimológico, se aleja de las líneas más extendidas. Las tres ciudades presentan distintos problemas de convivencia entre turistas y residentes provocados, principalmente, por la masificación de los espacios públicos y por la mala planificación del entorno, hechos que causan malestar entre la ciudadanía y que ha sido entendido como odio al turismo tanto por diversos actores del sector como por los medios de comunicación.

Palabras clave:
Convivencia Turística, Masificación, Planificación Turística, Sostenibilidad, Turismofobia, Viviendas de Uso Turístico.

Abstract

The phenomenon of tourism phobia and the problems of tourist coexistence are the subject matter, by means of a comparative analysis between the cities of Amsterdam, Barcelona and Berlin. The main objective of the study is to explain the tourism phobia phenomenon with the purpose of knowing the common characteristics that cause the appearance of problems of tourist coexistence.
In order to be able to study this phenomenon, a statistical data search and informative articles analysis have been executed to point out the problems of the tourist activity in this three cities. At the same time, interviews to personalities of the sector have been carried out, and include professionals from the public administration, associations, teachers and members of the private sector.
This research has led us to consider that tourism phobia, etymologically speaking, gets away of the most common thoughts and opinions. All three cities present several problems of coexistence between tourists and residents which appear from the overcrowding of public spaces and as a result of a bad planning of the territory, causing discomfort among citizens. These problems have been understood as the hate to tourism by some industry players and the media.

Key Words:
Local Planning, Overcrowding, Sustainability, Tourist Coexistence, Tourist Housing, Tourism Phobia.

Introducción

Durante los últimos años, el turismo ha dejado de considerarse únicamente una fuente de beneficios económicos y, tanto la ciudadanía como las administraciones, han empezado a identificar varias externalidades negativas. En consecuencia, estos impactos han generado, en algunas destinaciones, manifestaciones contra el turismo, lo que ha provocado la aparición de un nuevo término, la turismofobia.

El interés de la temática que se presenta en este estudio es que se trata de un tema de actualidad en el contexto turístico y que genera controversia entre los diversos agentes implicados en la actividad turística. Por ello, se cree necesaria la realización de una aproximación teórica al concepto de la turismofobia, debido a la incidencia que este tipo de denominación pueda tener en la imagen que los destinos reflejan a sus mercados potenciales.

Objetivos

El objetivo general de esta investigación es comprobar si existen características comunes que podrían explicar el origen de la turismofobia como capa superficial a los problemas de convivencia turística, mediante la comparación de las ciudades de Ámsterdam, Barcelona y Berlín. A partir del propósito principal se desprenden dos objetivos específicos:

1. Identificar los antecedentes e impactos socioculturales surgidos del fenómeno turístico que actúan como precursores de la aparición de la turismofobia, con la finalidad de comprobar en base a un análisis científico y teórico si el término se adecua a la realidad.

2. Realizar una radiografía, mediante tres casos de estudio, de las diversas reacciones ciudadanas frente a los cambios de paradigma económico, social y cultural provocados por la explotación intensiva de la actividad turística así como de las medias públicas y privadas llevadas a cabo para tratar el fenómeno.

La hipótesis de la presente investigación afirma la existencia de rasgos comunes entre los problemas de convivencia turística en las ciudades de Ámsterdam, Barcelona y Berlín; ciudades escogidas de acuerdo con el creciente número de medios de comunicación que identifican paralelismos entre destinos con entornos geográficos y características similares, donde la población ha iniciado movimientos contra los efectos turísticos.

En este contexto, se han seleccionado tres ciudades basadas en un modelo de turismo urbano y que presentan un marcado periodo de renovación urbanística a finales del siglo XX; Ámsterdam, donde a partir del 1970 se vivió un proceso de recuperación urbana mediante la peatonalización del casco antiguo (Van der Werf et al. 2016); Barcelona, en que los Juegos Olímpicos del 1992 representaron la palanca para el reconocimiento internacional de la ciudad y para llevar a cabo importantes proyectos de renovación y acondicionamiento urbano (P . Subirós, 1999) y Berlín, donde el año 1990 se inició la reunificación tanto urbanística como administrativa y política, con la caída del Muro de Berlín (Pozcka, 1997).

Aproximación al concepto de turismofobia

Actualmente destaca la conflictividad en la convivencia entre la población local y los turistas en un mismo tejido urbano. Este hecho se debe al modelo de turismo de masas en que se centran muchas ciudades Europeas y que se contrapone al modelo turístico sostenible.

Se considera turismo de masas al fenómeno social por el cual los turistas viajan al mismo tiempo y a los mismos lugares, canalizando la mayoría de visitas a los mismos destinos, que se ven sobrepasados (Clavé y González, 2007).

Se trata de un modelo poco definido en forma, tiempo y territorio (Clavé y González, 2007). Adicionalmente, la aparición del turismo low cost ha comportado la movilización de un número elevado de turistas de bajo coste, dando lugar a la popularización de los city breaks.

Ávila y Barrado (2005) consideran que los modelos de masas comportan diversos desequilibrios: la estacionalidad, la concentración territorial y la falta de diversificación en la oferta turística.

Según Gabancho (2016), los problemas del exceso de turismo se pueden resumir en un modelo de desarrollo de baja calidad, un mal reparto de la riqueza creada, la apropiación del espacio público, una presión excesiva en el centro de las ciudades y el cambio en el tejido comercial, entre otros. De esta manera, el turismo deviene totalmente antagónico a los tres pilares fundamentales de la sostenibilidad, creando el rechazo de esta actividad por parte de algunos habitantes.

Son diversos los factores que determinan la conflictividad y que influyen en la actitud de los ciudadanos. Estos factores son principalmente económicos, ya que el turismo deviene el motor económico de la región pero al mismo tiempo presenta un carácter tematizador de la ciudad (Carrasco, Lopez-Levi y Selvas, 2015), socioculturales y medioambientales.

Doxey (1975) por otra parte, plantea el Índice de Irritabilidad como herramienta para relacionar la reacción de los residentes frente a los factores comentados, sentando las bases y planteamiento de la conflictividad turística.

El índice se compone de cuatro etapas: la euforia, la apatía, las molestias y el antagonismo. Estas, guardan cierta correlación con las planteadas en el Ciclo de Vida de los Destinos Turísticos (Butler, 1980).

Es en la última fase del Índice de Irritabilidad donde aparecen los primeros síntomas de la turismofobia, entendida como la irritación de los locales debido a los impactos negativos, pudiendo desembocar en la pérdida de prestigio del destino turístico.

Tabla 1 Comparativa entre el Índice de Irritabilidad y el Ciclo de vida de los Destinos Turísticos

Índice de Irritabilidad (Doxey, 1975)	Ciclo de vida de los Destinos Turísticos (Butler, 1980)
1. Euforia	Exploración/Participación
2. Apatía	Desarrollo
3. Molestias	Consolidación
4. Antagonismo	Estancamiento y Declive

Fuente: Elaboración propia (2017)

El término turismofobia surgió en 2008 como rechazo a la masificación turística y a los impactos provocados en el tejido social y económico de las ciudades. Actualmente, el concepto ha sufrido una transformación, promoviendo una patología entre los ciudadanos que, percibiendo en el extranjero un índice de peligro, pasan a ser calificados de personas fóbicas (Delgado, 2008).

Son varios los autores que han intentado explicar el fenómeno de la turismofobia desde distintas perspectivas. Lime y Sankey, citados por Echamendi (2001), explican en fenómeno desde el punto de vista de la capacidad de carga, entendida como el número máximo de visitantes que puede recibir un espacio sin provocar alteraciones significativas en el medio ambiente y sin disminuir la calidad de la experiencia de los visitantes.

Según Gutiérrez (2010), la capacidad de carga se ve superada cuando se da un aumento desmedido del número de turistas y una falta de consideración por el efecto social que este crecimiento provoca.

De acuerdo con Arteaga y Hernández (2017), la desconexión entre la estrategia turística propuesta por la administración y la visión que tienen los ciudadanos de su propia ciudad provocan el fenómeno de la turismofobia, entre otras resistencias sociales.

El estudio de Blanco-Romero et al. (2017), defiende que son la mercantilización y apropiación del espacio urbano multifuncional, como medida para rentabilizar el capital apalancado, los que generan la homogeneización urbana, la masificación turística y las tensiones sociales. Además, la falta de una normativa clara para la ordenación turística ha permitido que se impliquen en el tejido turístico, las vías públicas y viviendas residenciales.

Por otro lado, la búsqueda del beneficio a corto plazo contribuye en perder de vista las consecuencias generadas sobre las dinámicas de la ciudad, desplazando a los vecinos y generando acciones espontáneas de rechazo.

Desde el punto de vista antropológico, planteado por Delgado (2008), algunos segmentos sociales han encontrado en el visitante el blanco cómodo al que atribuir todos los males de la vida urbana, simplificando la relación social que se establece entre ambos actores cuando comparten un mismo espacio. Sin embargo, dicho autor defiende que el problema no es que haya turistas, sino que se gestione la ciudad como negocio y se permita a agentes económicos del sector turístico monitorizar a los recién llegados, implicándolos en un proceso de sustitución de las clases populares y de depredación territorial.

Para otros autores, el concepto turismofobia se ha usado de manera desafortunada y poco adecuada, confundiendo el malestar social por el exceso de turismo, planteado como recurso económico principal para sostener una economía urbana, por el rechazo a los turistas como individuos.

En este contexto de amplio alcance y generalización del término turismofobia junto a la falta de homogeneidad respecto a su correcta definición, surge la necesidad de buscar nuevos conceptos menos inculpatorios. Milano (2017) propone el término *overtourism*, concepto que enfoca la problemática a partir de la situación vivida en varios destinos afectados por la sobrepoblación turística.

Metodología

La investigación que se ha realizado es de carácter exploratorio, ya que ante la inexistencia de una conceptualización consensuada del término turismofobia, se pretende obtener una visión general del fenómeno turismofóbico en las ciudades de Ámsterdam, Barcelona y Berlín. El artículo presenta una orientación descriptiva con el fin de identificar las características comunes y los problemas que la actividad genera en la gestión turística de estas ciudades.

Con el fin de alcanzar los objetivos establecidos se ha seguido una metodología cualitativa, estructurada en el uso de varias técnicas según los distintos apartados de la investigación. Por un lado, se ha realizado una revisión bibliográfica que ha permitido analizar el contexto actual, acompañada de una búsqueda sistemática de noticias que permitan analizar el estado de las tres ciudades objeto de estudio.

Tabla 2 Tabla metodológica de los indicadores de sostenibilidad turística escogidos como instrumento de comparación

Indicadores	Cálculo	Umbrales McKinsey	
Presión turística	Crecimiento anual del número de llegadas	Quintil superior (mayor riesgo)	> 7,7 %
		Segundo quintil	6,6 – 7,7 %
		Tercer quintil	4,0 – 6,1 %
		Cuarto quintil	2,0 – 3,9 %
		Quinto quintil (menor riesgo)	<2,0 %
Intensidad de uso	Número de visitantes por quilómetro cuadrado	Quintil superior (mayor riesgo)	> 930.000
		Segundo quintil	475.001 – 930.000
		Tercer quintil	200.001 – 475.000
		Cuarto quintil	75.000 – 200.000
		Quinto quintil (menor riesgo)	< 75.000
Impacto social	Número de visitantes por residentes	Quintil superior (mayor riesgo)	> 5,3
		Segundo quintil	2,8 – 5,3
		Tercer quintil	1,8 – 2,7
		Cuarto quintil	1,0 – 1,7
		Quinto quintil (menor riesgo)	< 1,0
Contribución del turismo en la economía local	Porcentaje de creación de ocupación y aportación al PIB de la ciudad	Quintil superior (mayor riesgo)	> 8,5 %
		Segundo quintil	6,1 – 8,5 %
		Tercer quintil	4,5 – 6,0 %
		Cuarto quintil	3,2 – 4,4 %
		Quinto quintil (menor riesgo)	< 3,2 %

Fuente: Elaboración propia a partir de los indicadores de la OMT, (1997) y el estudio de Mc Kinsey&Company (2017)

Paralelamente, se ha llevado a cabo la creación de una ficha de análisis (Tabla 2) basada en los indicadores clave para el turismo sostenible, propuestos por la Organización Mundial del Turismo en el 1997 y que responden a los principales problemas de masificación turística en distintos destinos urbanos.

Adicionalmente, se han comparado estos indicadores con los umbrales de riesgo de masificación presentados en el estudio de McKinsey&Company (2017) con el objetivo de establecer el impacto territorial, económico y social del turismo.

Para abordar la temática de estudio desde otra perspectiva se han realizado 27 entrevistas a diferentes actores del sector turístico. Del total, ocho se han realizado a expertos del mundo académico nacional e internacional en ámbitos de turismo, geografía y antropología; ocho a miembros de la administración pública; siete a miembros del sector privado, de los cuales tres pertenecen al sector hotelero y, finalmente cuatro entrevistas a asociaciones de vecinos.

Respecto los criterios de elección de los entrevistados, se ha seguido un método no probabilístico según la apreciación de los autores, queriendo garantizar la representación y participación de todos los actores implicados y con relevancia en el proceso de desarrollo turístico. Para ello, se ha usado como guía la red de participantes en el Consejo de Turismo y Ciudad de Barcelona, órgano de participación de la ciudad.

En cuanto a la muestra del estudio, se han seleccionado tres destinos turísticos que se encuentran en la fase de antagonismo del Índice de Irritabilidad Turística de Doxey (1975), lo que se comprueba por el surgimiento de diversas manifestaciones y movimientos vecinales contra los efectos del turismo, común en los tres destinos.

Estado de la cuestión

- Ámsterdam, Barcelona y Berlín presentan tres realidades

turísticas complejas, como resultado de varias tipologías de visitantes confluentes y debido al rechazo de ser definidas por un único modelo. Estas tres ciudades han apostado por el turismo como palanca del desarrollo económico y para la revitalización del territorio, y actualmente son modelos referentes en Europa. Aun así, en los últimos años han empezado a aparecer manifestaciones de rechazo y malestar hacia el turismo.

El caso de Barcelona: "Tourists Go Home"

Barcelona se situó en el año 2016 como la duodécima ciudad más visitada del mundo y la tercera en Europa, según el "Global Destination Cities Index by MasterCard" (Choong y Hedrick-Wong, 2016), y se considera una destinación reconocida mundialmente. Como consecuencia del continuo crecimiento de la oferta y la demanda, en el año 2010 aparecieron los primeros síntomas de percepción negativa del turismo por parte de la ciudadanía, y por primera vez se incluye en el Plan Estratégico de Turismo de la Ciudad de Barcelona 2010-2015 la necesidad de tratar la gestión integrada del turismo para conseguir un equilibrio entre la realidad turística y ciudadana.

El turismo en Barcelona se conforma por un modelo con un crecimiento acelerado en un espacio reducido y en un breve periodo de tiempo, causando la concentración de turistas en torno a los iconos y atracciones más emblemáticas. Además, Barcelona es una ciudad compacta con una alta densidad y concentración territorial, por lo que el uso intensivo del espacio público por parte de los visitantes dificulta la convivencia de los diferentes usos del suelo.

Actualmente, la popularización de los denominados *city breaks* y los vuelos de bajo coste han facilitado el predominio de los turistas internacionales como principal mercado de procedencia. Por otro lado, la ciudad afronta la desestacionalización de la actividad turística gracias a la diversidad de motivaciones, perfiles turísticos y procedencia de los turistas que visitan la ciudad, gracias a la promoción de la ciudad en distintos ámbitos, en que destacan el turismo de sol y playa, el turismo cultural, el de compras y el de negocios (Ajuntament de Barcelona, 2014).

Debido a este modelo y a la creciente crispación de la ciudadanía por los efectos negativos del turismo, el Ayuntamiento de Barcelona, junto con otros agentes, han planteado mediante el Plan Estratégico de Turismo 2020, la exploración de un modelo que equilibre la convivencia entre residentes y visitantes, preserve su identidad y garantice la sostenibilidad y la continuidad del éxito turístico.

La *Disneyficación* de Ámsterdam

Ámsterdam presenta un centro compacto, en el que se encuentran la mayoría de atractivos y empresas turísticas, por lo que el centro histórico se presenta congestionado y turistizado. En consecuencia, el principal objetivo del actual modelo turístico es descentralizar la llegada de turistas al centro de la ciudad. La principal tipología de turismo es el turismo cultural (Richards, 2001), aunque actualmente se ha detectado una tendencia de diversificación hacia un mayor peso del turismo de negocios y deportivo.

En 2004, el consorcio público-privado encargado del marketing de la ciudad creó la campaña "I Amsterdam", planteada como una marca integral con la finalidad de definir la destinación turística, beneficiar los comercios y tiendas de la ciudad y fortalecer el sentimiento de arraigo de los residentes de la ciudad.

Pese a la voluntad de Ámsterdam de desarrollar su atractivo mediante una buena convivencia entre residentes y visitantes y el fomento de la diversidad cultural, actualmente existe una competencia entre la ciudadanía y los visitantes por el uso del territorio, ya que la campaña se orientó demasiado hacia los intereses de los turistas, dejando de lado el bienestar ciudadano.

El programa estratégico actual, en el que se centra la ciudad se denomina "City in Balance", presenta un enfoque integral que pretende controlar el crecimiento de la ciudad en beneficio de residentes y visitantes y buscar un equilibrio entre el desarrollo y la calidad de vida (Gutiérrez, Hakvoort, Nollen, van Ette, van der Kooij, 2016) al mismo tiempo que se mantiene el atractivo de la ciudad. Aun así, el objetivo principal es centrarse en el retorno social de la actividad económica. Dicho programa enfatiza en el crecimiento sostenible y la prosperidad.

Berlín "Doesn't Love You"

El turismo en Berlín ha sufrido un gran crecimiento desde el 1990, según las estadísticas oficiales de turismo, pero no fue hasta el año 2004 que se implementó el primer *Tourismuskoncept*, con el objetivo de mejorar el turismo.

Con el paso de los años y el aumento del número de turistas, se han ido agregando nuevas tareas y actividades de marketing y promoción con la intención de mejorar la accesibilidad, la distribución del alojamiento, el crecimiento del mercado de congresos y convenciones, entre otros.

El *Tourismuskoncept* 2011+ se desarrolló en el año 2010, y es la estrategia que actualmente está en marcha en la ciudad, ya que se adapta a las condiciones y oportunidades actuales. Dicho plan tiene como principal objetivo expandir la competitividad del sector turístico de Berlín y fortalecer de manera sostenible el factor económico del turismo. Además, el *Tourismuskoncept* 2011+ tiene la voluntad de que Berlín se convierta en la tercera ciudad de viajes de Europa, sobretodo quieren que la capital alemana se convierta en una de las principales ciudades internacionales

en el ámbito de congresos. Por eso se están desarrollando mejoras en cuanto a la accesibilidad e instalaciones. En definitiva, pretenden que el crecimiento turístico sea un factor clave para el desarrollo económico de la ciudad.

Aun así, debido a que el actual modelo turístico de la ciudad está basado en la atracción de turistas han comenzado a aparecer varios conflictos entre turistas y residentes. En ciertos barrios de la ciudad los vecinos están comenzando a sufrir los efectos de la turistización y la gentrificación así como una transformación del tejido comercial.

Resultados de la investigación

En cuanto al impacto general del turismo, las tres ciudades se encuentran en altos índices de intensidad de turistas por metro cuadrado y de presión de visitantes por habitante. Así pues, se afirma que las tres ciudades sufren el problema de la masificación, que se ve acentuada en algunos barrios y puntos que concentran una mayor cantidad de atractivos y servicios turísticos.

También se observa una relación indirecta entre la presión turística y la satisfacción de los habitantes respecto a la actividad turística desarrollada en sus ciudades. En aquellas ciudades donde hay más densidad de turistas por metro cuadrado y por habitante, la percepción sobre el turismo es peor, como es el caso de Ámsterdam.

En cambio, en las ciudades como Berlín, con menos presión turística a causa de una mayor extensión en km² y una mayor dispersión de los atractivos, la percepción del turismo mejora, ya que se generan menos conflictos de convivencia por el uso del territorio.

Comparando los indicadores de impacto turístico estudiados en el marco de referencia creado por McKinsey & Company (2017), se puede comprobar como las tres ciudades se encuentran en una situación de riesgo por masificación turística.

A causa de esta masificación turística y los comportamientos incívicos, las tres ciudades han experimentado varias manifestaciones de malestar, dando lugar a diferentes reacciones críticas hacia el turismo, que han ido aumentando cada año.

En el caso de Barcelona, las principales manifestaciones de malestar han sido protagonizadas por movimientos vecinales. Por ejemplo, las manifestaciones en el barrio de la Barceloneta, rechazando el modelo turístico y las molestias provocadas por las viviendas de uso turístico, la creación de plataformas críticas con la actividad turística, como la Assemblea de Barris per un Turisme Sostenible (ABTS) o la plataforma "Stop Creuers", la cual convoca manifestaciones en contra del impacto medioambiental de los cruceros.

En Ámsterdam el malestar ciudadano se ha manifestado principalmente mediante graffitis y pintadas en varios blo-

Tabla 3 Cuadro comparativo del impacto general del turismo

Indicadores	Ciudades a comparar		
	Barcelona	Ámsterdam	Berlín
Presión turística (crecimiento anual del número de llegadas)	9,19% crecimiento*	5% crecimiento**	3,25% crecimiento *
Intensidad de uso (número de visitantes por quilómetro cuadrado)	246.291 turistas/km²	83.561 turistas/km²	16.816 turistas/km²
Impacto social (número de visitantes por residentes)	15,51 turistas/residentes	21,92 turistas/residentes	4,28 turistas/residentes
Contribución del turismo en la economía local (Porcentaje de creación de ocupación de la ciudad)	4,9 % puestos de trabajo 5,3 % de aportación al PIB	9,8 % puestos de trabajo 4,1 % de aportación al PIB	6,5 % puestos de trabajo 4,0 % de aportación al PIB

* Datos del 2016 ** Datos del 2015
Fuente: Elaboración propia (2017)

ques de edificios y en el centro de la ciudad, que denuncian los apartamentos turísticos ilegales y la masificación turística.

La plataforma "Fair City" organiza varias protestas en contra de la promoción de la ciudad, y algunos activistas ocuparon bloques de apartamentos de Booking como protesta. De la colaboración entre el gobierno y las asociaciones vecinales surgió Fairbnb, una plataforma a favor del turismo sostenible.

Finalmente, en Berlín el sentimiento de rechazo ha dado lugar a distintas reacciones, como la aparición de graffitis y pegatinas en contra del turismo en bares y calles del centro de la ciudad, y se han llevado a cabo manifestaciones con el soporte del partido político laborista alemán. Por otra parte, los activistas han mostrado su malestar mediante carteles que critican la proliferación de los pisos turísticos. Hace falta destacar que Berlín ha sido la única ciudad donde se ha querido defender los derechos de los turistas mediante la creación de asociaciones en defensa de estos en los barrios más conflictivos y en los que no se ha creado grandes asociaciones para combatir el crecimiento turístico.

La investigación ha comprobado como las manifestaciones ciudadanas de malestar se muestran más activas en las ciudades de Barcelona y Berlín. Sin embargo, algunos ciudadanos de las tres ciudades han llevado a cabo actos vandálicos, algunos de carácter violento, protagonizando agresiones puntuales en contra del sector privado, tanto en hoteles como en otros equipamientos turísticos.

Con tal de dar respuesta a las crecientes manifestaciones de malestar y rechazo, anteriormente mencionadas, se observa una tendencia a promocionar las ciudades y paliar los impactos negativos del turismo. En general, las tres ciudades han adoptado medidas de regulación, seguidas de medidas fiscales y, finalmente, medidas de carácter preventivo.

Por lo que hace referencia a los procesos de planificación y de promoción turística, entre los años 2008 y 2015 se ha dado un cambio de posicionamiento y perspectiva de las administraciones, y a partir de este, se han implementado medidas de integración al tejido de la ciudad y planes municipales que en el caso de Barcelona y Ámsterdam tienen la intención de conciliar la relación entre turistas y habitantes, así como la forma en que estos interactúan en el uso del espacio.

No obstante, Berlín se centra en un plan municipal que tiene por objetivo el crecimiento turístico y la promoción de la ciudad como destino de eventos corporativos, y no contempla la sostenibilidad turística como hoja de ruta específico para el crecimiento.

Respecto a las medidas de política turística, en general, las tres ciudades han apostado por la regulación de las viviendas turísticas y para luchar contra la proliferación de los pisos ilegales, que operan sin licencia. En el caso de Barcelona y Berlín, se ha frenado la posibilidad de crear nuevos apartamentos turísticos, mediante la aplicación de una moratoria hotelera.

Mientras que en Berlín, las actuaciones de regulación turística se han centrado en la ilegalización de los apartamentos turísticos, en Barcelona y Ámsterdam se han realizado un gran abanico de actuaciones para combatir diferentes malestares de los habitantes, en un contexto donde los impactos negativos del turismo, se ha hecho muy latentes.

En cuanto a las medidas fiscales, las tres ciudades ha optado por la fiscalización de la actividad turística como herramienta para reinvertir el dinero en promoción y gestión del turismo en la ciudad, a pesar de que se observa ciertas diferencias en su aplicación.

Por lo que respecta a las medidas preventivas, Ámsterdam es la ciudad que más apuesta por la utilización tecnológica para realizar una gestión eficaz, y previa del turismo, mientras que en Barcelona y Berlín, se ha apostado por la creación de una declaración de buenas prácticas en la guía de grupos y un código de conducta para los turistas respectivamente, con la intención de reducir los conflictos turísticos que crea el hecho de haber de compartir un espacio público y acabar con los comportamientos incívicos.

Del análisis de las entrevistas en profundidad realizadas a expertos en turismo y sostenibilidad, se ha podido establecer que la definición de turismofobia gira, en general, entre dos puntos de vista diferentes: la definición del fenómeno asociándolo a las consecuencias negativas de la actividad turística, y a la definición etimológica y propia del término, entendiéndose como fobia al turismo, siendo esta última rechazada por una gran parte de los entrevistados.

En general, los expertos acuerdan que el término turismofobia se ha visto manipulado y tergiversado por los medios de comunicación, tachando los movimientos y reivindicaciones sociales de fóbicas, hasta el punto de relacionarlo con un término tan extremo como la xenofobia.

Los expertos han identificado como consecuencias negativas del sector y por ende causantes principales de la problemática, la congestión de los espacios públicos, los comportamientos incívicos y la subida de precios del alquiler. Sin embargo no existe unanimidad en las respuestas obtenidas, habiendo una gran variedad de respuestas e incluso llegando a plantear que el fenómeno es un ciclo, del que se puede escoger cualquier punto como causa principal. Por ello, los entrevistados afirman que los pisos turísticos, a los que los medios atribuyen como principal causante del rechazo social, en realidad

no lo son. Solo en dos ocasiones entrevistados del sector hotelero y de las asociaciones sociales achacan el problema a los pisos turísticos.

Estos mismos expertos entrevistados han presentado opiniones muy diversas respecto a la posibilidad de crear un sistema de indicadores como herramienta preventiva de los problemas de convivencia. Para muchos de ellos no es un fenómeno que se pueda medir estadísticamente o empíricamente, ya que se trata de un problema real o tangible, sino de manifestaciones de malestar puntuales.

A pesar de que se ha contrastado las respuestas de los entrevistados, no se observa una tendencia clara de un mismo sector hacia la viabilidad y relevancia de este sistema de indicadores. Por lo tanto, las respuestas no dependen de un tipo de colectivo, hecho por el que se podría llegar a pensar que se debe al desconocimiento general de los posibles usos de este tipo de herramienta.

Una vez identificada la limitación en materia preventiva, los entrevistados han identificado como solución existente para la mitigación de la problemática, la sostenibilidad social del turismo. Por consiguiente, siguiendo la opinión de los expertos, se ve la necesidad de adoptar una visión integrada del fenómeno. Por lo tanto, las soluciones deberían de ser de carácter social y no estar estrictamente relacionadas con el turismo, sino que han de afectar a la movilidad, la vivienda, y el uso de espacios, haciendo partícipes y dando voz a todos los agentes implicados en el desarrollo turístico de la destinación.

Gracias a las entrevistas en profundidad de los expertos y el análisis de los diferentes planes estratégicos, se constata, que los diversos problemas de convivencia turística surgidos, en las destinaciones estudiadas, a causa de la masificación. Por un lado, la superpoblación y su incidencia desequilibrada en diferentes puntos de la ciudad generar conflictos entre los residentes y los visitantes, dificultando la coexistencia y la utilización de los espacios e infraestructuras públicas. Aun así, de la masificación se desprenden otros problemas como la acumulación de basura, el aumento del sonido, o la gentrificación de los centros históricos. Adicionalmente, cabe destacar que la gran proliferación de los pisos turísticos a causa de la aparición de plataformas *online* intermediarias agravan los efectos negativos de la actividad. Por otro lado, la masificación se produce como consecuencia de la falta de planificación previa al desarrollo de la actividad turística y la falta de un modelo turístico poco definido por la administración.

Conclusiones

A partir del análisis del fenómeno, se puede afirmar que no existe turismofobia en las ciudades de Ámsterdam, Barcelona y Berlín, sino una serie de problemas de convivencia turística. De hecho, respondiendo al objetivo general de la investigación, se concluye que los problemas de convivencia de las ciudades anteriormente mencionadas comparten su origen, siendo provocados por la masificación y sus efectos.

Del análisis científico y teórico del concepto turismofobia así como de los antecedentes que actúan como sus precursores y, teniendo en cuenta su adecuación a la realidad de las ciudades estudiadas, se plantea la necesidad de sustituir el vocablo por otro término que no culpabilice a la ciudadanía del malestar cotidiano que provoca el turismo.

Es necesario destacar que, de acuerdo con la opinión de los entrevistados se tiene que evitar relacionar el malestar ciudadano con el odio al turismo, ya que la atribución de malestares sociales no recae exclusivamente en la actividad turística. Según dichos expertos, el mal uso del término, fomentado en parte por los medios de comunicación, ha contribuido en la demonización del sector.

De las anteriores reflexiones se desprende el cumplimiento de los objetivos planteados y la validación de la hipótesis, ya que se confirma que los problemas de convivencia entre turistas y residentes de las ciudades de Ámsterdam, Barcelona y Berlín tienen un origen en común, la superpoblación turística. Como se ha podido ver, las tres ciudades presentan un alto grado de irritabilidad respecto al turismo a causa de los impactos de la masificación. Al mismo tiempo, el crecimiento turístico progresivo ha hecho aparecer una fuerte reacción social por parte de algunos sectores de la ciudadanía así como un cambio paulatino y discreto de las medidas municipales respecto a la gestión del turismo.

Se observa que los principales problemas provocados por el turismo afectan a la vida cotidiana y que hay una clara carencia de un modelo turístico definido en las ciudades estudiadas, hecho que dificulta el desarrollo de medidas preventivas. Considerando estos resultados y, de acuerdo con la opinión de los entrevistados, las actuaciones futuras para apaciguar los efectos negativos del turismo deberían de estar activa y mayormente orientadas en gestionar el *overtourism*, término que se entiende como superpoblación turística, y en la aplicación de la sostenibilidad social como base de la actividad turística, persiguiendo la mejora de la repercusión social.

Respecto a la dificultad de prevenir un fenómeno basado en manifestaciones de malestar puntual y sujeto a la psicología de los individuos y, a pesar de la falta de homogeneidad obtenida en las entrevistas, se propone la tabla metodológica utilizada en esta investigación, como un punto de partida para poder detectar los primeros indicios de los problemas de convivencia turística o de sus posibles orígenes.

Para terminar, cabe mencionar que entre los inconvenientes más notables que se han encontrado durante el estudio,

destaca la discrepancia entre los datos de una misma ciudad y periodo realizados por diferentes sectores. Por ese motivo, alguno de los resultados obtenidos de las comparaciones podría variar si se toman como ciertas las cifras presentadas por otras fuentes, en lugar de las citadas en el presente proyecto. De esta dificultad se desprende la necesidad de academizar el turismo y la elaboración de datos estadísticos.

Por último, la investigación destaca y aporta conocimiento alrededor de un concepto que no tiene un gran recorrido histórico en el mundo académico y abre las puertas a nuevas conceptualizaciones sobre el fenómeno. Además, destaca la transversalidad y la búsqueda exhaustiva de estudios, artículos y datos relacionados con los efectos del turismo a las destinaciones.

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Location-Based Social Network Data for Exploring Spatial and Functional Urban Tourists and Residents Consumption Patterns

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Abstract

Urban tourist destinations' increasing popularity has been a catalyst for discussion about the tourist activity geographical circumscription. In this context, Big Data and more specifically location-based social networks (LBSN), appear as a valuable source of information to approach tourist and residents spatial interactions from a renewed perspective.
This paper focuses on approaching similarities and differences between tourists and residents' geographical and functional use of urban economic units. A user classificatory algorithm has been developed and applied on YELP's Dataset for that purpose. A residents and tourists integration ratio has then been calculated and applied by types of businesses categories and their associated spatial distribution of the of 11 metropolitan areas provided in the sample: Champaign (Illinois, US), Charlotte (North Carolina, US), Cleveland (Ohio, US), Edinburgh (Scotland, UK), Las Vegas (Nevada, US), Madison (Wisconsin, US), Montreal (Quebec, CA), Pittsburgh (Pennsylvania, US), Phoenix (Arizona, US), Stuttgart (DE) and Toronto (Ontario, CA). Business category results show strong similarities in tourists and residents functional coincidence in the use of urban spaces and leisure offer, while there is a clear geographical concentration of activity for both user types in all analysed case studies.

Resumen

La creciente popularidad de los destinos urbanos ha actuado como catalizador del debate sobre la delimitación geográfica de la actividad turística. En este contexto, el Big Data, y más específicamente las redes sociales que integran ubicación (LBSN), aparecen como una valiosa fuente de información para aproximarse a la interacción espacial entre turistas y residentes, desde una perspectiva renovada.
Este artículo se centra en la aproximación a las similitudes y diferencias entre el uso geográfico y funcional de las unidades económicas urbanas, por parte de turistas y residentes. Para ello, se ha desarrollado y aplicado un algoritmo de clasificación de usuarios a un conjunto de datos de YELP. Se ha calculado también un ratio de integración entre turistas y residentes urbanos, posteriormente aplicado a los negocios georreferenciados y sus categorías funcionales, en las 11 áreas metropolitanas incluidas en la muestra: Champaign (Illinois, EEUU), Charlotte (Carolina del Norte, EEUU), Cleveland (Ohio, EEUU), Edimburgo (Escocia, GB), Las Vegas (Nevada, EEUU), Madison (Wisconsin, EEUU), Montreal (Quebec, CA), Pittsburg (Pennsylvania, EEUU), Phoenix (Arizona, EEU), Stuttgart (DE) and Toronto (Ontario, CA).
Las categorías funcionales que agrupan los negocios muestran claras similitudes en cuanto a la coincidencia espacial entre turistas y residentes. Además, hay una clara concentra-

Key Words:
Urban Tourism, Big Data, Yelp, Spatial Analysis, Consumption Patterns.

ción geográfica de la actividad para ambos grupos de usuario en todos los casos estudiados.

Palabras clave:
Turismo Urbano, Big Data, Yelp, Análisis Espacial, Patrones de Consumo.

Introduction. Problem Statement

The importance of tourist activity in urban destinations has been increasing for several years and has become a global trend, raising new challenges for planners and destinations managers. It has been argued that the tourist activity, if not well managed, can contribute to the loss of multifunctionality of urban spaces that receive a higher pressure (García-Hernández, de la Calle-Vaquero, & Yubero, 2017). On the basis of this statement, multiple theories have appeared that seek to model the urban tourism phenomenon from a spatial and functional perspective. Yet the complex nature of cities as dynamic systems (Fernández Güell & López, 2016) complicates obtaining precise information about the geographical distribution of urban tourists. Big data is then seen as a new opportunity which, through the emergence of new techniques and methodologies that allow its obtaining, processing and use, has allowed a widening of the resources focus and new approximations to the urban tourism phenomenon.

The present research presents the initial exploration of YELP's open-access dataset and seeks to set the base to further develop a methodology oriented to the identification of the integration of tourists and residents in an urban destination. To achieve this, exploratory research from a dual functional and spatial perspective has been carried out. The research is then addressed from the consumptive nature of the tourist activity, under the assumption that any type of business and resource can have tourist potential.

Objectives

The main objective of the present research is to analyse the integration of urban tourists and residents consumption patterns in the different urban environments provided by YELP's dataset. This integration is more specifically understood as the proportional amount of interaction, or user-generated content, that urban tourists and residents create and link with the same economic units.

To achieve that, two specific objectives have been formulated: a) to analyze the integration level of tourists and residents by functional businesses categories, by comparing the registered interaction (namely reviews posted) with the different type of businesses in each analysed city, and b) to analyze the spatial and temporal evolution of tourists and residents integration level in different urban environment, by visualizing the annual evolution of the registered interaction for all businesses types and each city.

Theoretical Framework

Spatial clustering of tourism as an economic activity

The traditional inclusion of commercial activities and infrastructure in the consideration of "tourism resources" highlights how strongly entwined the consumerist nature of tourism is with the development, planning and management of a destination. Aside from historically important or primary resources such as accommodation and historic heritage, these secondary resources and infrastructure support are key components of the tourism system (Vera Rebollo, López Palomeque, Marchena Gómez, & Anton Clavé, 2011), thus supporting the main attractions (Burtenshaw, Bateman, & Ashworth, 1991).

The involvement of complementary services overcomes the imaginary geographical and functional division between the tourist functions and the rest of the destination. This aspect of the destination's evolution has aroused and still does the interest of scholars and experts. In that way, the urban space is often classified depending on the level of the predominance of the tourist function and phenomenon on others (Burtenshaw et al., 1991; Getz, 1993b; Hayllar & Griffin, 2005; Hayllar, Griffin, & Edwards, 2008; Jansen-Verbeke, 1998; Pearce, 1998).

Functional clustering conceptualisations have evolved since Ashworth and Tunbridge's (cited in Pearce, 1998) definition of "entertainment districts", which highlighted the tendency to agglomerate of catering facilities and nightlife venues, as well as to tourist-oriented facilities such as hotels and tourist attractions. The later formulation of Burtenshaw et al., (1991) Central Tourist District (CTD) and Recreational Business District was likewise supported by the idea of the embedding of the tourist activities in the city, and that these tourists will limit their spatial consumption of the urban spaces to specific

attractions and services' concentrations and linking corridors. Getz, (1993) Tourist Business District (TBD) definition recovered this idea and nuanced the inner-city tourism system conceptualization composed by "activity place" and "leisure setting" (Jansen-Verbeke, 1986), as being delimitated complementary spaces to the general leisure and recreational urban space. Therefore, TBD assimilates the notion of spatially concentrated tourist-oriented attractions and supply facilities while it reflects on the multi-motivational nature of urban tourists. TBD will then spatially coincide or overlap with the Central Business District (CBD), as well as include a diversified range of components, namely conferences and exhibitions venues, heritage and historical attractions, waterfronts, museums and art galleries, shopping offer, catering facilities, entertainment, theatres and concert halls, sports venues and facilities, viewpoints and connections. (Judd, 1999) subsequently develops the idea of the "tourist bubble" based on the analysis of several case studies, which leads to the identification of spaces segregated from the rest of the city, in which facilities and amenities oriented to the tourist trade tend to agglomerate. Here again, those facilities include catering businesses, sports venues, nightlife offer, but also souvenir shops. The description of tourist districts, on the other hand, assimilates the notions of social and cultural heterogeneity and economic multi-functionalism (Jansen-Verbeke & Ashworth, 1990; Pearce, 2001) in the identification of six non-exclusive districts types: historic districts, ethnic districts, sacred spaces, redevelopment zones, entertainment destinations and functional tourist districts (inspired in Getz's TBD definition). This classification underlines the variety of urban tourist destinations, moves away from the traditional and dominant sectoral view, but also takes into account the importance of the management strategies undertaken by each city. Along with this line, the concept of tourist precincts emerge as a distinct geographic area differentiated of its surroundings by its variety and type of supply facilities, land uses, and the presence of a singular physical feature that contributes to visitors' interest (Hayllar & Griffin, 2005; Hayllar et al., 2008). There is a visible evolution in this conceptualisation of precincts, in the fact that they are conceived not only as tourist areas of interest but as of interest and enjoyment of residents too.

Tourism, and hence consumption, have progressively influenced the spatial and economic structures of post-modern cities as tourist destinations (Ashworth & Page, 2011; Hayllar et al., 2008a; Judd, 1999; Page, 1995; Urry, as cited in Page & Hall, 2003). Urban environments have then partially evolved into consumption and productions spaces (Pearce, 2001), where tourism and leisure offer is supplied by specialised types of equipment (Rowe and Stevenson, as cited in Page & Hall, 2003). It is widely accepted that urban tourists are multi-motivational (Ashworth & Page, 2011; Burtenshaw et al., 1991; Hayllar et al., 2008; Rogerson & Rogerson, 2016; Vera Rebollo et al., 2011) which, in combination with the attractiveness of the specialised offer available in urban destinations, implies a non-exclusive use of resources, infrastructures and services whose original function was non-touristic in nature (Ashworth & Page, 2011; Burtenshaw et al., 1991; Shaw and Williams , as cited in Page & Hall, 2003). Motivated by the similarities with tourists' interests, resident's consumption patterns concurrently adapt to this evolution of the commercial fabric and network. This spatial overlapping of functions and types of demand causes a blurring the physical and functional boundaries of the complex supply network (Britton, as cited in Judd, 1999).

With that in mind, the idea of a tourist-resident interaction space emerges (Edwards, Griffin, & Hayllar, 2008; Hayllar et al., 2008). Ashworth and Page, (2011) return to this idea when noting that "the 'tourist city' could only be conceived alongside and overlapping with, other 'cities'". The areas of the tourist city will then be integrated by attractions and supply facilities which attract tourists' attention, without necessary displacement of other functions of the urban spaces. In fact, the loss of the aforementioned multi-functionality will signify the creation of urban resorts similar to Judd's (1999) "tourist bubbles".

In the manner that proximity, accessibility, land rent, comparative shopping, existing infrastructure, investment and regeneration policies, and the concentration of other components are key drivers of tourism economic units clustering tendency (Ashworth & Page, 2011; Pearce, 1998), tourists as consumers demonstrate several differences in their consumption patterns (such as the shortness of their stay) that will directly affect the concentration of tourist flows (Lew & McKercher, 2006; Rogerson & Rogerson, 2016; Shoval & Raveh, 2004; B. Zhou, Tang, Zhang, & Wang, 2014; Zhou, Xu, & Kimmons, 2015). Paradoxically to the fact that the tourist activity needs of the existence of a supply infrastructure to develop, the "new urban tourists" tends to avoid typically categorised "tourist places" and are more and more attracted by the "ordinary life of a city" (Füller & Michel, 2014). That endless quest for authenticity, as discussed by MacCannell, (1976/2017) is not a new phenomenon, nevertheless the growing popularity of urban destinations and its strong relation with the consumption of the urban culture, lifestyle or identity (Judd, 1999; Kannisto, 2018; Page & Hall, 2003), represents a new challenge for urban planners and managers.

Big Data in urban tourism research

Urban destinations' growing affluence of tourists and the similarity between tourist and residents consumption patterns has been a traditional obstacle in the analysis of the real impact of tourism in the urban environment (Kádár, 2013). Traditional studies forms have proven to be limited in obtaining socio-spatial and temporal tourist and residents behaviours, thus complicating the planning and management of urban destinations (Florido Trujillo, Garzón García, & Ramírez López, 2018; Salas-Olmedo,

Moya-Gómez, García-Palomares, & Gutiérrez, 2018). In this context, the high cost of customary research tools as surveys or interviews, the increasing data availability and the growing focus on data management and analyse methods have motivated the exploitation of big data potential in the tourism research field (Maeda, Yoshida, Toriumi, & Ohashi, 2018). Considering that classic socio-spatial tourist data collection has often been narrowed to specific aspects of the destinations at the expense of others, for example omitting less popular attractions or excursionists-related data, the use of big data has gained relevance as a complementary or alternative source of information. For instance, Leung, Vu, & Rong, (2017) were unable to find official statistics about non-first-tier attractions and had complemented their study using user-generated content.

The analytical applications of big data, which is characterised by the massive volume of diverse information contained in datasets, by the high-speed in its generation from varied sources, and by the sophistication of the analytical and management technologies and systems that it requires (Katal, Wazid, & Goudar, cited in Batista e Silva et al., 2018; Gandomi and Haider, cited in Marine-Roig & Anton Clavé, 2015; McAfee & Brynjolfsson, cited in Önder, 2017) are diverse and versatile. Accordingly, there has been eclosion of tourist literature linked with computational science and the use of big data sources, namely user-generated sources, that has grown constantly since 2007 (J. Li, Xu, Tang, Wang, & Li, 2018).

This emphasis placed in user-generated content (UGC) as a big data source in tourism research is strongly associated with the interest aroused by the digital footprint left by both tourist and residents in their interaction with the destination's components (Önder, 2017; Salas-Olmedo et al., 2018; Scherrer, Tomko, Ranacher, & Weibel, 2018). This interaction includes online textual data, images and videos, all actively provided by users and of relative ease of access and, most importantly, georeferenced information (Kuo, Chan, Fan, & Zipf, 2018; J. Li et al., 2018). And more so, Social Networks Sites (SNS) have become the hallmark source of web-based user-generated content, where individuals and businesses create profiles and share information and knowledge (Sapountzi & Psannis, 2016), even though the characteristics of big data itself (and even more those of online social network data) as dynamic, and massive often unstructured amount of data, can potentially hamper analytical research (Sapountzi & Psannis, 2016; Zhou et al., 2015). Other obstacles of using social networking sites, microblogs, community media sites, location-based social networks and messaging platforms as sources of information are the implicit bias caused by the differences in behaviours depending on the type of users of each platform; the duplication in user-counting when using more than one SNS information source at the same time; the difficulties related to processes of extraction of information itself such as the lack of structure and its noisy nature; the lack of data availability; as well as content trust issues (J. Li et al., 2018; Maeda et al., 2018; Pranata & Susilo, 2016; Salas-Olmedo et al., 2018; Sapountzi & Psannis, 2016; Zhou et al., 2015).

Even taking into account these difficulties, the use of geographic information systems (GIS) to approach socio-spatial user behaviour through location-based social networks (LBSN) platforms is increasingly relevant, in particular by means of check-in data (Twitter) or reviews linked to geo-tagged venues (Foursquare, Tripadvisor or Yelp) (Stock, 2018; Zhou et al., 2015). This is explained by the range of possibilities that the availability of dynamic user-centred georeferenced information and context metadata offers in the analysis of the socio-spatial behaviour and patterns in the urban environment, such as mapping segmented variables, and identifying points of interest (POI) or areas of interest (AOI) (García-Palomares, Gutiérrez, & Mínguez, 2015; Leung et al., 2017; Maeda et al., 2018; Önder, 2017; Shao, Zhang, & Li, 2017), and its application in the fields of urban destinations marketing and management. POI and AOI detection, as the identification of places that generate interest and affluence of visitors or hotspots, have been one of the central research aims of computer science application to tourism research. Identifying not only the geographical concentration of visitors, but also contextual information such as interests, opinions, temporary-distribution of visits, or nationalities, is marking significant contributions to the identification and parameterisation of urban tourism areas or districts, and allows an alternative approach to the geographical distribution of the urban space multifunctional function.

Related work

POIs and AOIs clustering mapping is a common application of LBSN georeferenced data extraction and facilitates the visual display of complex, massive amount of information. Zhou et al. (2015) demonstrated the applicability of geospatial analysis based on cloud computing in their urban tourist hotspot identification based on Flikr geotagged photos, as well as the feasibility in the obtaining of popular associated tags and keywords of such clusters. Similarly, Density-Based Spatial Clustering of Applications with Noise (DBSCAN) algorithm is also used by Shao et al. (2017) when mapping natural, recreational and cultural urban tourist districts in the Huangshan City in China. In this latter case, the data that allows the detection of tourist communities is fetched from Sina-Weibo, and based on the assumption that interactions recorded at tourism-related POIs are more likely to belong to tourists.

Salas-Olmedo et al. (2018) conducted an extraction of Madrid tourist AOIs that emphasises the possibilities of combining multiple SNS data in the analysis of tourists' digital footprint. Their study, based on Panoramio, Twitter and Foursquare data, concludes that central urban spaces tend to be more multifunctional than peripheral ones, as tourists' use of the city is temporally and spatially limited.

Brandt, Bendler, & Neumann (2017), in their research about the relation between tweet semantics location and topic engagement with tourist destinations, further argue that data density is not exclusive of tourist areas but also of residents' AOIs. Maeda et al. (2018) have applied a modified DBSCAN algorithm in combination with Term-Frequency Inverse Document Frequency (TF-IDF) method to infer differences in domestic (Japanese) and international tourist POIs preferences. Their findings shed light on the possibilities of applying SNS data sources to segment consumption and behavioural patterns in the urban environment.

García-Palomares et al. (2015) mapped visually attractive POIs in several European cities and analysed the spatial distribution differences between tourist and residents georeferenced photographs activity. They concluded that the geodata distribution radius is more concentrated in the case of tourists', but that there is a spatial overlap in the case of the city's most representative sites. Similarly, Mukhina, Rakitin, & Visheratin (2017) developed a methodology to segment SNS dataset users as tourists and residents to further identify popular hotspots for both groups in Saint Petersburg. Their research, based on geotagged Instagram's entries, detected differences in the activity temporal distribution, more specifically that tourist displayed a higher level of activity during summer weekdays (coinciding with the tourist high-season), but also significant overlapping during the rest of the year. In line with the foregoing, Li, Zhou, & Wang (2018) centred their analysis in the spatial interaction between tourists and residents. The focus on spatial integration and segregation between the two groups of users is especially relevant, and their findings of a variable level of integration not only between cities but also across the same city. In this study again, tourist hotspots appear to be more concentrated, while residents consume scattered POIs.

Methodology

Yelp Datasety

This research, exploratory in nature, is based on the dataset provided on the occasion of Yelp's 2018 11th Round annual challenge under open-access conditions for academic purposes (retrieved from https://www.yelp.com/dataset/challenge). The dataset originally contained a total of 174.567 businesses records, 1,3 million users and 5,2 million reviews, has been previously filtered by Yelp's recommendation system, and covers 11 metropolitan areas. That recommendation filter implies that only businesses with 3 reviews older than 14 days are included, even if the total reviews published for each user (*review_count* variable) is also available. This allows a comparison of the total reviews posted by each user with the reviews included in the metropolitan areas analysed. The data is structured up into six main groups: Business, Check-ins, Reviews, Tips, Users and Photos. This research is based on Business, Reviews and User information only, which can be interrelated through the *business id*, *review id* and user id variables.

Data cleaning and normalisation

The data was provided in JSON format and has been inserted into a MongoDB database to interrelate the selected objects (Businesses, Check-ins, Photos, Reviews and Users).

Metropolitan areas contiguity

The dataset contained semi-structured data from unknown metropolitan areas and multiple city variables. To ensure correct plotting of the main cities with their immediate surrounding administrative settlements, a grid-based approach has been undertaken. Standard zooms 10 (20.480 metres wide tile side), 15 (640 metres wide tile side) and 18 (80 metres wide tile side) have been applied to divide the metropolitan areas in smaller square shaped tiles. A list of tiles associated with at least 1 business has been built. Metropolitan area boundaries have then been initially defined by the plotting of tiles at zoom 10 associated to at least one business, and the subsequent grouping of the contiguous tiles. The segregation of tiles whose 8 contiguous tiles have been found empty, has allowed the initial identification of secondary settlements. A second plotting phase from a tile at zoom 15 has allowed refinement of these boundaries. Specifically, the tile containing the higher number of businesses has been identified and used as a reference in plotting tiles by contiguity.

That process allowed the removal of businesses incorrectly attributed to specific cities and to ensure that georeferenced coordinates matched the metropolitan areas to which they were associated according to the city field. As a result, 168.506 businesses distributed in 11 metropolitan areas were identified, most of them located in the United States (US) and Canada (CA): Champaign (Illinois, US), Charlotte (North Carolina, US), Cleveland (Ohio, US), Edinburgh (Scotland, UK), Las Vegas (Nevada, US), Madison (Wisconsin, US), Montreal (Quebec, CA), Pittsburgh (Pennsylvania, US), Phoenix (Arizona, US), Stuttgart (DE) and Toronto (Ontario, CA).

Tag feature business classification

Because of the focus on tourist and residents interaction, all purely tourist-oriented businesses tags were removed from the sample, including all tourist accommodation-tagged, souvenir shops and other highly-specialised resort-type not emplaced in urban environments (some of which are ski or golf resorts). Several tags were considered too general to allow a correct classification and consequently ignored. The remaining 1087 categories tags are non-exclusive and

Table 1 Grouped Business Functional Categories

Monuments, landmark & heritage	Shops and stores
Museums, art galleries	Offices and diverse work premises
Cinemas, concert venues & theatres	Sports venues and related services
Nightclubs, bars & nightlife offer	Public mobility infrastructures & services
Cafes, bars, restaurants & catering activities	Private transport services

Source: Prepared by the author.
Adapted from Burtenshaw, Bateman, & Ashworth, (1991).

allowed a spatial overlap of multiple functions to better reflex the nature of urban space, through the application of a modified version of the ground theory sorting proposed by Burtenshaw et al. (1991), as listed in Table 1.

Data Processing

Residents identification

Related studies which incorporate distinctions between tourists and residents in their methodology were based on users' profiles arguing that this would avoid erroneous segmentations (Li, Zhou, & Wang, 2018). However, this information was not included in the dataset and is the reason an algorithm base on the work of Mukhina et al. (2017) and García-Palomares et al. (2015) was developed. The following assumptions are made and based on previous research and case studies:

- Urban tourists' stay at the destination is shorter than 2 weeks. The average length of stay for the analysed cities is shorter than one week in all cases (12 days if considering stay in the whole region) according to official statistical data of the responsible authorities (Arizona Office of Tourism, 2016; Commonwealth of Pennsylvania, 2015; IHK Region Stuttgart, 2017; Institut de la Statistique Québec, 2014; Las Vegas Convention and Visitor Authority, 2017; Visit North Carolina, 2017; Visit Scotland, 2016). Previous studies have considered lapses between 1 week (Salas-Olmedo et al., 2018) and 30 days (Mukhina et al., 2017).

- Urban tourists won't return to the destination in a 6 months period.

- Users that post reviews to a specific business have to have visited it.

As some users might have posted very few comments in their home city, assuming that they are tourists would significantly affect the research findings. For this reason, intervals between quartiles have been calculated for both user total reviews (*review_count*) and available reviews per user (*review_length*) and cross-referenced to estimate their statistical dispersion and discard less reliable users. The applied algorithm consists of the following several consecutive steps:

1. Users whose total posted reviews (*review_count variable*) equals 2 or less have been discarded, in considering the provided information not being sufficient for a reliable classification.

2. Users whom only 1 review is available (*review_length variable*) have been classified as tourists in the metropolitan areas where that unique available review is geo-referenced.

3. Users with more than 1 available reviews and more than 2 total reviews have been classified according to the temporary window that limits their review activity:

   3.1. Users whose reviews associated to a metropolitan area can be grouped in periods wider than 15 consecutive days have been marked as residents of that metropolitan area, and as tourists in the remaining clusters.
   3.2. Users whose reviews associated to a metropolitan area can be grouped in 2 or more groups of 15 consecutive days, whose time lapse in between of the groups is smaller than 6 months (180 days) have been marked as residents of that metropolitan area, and as tourists in the remaining clusters.

4. Users with less than 25% of available reviews of the total *review_count* but whose reviews are related to business associated with the same metropolitan area have been classified as tourists in that metropolitan area.

5. Users whose 40% total *review_ length* or more are related with business associated with the same metropolitan area have been classified as residents of that cluster.

6. Users with more than 25% of available reviews of the total *review_count*, but whose reviews are related with business associated with the same metropolitan area, have been classified as residents of that cluster.

7. The remaining users who don't fit any of the rules fixed have been dismissed.

As a result, 436.536 users (a 33% of the initial users) have been dismissed after the classificatory process.

Integration ratio

Li et al. (2018) adapted Sakoda's, (1981) Dissimilarity Index proposal, used to obtain a global Index of residents

and tourists integration. Following their methodology, an integration ratio R has been calculated to estimate the level of integration between residents and tourists for each of the analysed businesses of the dataset. R ratio is estimated considering the unique (non-duplicated) tourists (t_i) and local residents (l_i) that have posted reviews in each of the venues. Both values are divided by all unique tourists (T) and residents (L) identified for the metropolitan area where the venue is located. The difference in the proportion of tourists ($\frac{t_i}{T}$) and residents ($\frac{l_i}{L}$) interacting with that venue represents the level of interaction between the two groups:

$$R = \frac{t_i}{T} - \frac{l_i}{L}$$

The closer R is to 1, the more important that venue is in terms of tourist affluence and the less in terms of residents presence. On the contrary, venues whose ratio is negative and closer to -1 are proportionally more frequented by residents. The more extreme (setting -1 and 1 as extremes) the ratio is, the less integrated are both groups. Including total unique users for each of the groups when establishing the proportion adds perspective contributes to data normalization, and ultimately to compare cases where tourist affluence can strongly vary in term of absolute affluence numbers. In other words: the tourist activity greatly varies from one destination to another as not all cities receive a comparable number of visitors. Additionally, tourists may tend to comment on businesses or venues more frequently than residents, even if the formers one might visit the business or venues repeatedly. Basic descriptive statistics analysis has been applied to explore functional categories and associated businesses and venues integration ratio by metropolitan areas.

Mapping Evolution/ Spatial clustering

R ratios have then been spatially aggregated for obtaining of Z values. The ratios by tile (Z values) have been obtained by calculating the average R of all businesses contained in each of the tiles (n). Z has been calculated for each of the tiles at zoom 15 (409.600 m^2) and 18 (6.400 m^2) of each metropolitan areas grid-based extension.

$$Z = \frac{1}{n} \sum_{i=1}^{n} R$$

Results and discussion

As hinted above, metropolitan areas present wide differences in users and businesses size of the samples. For instance, Las Vegas is the metropolitan area with the largest sample of users followed by far by Phoenix and Toronto. In all cases, except for Phoenix, Toronto and Charlotte, more tourists than residents have been identified, symbolising the difference in tourism activity scale. Similarly, Phoenix, Las Vegas and Toronto concentrate most of the businesses of the dataset, as displayed in table 2:

Table 2 Absolute frequency of unique users and total businesses by metropolitan areas

Metropolitan Area	Total unique users	Visitors	Residents	Nº Businesses
Champaign	8.688	5.612	3.076	1.618
Charlotte	31.427	5.612	25.815	12.244
Cleveland	43.621	26.266	17.355	10.036
Edinburgh	7.872	5.729	2.143	3.854
Las Vegas	402.050	265.804	136.246	32.378
Madison	22.553	14.193	8.360	4.100
Montreal	31.755	23.016	8.739	7.558
Phoenix	262.629	114.602	148.027	50.399
Pittsburgh	43.898	26.164	17.734	9.438
Stuttgart	5.616	3.303	2.313	2.428
Toronto	73.927	30.306	43.621	28.719

Source: Own elaboration based on Yelp's 11th Round Challenge dataset and comprising data from 2004 to 2017

Business functional distribution comparison by metropolitan areas

In general, there is a clear preponderance of businesses tagged as "Cafes, bars, restaurants & catering activities" (43,92% on average), followed by "Offices and diverse work premises" (36,51%) and "Shops and stores" (28,35%). Even considering the fact that tags have not followed a proportional distribution, there is a clear specialization in catering-related services: of 1087 total tags, only 118 (close to 11%) were assigned to that category. On the contrary, both "Offices and diverse work premises" and "Shops and stores" concentrate 57,29% and 15,51% of all tags, respectively. Phoenix, Las Vegas, Champaign and Charlotte are exceptions in which the businesses distributions show a slightly higher presence of offices and workplaces. The reason of such specialization remains uncertain, as it can be argued whether restaurants and catering-oriented services businesses tend to optimise their online presence, or whether if there is, in fact, such a strong presence of this type of business in all case studies.

"Nightclubs, bars & nightlife offer" category follows by far with an average of 10,17% of all venues classified within this group, except for the case of Edinburgh (18%) mostly due to the inclusion of "pubs" as nightlife-related tag. Paradoxically, Las Vegas proportion of businesses categorised as nightlife-oriented (8%) ranks below the average (10%) even if its absolute frequency is still higher than in any other case with a total of 2.593 businesses.

The remaining categories group less than 4% of all venues in all metropolitan areas, or even less than 1% in the case of "Museums, art galleries", "Public mobility infrastructures & services", "Private transport services" and "Monuments, landmark & heritage".

However, all cities present a spatial overlap of all functional categories which can be explained by the concentration tendency of georeferenced businesses. Besides, functional categories are non-exclusive and most of the analysed businesses are classified in more than one group at the same time. As illustrated by the example of Toronto's metropolitan area in figures 1, 2, 3 and 4 (at tile zoom 18), all businesses and venues' distribution concentration follows the urban layout, outlining the presence of important streets and roads. There is a clear spread of offices and working places (that includes approximately 27% of the total Toronto's businesses) while both cafes and other catering activities (that in the case of Toronto represent more than a 50% of all businesses) and shops and stores (28%) tend to concentrate in smaller areas. Still, both shops and catering businesses clusters clearly overlap and coincide with the same clusters that show higher density economic units. This is represented by the darker shade of red, in contrast to light orange and yellow shades used to represent low-density in businesses by tile (see figures 1, 2, 3 and 4). Functional categories that group a smaller quantity of businesses is found to replicate this pattern at a smaller scale with, in the case of the lowest frequencies, no clear clustering tendency but even then spatial overlapping with other categories.

All metropolitan areas display significant density of businesses in specific clusters with multifunctional orientation. Business sprawl varies accordingly to the business frequency of the different business categories. Logically, categories with fewer businesses (as monuments and landmarks of important mobility infrastructures) don't display concentration patterns as some of them appear as isolated, Nevertheless, when comparing their locations with another activity type, overlapping is made visible. These results suggest no general functional difference between urban spaces. It should anyway be considered to further segment the categories applied in this research, as some of them (namely offices and work premises) include a wide amount of diverse type of businesses, what can affect the final results.

This distribution pattern is repeatedly reproduced in the remaining ten metropolitan areas analyzed (Figures 1, 2, 3 and 4).[1]

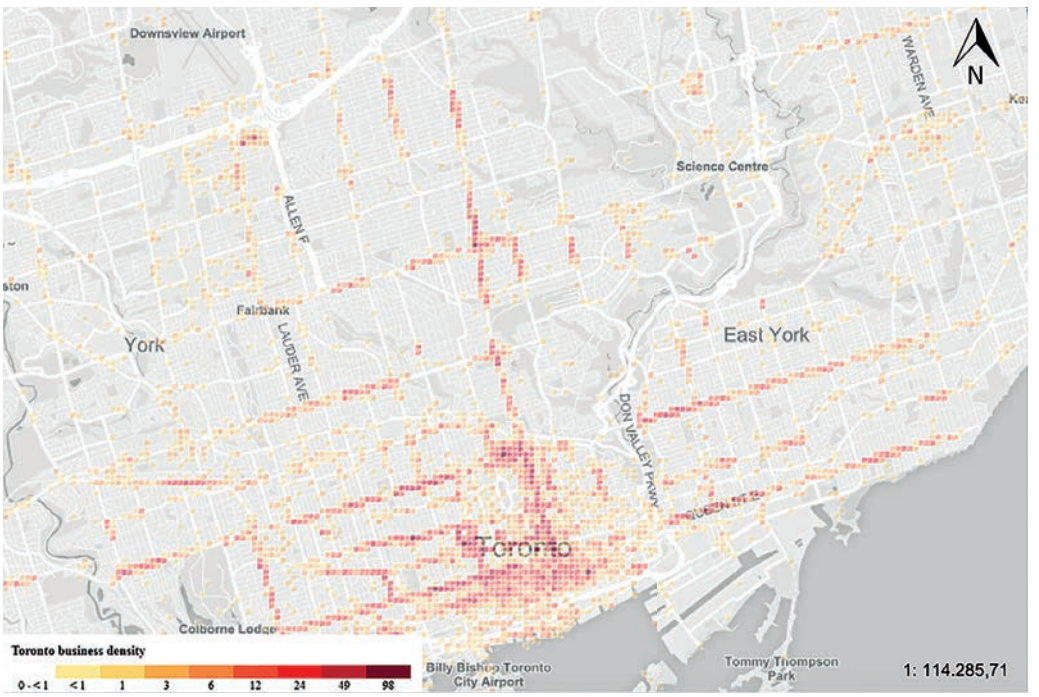
Tourists and residents integration by functional category

At a city level, all integration ratios appear to be negative and extremely close to 0, starting from Edinburgh that appears to have the lowest ratio (-0,00365006513 0042) to Las Vegas and its highest integration level (-0,000034703222347). From Edinburgh to Las Vegas, Champaign ranks 2nd and is followed by Stuttgart, Madison, Montreal, Pittsburgh, Cleveland, Charlotte, Toronto, Phoenix and Las Vegas in terms of global integration.

Similarly, calculated ratios by categories result in values extremely close to 0, what is translated into a proportionally similar level of interaction of tourists and residents. Only Toronto's monuments and Charlotte's mobility infrastructures and services average ratio ranks positive, showing a proportionally higher interaction of tourists than residents. In fact, businesses such as mobility-related infrastructures and services (airports, train, bus and taxi stations, parking and vehicle rental services, among others) together with businesses and venues marked as "Monuments, landmarks & heritage" (churches, cathedrals, castles, architectural tours and historical buildings) show the higher level of integration between tourists and residents. In general, a higher proportion of businesses with positive ratios can also be found among these categories, as represented by Table 3 (page 45):

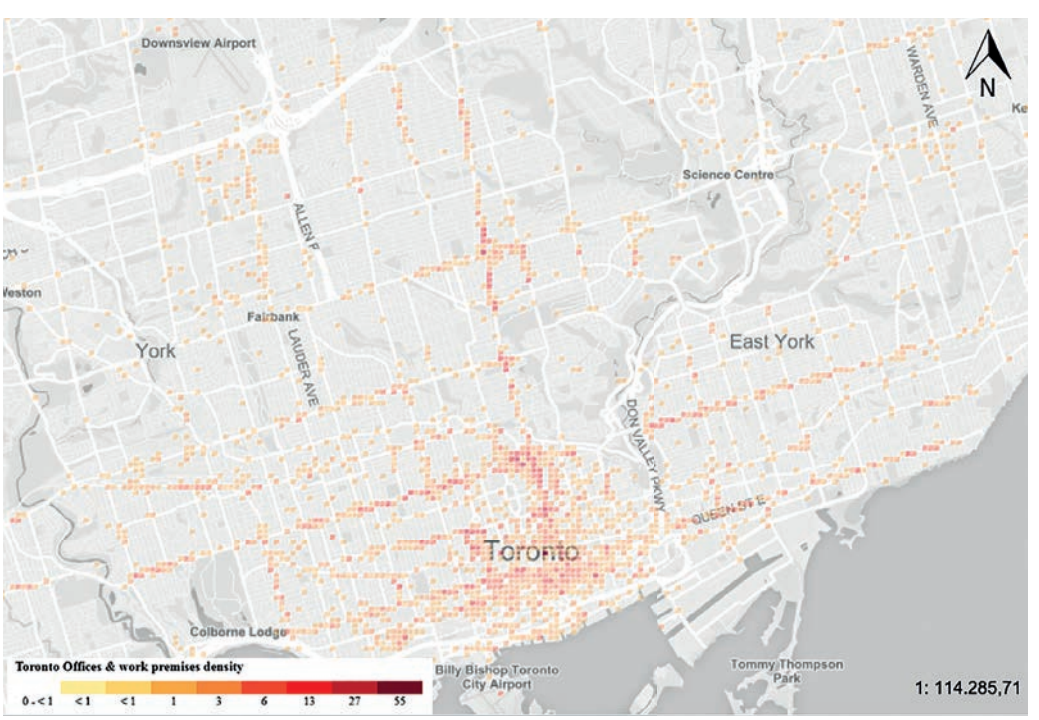
1 All processes and maps have been compiled and are openly accessible at the following GitHub repository: https://oromerob.github.io/spatial_distribution_tourist_perception/

Figure 1 Spatial distribution of Businesses concentration in Toronto (per tile of 640 m²)



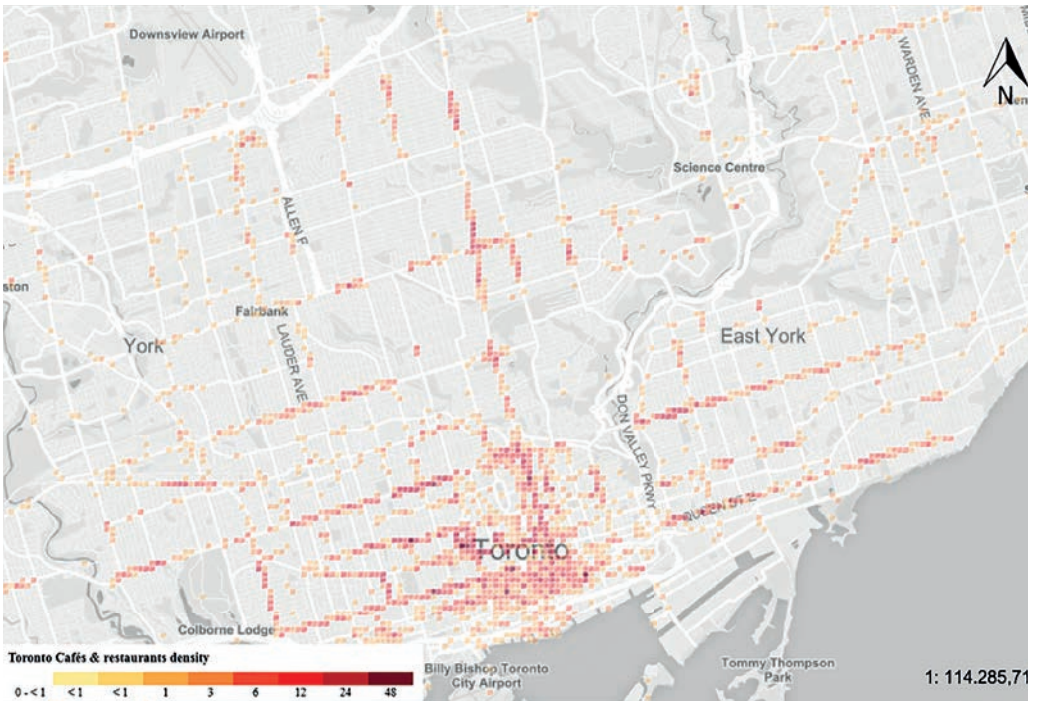
Source: Own elaboration based on Yelp's 11th Round Challenge dataset and comprising data from 2004 to 2017.

Figure 2 Spatial distribution of Offices and diverse work premises in Toronto (per tile of 640 m²)



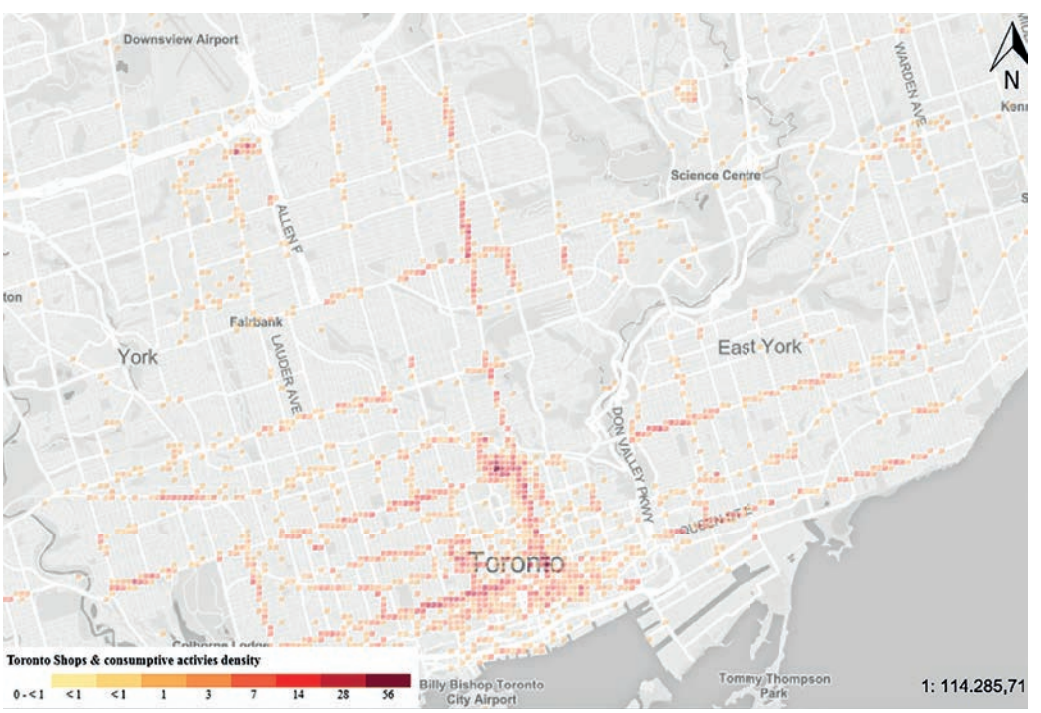
Source: Own elaboration based on Yelp's 11th Round Challenge dataset and comprising data from 2004 to 2017.

Fig. 3 Spatial distribution of Cafes, bars, restaurants & catering activities in Toronto (per tile of 640 m²)



Source: Own elaboration based on Yelp's 11th Round Challenge dataset and comprising data from 2004 to 2017.

Figure 4 Spatial distribution of Shops and stores in Toronto (per tile of 640 m²)



Source: Own elaboration based on Yelp's 11th Round Challenge dataset and comprising data from 2004 to 2017.

Table 3 Distribution by metropolitan areas of the proportion of business type showing positive integration ratios

Metro-politan Area	% Offices and diverse work premises	% Shops and stores	% Cafes, bars, restau-rants & catering acti-vities	% Night-clubs, bars & nightlife offer	% Sport venues and related services	% Cine-mas, concert venues & theatres	% Museums, art galleries	% Public mobility infras-tructures & services	% Monu-ments, landmark & heritage	% Private trans-port services
Champaign	13,22%	6,41%	2,10%	4,27%	18,75%	19,51%	7,14%	13,04%	25,00%	18,75%
Charlotte	9,40%	4,08%	2,53%	2,96%	3,72%	15,28%	4,63%	16,67%	3,70%	12,99%
Cleveland	11,61%	5,77%	2,20%	2,84%	5,88%	11,28%	10,20%	20,59%	11,11%	10,96%
Edinburgh	4,12%	3,96%	3,41%	3,01%	4,92%	5,26%	1,59%	3,85%	14,29%	0,00%
Las Vegas	4,85%	4,64%	2,62%	7,48%	3,71%	7,67%	8,85%	26,76%	8,06%	28,42%
Madison	6,28%	7,72%	5,93%	6,21%	10,19%	8,33%	6,25%	0,00%	0,00%	11,90%
Montreal	15,86%	4,62%	2,81%	4,51%	2,86%	10,88%	10,34%	9,09%	19,23%	11,76%
Phoenix	7,47%	5,10%	2,45%	3,93%	7,47%	12,84%	8,49%	25,51%	7,65%	15,54%
Pittsburgh	9,49%	4,68%	2,00%	2,91%	7,01%	14,44%	9,28%	24,24%	7,02%	18,97%
Stuttgart	14,12%	4,99%	5,50%	6,23%	8,70%	10,13%	5,88%	42,11%	0,00%	15,38%
Toronto	9,27%	5,47%	2,17%	3,18%	3,79%	7,19%	8,50%	10,56%	17,14%	15,00%

Source: Own elaboration based on Yelp's 11th Round Challenge dataset and comprising data from 2004 to 2017

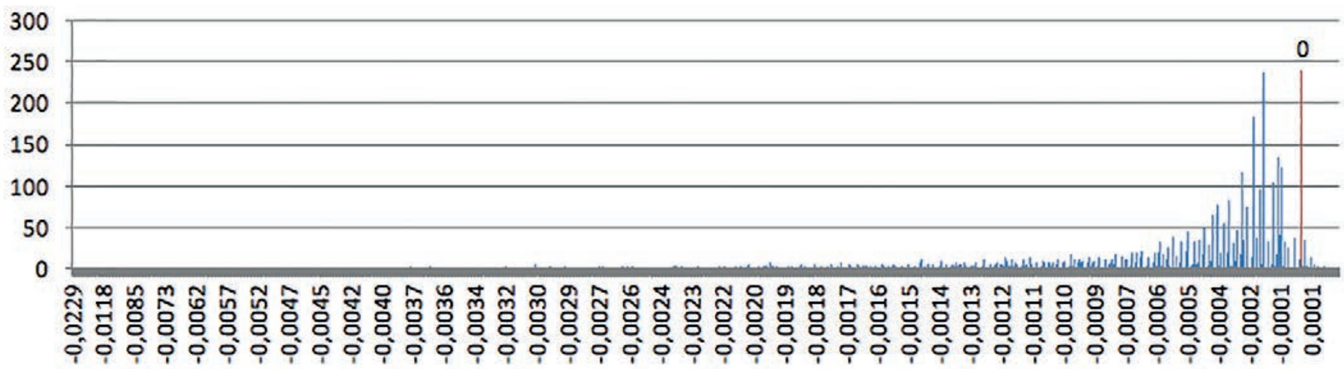
On the contrary "nightclubs, bars & nightlife offer", and "cafes, bars, restaurants & catering activities" are found out to concentrate more venues with a lower level of integration, mostly negative, that being those where a higher proportion of residents than tourists posting reviews in such businesses. Still, the majority of businesses integration ratio values remain very close to 0 in all cases (being 0,000158214689460 the highest, and -0,007237375536728 the lowest). In term of business numbers, these categories also present the lowest proportion of businesses showing positive ratios (an average of 3%), what corroborates the finding of that there are more nightlife-oriented, and catering services-oriented businesses where proportionally more residents than tourists go, and that those frequented by tourists are also frequented by residents in a very similar proportion. This distribution can be clearly seen in Figures 5 and 6 (Cleveland and Pittsburgh respectively) distributions of the number of "cafes, bars, restaurants & catering activities" businesses by integration ratio distribution (next page).

As shown by both figures, there is a higher frequency of venues close to 0 values, and a large dispersion of very few businesses closer to the most negative of the values (far left of the horizontal axe).

Differences are observed when analysing frequency dispersion of more integrated categories such as Phoenix's "Museums, art galleries" businesses group (figure 7, at next page), whose ratio dispersion is much smaller and better balanced between positive and negative values. As illustrated by Phoenix's example below, businesses frequencies are distributed between smaller ratio values. Still, the overall distribution trend identified in figures 5 and 6 is reproduced at a lower scale.

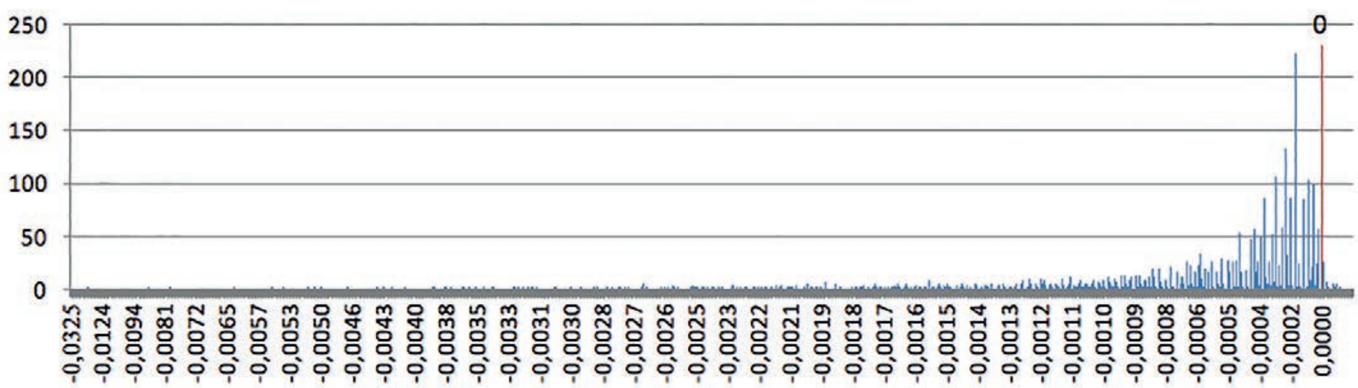
In applying, Pearson's correlation coefficient, it has been found that there is a strong inverse correlation between the number of reviews registered per venue and the integration ratio R. In other words, the increasing number of reviews a business has, the lower ratio (closer to -1) the business will have. This is especially relevant when considering that residents' level of interaction with businesses through social media is assumed to be lower than tourists', as it appears

Figure 5 Cleveland metropolitan area's "cafes, bars, restaurants & catering activities" businesses frequency by integration ratio



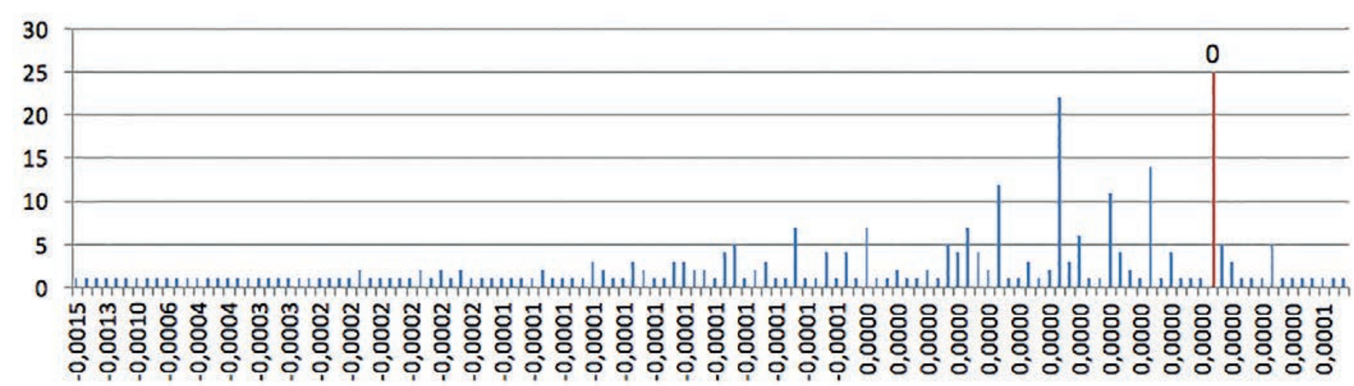
Source: Own elaboration based on Yelp's 11th Round Challenge dataset and comprising data from 2004 to 2017.

Figure 6 Pittsburgh metropolitan area's "cafes, bars, restaurants & catering activities" businesses frequency by integration ratio



Source: Own elaboration based on Yelp's 11th Round Challenge dataset and comprising data from 2004 to 2017.

Figure 7 Phoenix metropolitan area's "museums, art galleries" businesses frequency by integration



Source: Own elaboration based on Yelp's 11th Round Challenge dataset and comprising data from 2004 to 2017.

that residents write more reviews on businesses' profiles where the presence of tourists is lower. Only Madison and Edinburgh are exceptions to this rule, where absolutely no correlation has been found at a city level. The remaining metropolitan areas show diverse results, but "Shops and stores", followed by "Cafes, bars, restaurants & catering activities", and "Nightclubs, bars & nightlife offer", are without any doubt the category where the businesses with more reviews are also the ones proportionally more frequented by residents.

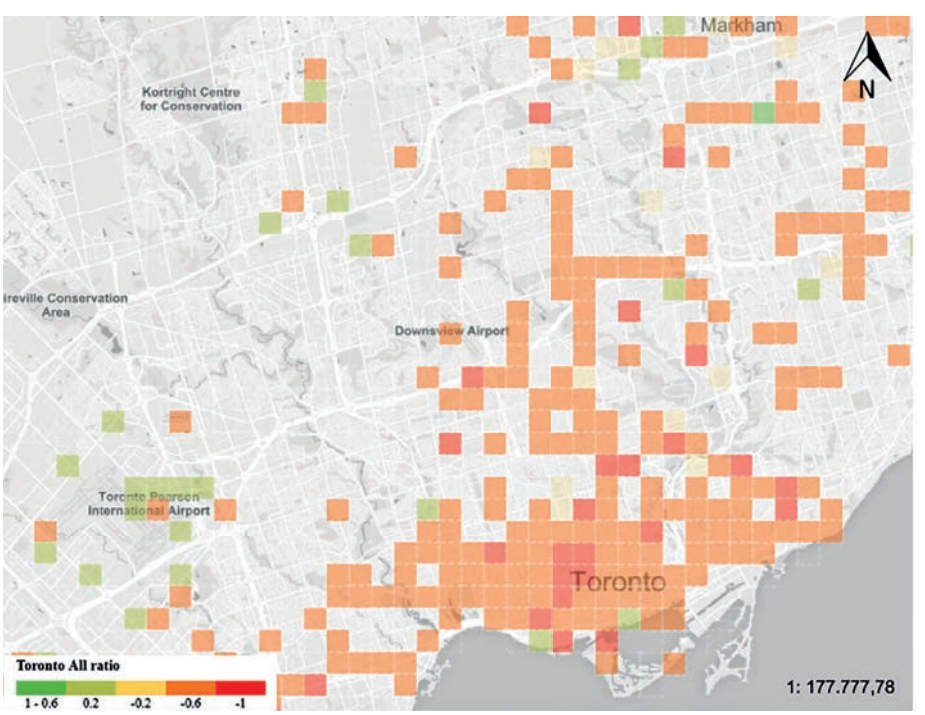
Tourists and residents integration spatial distribution

When displaying Z results at a city level for all categories, metropolitan areas with the higher amount of listed businesses show a clear integration tendency when visualized at tile zoom 15 (409.600 m^2), particularly from the year 2015 as illustrated in figures 8, 9, 10 and 11 (next pages) with Toronto's and Charlotte's examples. On the other side, metropolitan areas with a lower amount of venues such as Montreal, Pittsburgh, Edinburgh and Stuttgart do not follow this trend and show fragmented results depending on the year analysed.

No significant pattern has been identified when analysing temporal evolution of functional category-associated ratios, except for the fact that those areas where airports are located seem to maintain a positive integration ratio. Also, no visible cluster of positive ratio that remains stable or whose extension increases can be identified at tile zoom 15. Results displayed at tile zoom 18 (6.400m^2) are consistent with this and show significant differences among years and metropolitan areas without a clear pattern. The well-known Strip tourist area in Las Vegas is an exception as, as displayed below in figure 12 (next pages), it appears to increasingly concentrate tiles at zoom 18 that show positive ratio.

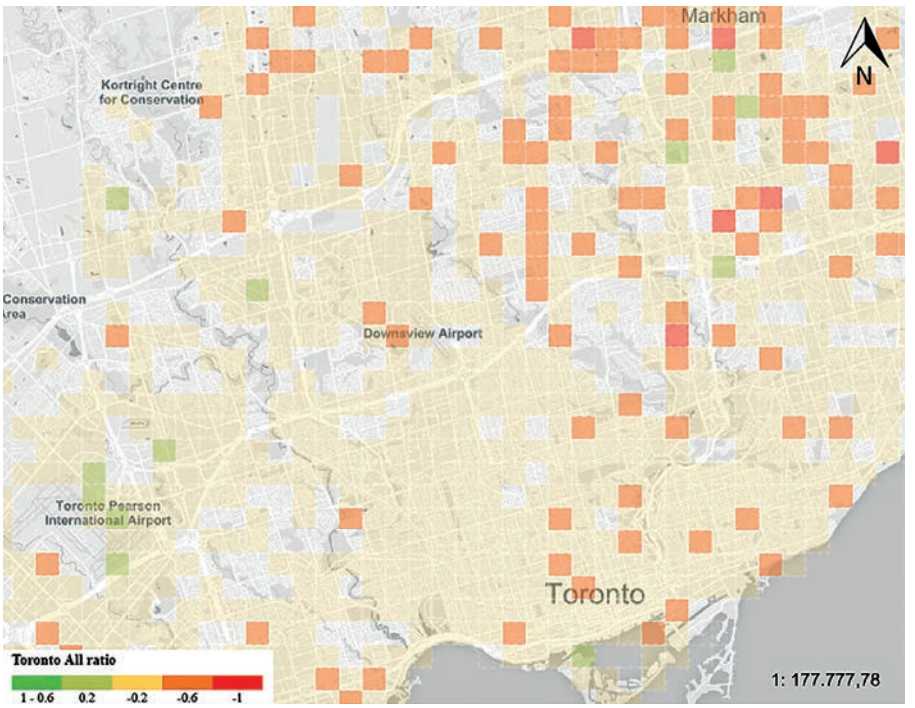
Results suggest that spatial integration for all categories (excepting international airports) increases over time, which implies a growing spatial dispersion of the tourist activity. This is consistent with the reviewed literature, where tourists-oriented spaces are stated to be integrated with the rest of urban functions. Still, it has to be noted that the lack of qualitative data doesn't allow to presuppose any displacement of urban functions, as hinted by Judd's (1999) "tourist bubbles" conceptualization. Also, the differences in data amounts between metropolitan areas and functional categories seem to condition the identification of integration patterns. For this reason, the dataset analysed here could be complemented with additional big data sources oriented to different targets, as well as official tourist affluence statistics to reduce possible bias and contextualized the results obtained.

Figure 8 Toronto metropolitan area's 2008 integration ratio (per tile of 409.600 m^2)



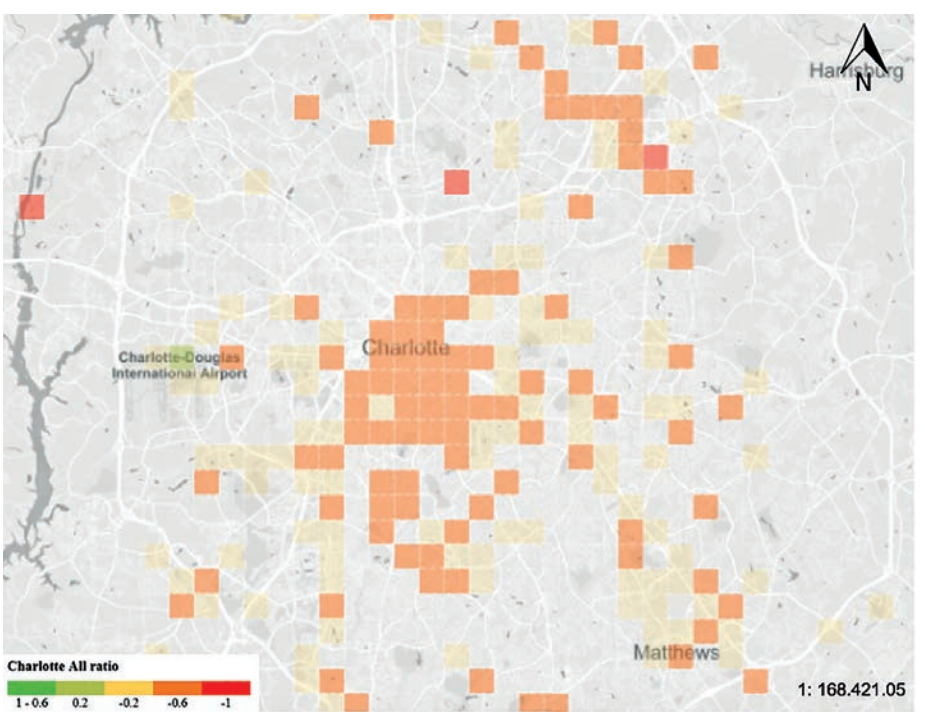
Source: Own elaboration based on Yelp's 11th Round Challenge dataset and comprising data from 2004 to 2017.

Figure 9 Toronto metropolitan area's 2017 integration ratio (per tile of 409.600 m²)



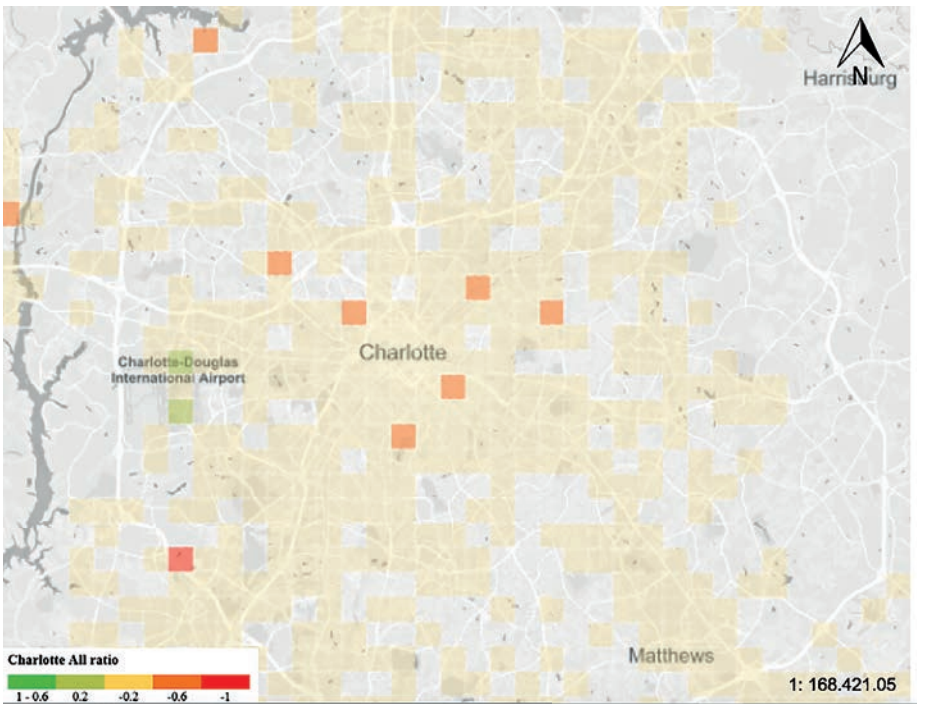
Source: Own elaboration based on Yelp's 11th Round Challenge dataset and comprising data from 2004 to 2017.

Figure 10 Charlotte metropolitan area's 2008 integration ratio (per tile of 409.600 m²)



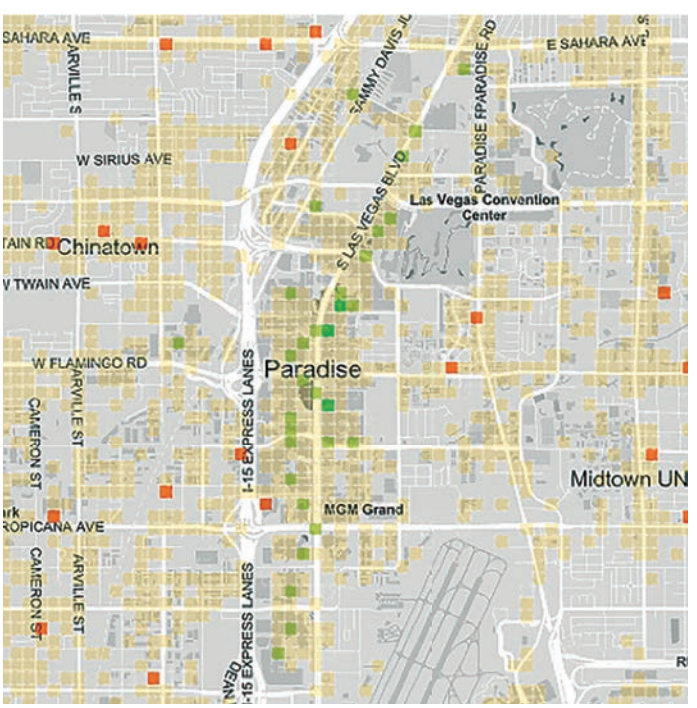
Source: Own elaboration based on Yelp's 11th Round Challenge dataset and comprising data from 2004 to 2017.

Figure 11 Charlotte metropolitan area's 2017 integration ratio (per tile of 409.600 m²)



Source: Own elaboration based on Yelp's 11th Round Challenge dataset and comprising data from 2004 to 2017.

Figure 12 Las Vegas metropolitan area's 2017 integration ratio



Source: Own elaboration.

Conclusions

The initial data exploration presented in this paper sought to analyse the level of integration between tourists and residents in several metropolitan areas. The methodology developed covers different phases that go from the initial geographical clustering of venues, to the identification of user types using a specially crafted algorithm based on several previous studies, and to the calculation of integration ratios, and that ultimately constitutes the most significant contribution to the research field. In this case, LBSNs have proven to be a source of a significant amount of data that, if used complementary with ground-based knowledge, give valuable knowledge about the urban tourism phenomenon. Though, the lack of structured data and the high amount of information require very specific methods to be developed ad-hoc for each different type of analysis.

Results were expected to show a similar functional integration level between tourists and residents as previous literature states that both user groups make a similar usage of the urban space, even if tourists confront specific constraints related to their short length of stay and limited budget. Although the obtained results appear to confirm that tourists and residents interact with the same type of business, further detail could be beneficial to avoid the loss of nuances in the quantitative treatment of text variables meant to be complementary, as it happens with the different tags used in categorising businesses.

Additionally, results were also expected to show a higher concentration of the proportion of tourists in a less scattered area, as previous studies lead one to think. Despite this, tourist activity seems to increasingly spread in the urban space over time, without concentrating enough in specific areas to result in the loss of integration between tourists and residents. However, it can be argued that the source in which the research is based lead to bias due to the own preferences of its users who, as in any other LBSN, are also the content generators. Specifically, YELP promotes itself as being especially popular among locals, a premise consistent with the obtained results. Future research could contribute to overcoming this limitation by introducing alternative data sources to obtain additional data and different user profile types. Furthermore, it can also be discussed whether the dismissal of such an important amount of users has significantly affected the obtained results, and future research could be worthwhile to sharpen the first step of the algorithm presented here. Nevertheless, this initial exploration clearly allows the identification of delimitated areas that present a higher business concentration with a clear associated multifunctionality, in line with previous studies that outline this particularity of urban tourist destinations. It is therefore recommended to provide continuity to studies that incorporate big data as information sources, as they have proven to be able to provide new information that, in combination with others, can support tourism planning and management decisions.

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How Urban Sustainable Development Can Improve Tourism Attractiveness

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Abstract

This paper investigates the role of sustainable development in city tourism attractiveness. A tripartite theoretical model of tourism attractiveness was tested to verify the relevance of the economic, environmental, social and cultural aspects of urban sustainable development. The comparative analysis of Québec City and Bordeaux was based on visitors' perceptions established through a questionnaire survey conducted with 499 tourists in summer 2014. This analysis produced three main findings. First, four levels of city tourism attractiveness were revealed (context, belt, complementary attractions and nucleus) and variables related to the urban living environment stood out in importance. Second, visitors recognized four sustainable development dimensions, and proved most sensitive to cultural aspects, followed by environmental concerns. Third, the correlations between tourism attractiveness and sustainable development were stronger within the broader spheres of attractiveness. The study reveals that sustainability notions are most strongly internalized by tourists when tangibly reflected in the public space. By offering visitors new perspectives on urban living, sustainable development brings smart solutions to perpetuate the urban tourism industry while improving quality of life for residents.

Key Words:
Sustainable Development, Tourism Attractiveness, Urban Tourism, Québec City, Bordeaux.

Resumen

Este artículo investiga el papel del desarrollo sostenible en el atractivo del turismo urbano. Se probó un modelo teórico tripartito de atractivo turístico para verificar la relevancia de los aspectos económicos, ambientales, sociales y culturales del desarrollo urbano sostenible. El análisis comparativo de la ciudad de Québec y Burdeos se basó en las percepciones de los visitantes establecidas a través de una encuesta realizada con 499 turistas en el verano de 2014. Este análisis arrojó tres conclusiones principales. Primero, se manifestaron cuatro niveles de atractivo para la ciudad (contexto, cinturón, atracciones complementarias y núcleos) y destacaron las variables relacionadas con el entorno urbano. En segundo lugar, los visitantes reconocieron cuatro dimensiones de desarrollo sostenible y demostraron ser más sensibles a los aspectos culturales, seguidos de las preocupaciones ambientales. En tercer lugar, las correlaciones entre el atractivo turístico y el desarrollo sostenible eran más fuertes dentro de las esferas más amplias del atractivo turístico. El estudio revela que las nociones de sostenibilidad están más fuertemente internalizadas por los turistas cuando se reflejan de manera tangible en el espacio público. Ofreciendo a los visitantes nuevas perspectivas sobre la vida urbana, el desarrollo sostenible brinda soluciones inteligentes para perpetuar la industria del turismo urbano al tiempo que mejora la calidad de vida de los residentes.

Palabras clave:
Desarrollo Sostenible, Atractivo Turístico, Turismo Urbano, Ciudad De Québec, Burdeos.

Introduction

Simultaneously the main living spaces of the majority of the world's population (55%) and trendy tourist destinations (+ 14.2% bed-nights 2012-2016 in Europe), cities are evolving in a world marked by competition, in particular in the tourism sector (European Cities Marketing, 2016; Sassen, 2006; World Bank, 2017). Faced with the threat of climate change, policymakers and local actors are employing strategies to make their cities more livable, while at the same time taking into consideration their national and international reputations (Jan & Beesau, 2010; Law, 1992). Indeed, over the past twenty years in Québec and in France, there has been a redefinition of public policies oriented towards more sustainable urban development (Emelianoff, 2007a). This is reflected, for example, in the restructuring of public transit and in the renewal of public spaces (Kenworthy, 2006).

Beyond its ability to improve urban habitats, the notion of sustainable city raises questions regarding its potential for territorial differentiation, particularly in terms of tourism practices. Representing an important part of economic activities and generating various impacts, urban tourism requires multiple resources offered by the city (Edwards, Griffin, & Hayllar, 2008; Van den Berg & Braun, 1999). Visitors share the everyday life of citizens, occupy space, benefit from the facilities and use the various public and commercial services. But how is sustainable urban development perceived by tourists?

To date, some studies have combined sustainable development and urban tourism (Rigall-I-Torrent, 2008; Satterthwaite, 1997; Timur & Getz, 2008), but the literature on these themes still leaves many areas to explore (Ashworth & Page, 2011; Bramwell & Lane, 2008). Understanding the dynamics between these areas of research is the ambition and originality of this study's approach. As cities evolve towards sustainable development practices, what are the impacts on their tourism attractiveness? The specific areas questioned by this study were: 1) the recognition given by tourists to various attractions; 2) the consideration of the characteristics associated with the sustainable development of a city; and 3) the possible links between these themes. A theoretical model of tourism attractiveness was thus combined with the economic, environmental, social and cultural dimensions of sustainable development. Using a quantitative methodology, urban tourists from Québec City and Bordeaux were interviewed.

The next section will proceed with a review of the relevant literature and a presentation of the research objectives. In Section 3, the research methodology will be presented. Section 4 will present the results, which will then be analyzed in Section 5. A conclusion will close the paper.

Literature

Urban sustainable development

For several decades, sustainable development has been part of the redefinition of urban policies, reflecting a shift towards a new mode of urban development (Edwards et al., 2008; Emelianoff, 2007a). According to the Brundtland Report, this mode of development strives to meet the needs of present generations without compromising the ability to satisfy those of future generations (Brundtland, 1987).

An offshoot of sustainable development, the sustainable city aims to integrate the economic, environmental, social and cultural dimensions of the urban environment (A. Lévy, 2009; Veyret & Le Goix, 2011). It is based in particular on the Aalborg Charter, which recognizes the role of cities in sustainability (Charte d'Aalborg, 1994; Charte d'Aalborg +10, 2004). In order to preserve the resources, economic dynamism and identity of the city, actors assemble around a political project oriented towards the improvement of the quality of life of all the citizens, which mobilizes strategies related to density, social and functional diversity, public transport or natural areas (Emelianoff, 2007b; Keivani, 2010; Speirs, 2003). Beyond simply a fight against inconveniences, the sustainable city is committed to regaining public spaces, the presence of nature in the city, soft mobility, control of sprawl and participatory democracy (Theys & Emelianoff, 2001). Since the Rio Earth Summit in 1992, Agenda 21 has been a plan that proposes a transversal approach, establishing the actions to be implemented to achieve the chosen objectives (Emelianoff, 2005; Lazzeri & Moustier, 2008; Vlès, Clarimont, & Hatt, 2011). The common use of sustainable development indicators can serve as a signal to municipal governments, as well as priority orientations, sources of information and support for regional objectives (Li et al., 2009; Tanguay, Rajaonson, Lefebvre, & Lanoie, 2010).

Most often perceived as a search for balance between economic, social and environmental considerations, several researchers express the importance of examining sustainable development from the perspective of each of its components (Gibson & Hassan, 2005; Rogers, Jalal, & Boyd, 2008). Another conception approaches sustainable development as a hierarchy of poles: the environment is positioned as an essential condition, social development as an objective and the economy is the means to achieve it (Gendron & Revérêt, 2000; Sébastien & Brodhag, 2004). To these three dimensions, a fourth is added: the cultural aspect. This touches on identity, art and heritage, and is a crucial element in community building (Brault, 2009; A. Lévy, 2009; Runnalls, 2007). These dimensions, raised from the Brundtland report, are compatible and non-exclusive (Brundtland, 1987; J. Lévy, 2010).

If the notion of the sustainable city developed following the recognition of the limits of environmental and social solidarity, a conciliation challenge still lies in identifying resources that can offer international promotion without harming cultural, social and environmental heritage (Jan & Beesau, 2010; Laigle, 2007; Sassen, 1996). There is mounting recognition of the importance of sustainable development to ensure the competitiveness of the city (Balkyte & Tvaronavičiene, 2010; Poirot & Gérardin, 2010). This competitiveness is defined as the ability to succeed in the market, leading to a better quality of life for all by combining economic dynamism and social progress. The Organization for Economic Co-operation and Development (OECD) emphasizes the importance of international competition between urban environments (Kamal-Chaoui & Robert, 2009). As a result, several cities are moving towards this approach in order to become more attractive on a global scale (Camagni, 2002; Nijkamp, 2008; Van den Berg & Braun, 1999). Here, the term attractiveness represents the capacity of a territory to be chosen by an actor (citizen, investor or visitor) as the location of their activities (Poirot & Gérardin, 2010). In order to respond to the economic, environmental, social and cultural rationale behind the approach, it seems essential to bring together measures of territorial attractiveness and sustainable development (Deisting & Paumard, 2012; Musson, 2010). Focusing on tourism attractiveness in relation to sustainable urban development thus seems an interesting avenue of research.

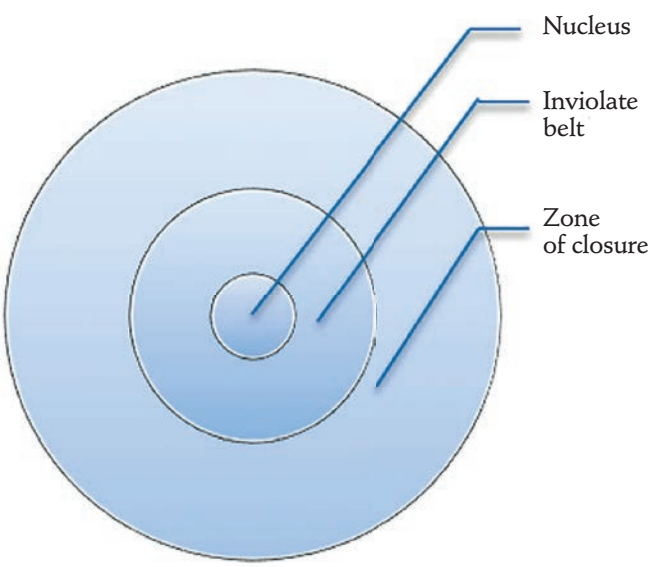
Urban tourism

Urban tourism is a specific type of tourism that takes place in a city (Duhamel & Knafou, 2007; WTO, 2008). Metropolitan tourism is also discussed, referring to "the integration of tourist products in a metropolitan offer cemented by the lifestyle, the pace of the inhabitants and the atmosphere that one finds there" (Pilette & Kadri, 2005). The city can thus be “consumed” by citizens, tourists and day-trippers.

Urban tourism is distinguished from other categories of tourism, notably by the multiple motivations supporting the practice (Ashworth & Page, 2011; Blank & Petkonich, 1980; Pearce, 2001). These include visiting relatives, business and conventions, culture, outdoor activities, entertainment, sightseeing or shopping (Ashworth & Page, 2011; Blank & Petkonich, 1980; Law, 1992, 2002). In fact, much of the tourism experience is lived in the public space (Ashworth & Page, 2011). If globally, sustainable development can be part of the renewal strategies deployed by a city, the connection between urban planning and urban tourism appears necessary for harmonious and balanced development between residents and tourists (Laroche & Hermet, 2010). Bridging the two areas together can contribute to a better development of cities.

Several tourism authors have studied attractiveness to understand how tourists are attracted to a destination (Gunn, 1997; Leiper, 1990; Lew, 1987). According to Lew (1987), tourism attractiveness is defined as the element of the destination that pulls the traveler away from their usual environment. From this perspective, Gunn (1997) approaches the spatial environment of the tourist attraction as three concentric disks (Figure 1). The "nucleus" is the *raison d’être* that attracts tourists. The "inviolate belt" zone represents the touristic setting. Finally, the "zone of closure" constitutes the broader context of attraction. For Crouch (2011), tourism attractiveness is based on the attributes of a destination and the perception of visitors. It is therefore through their eyes that one can better understand the attractiveness of a tourist site.

Figure 1 Tripartite model of tourism attractivenesss



Source: Gunn (1997).

The attractiveness of a city consists of primary and secondary elements (Jansen-Verbeke, 1986). The former includes tourism resources and facilities that attract visitors (eg museums, historic buildings). These resources are generally the main objective of an urban tourism visit. The secondary elements are those that support these attractions and contribute to the tourism of the city (eg shops, accommodation). Additional aspects are also available to the tourist, such as parking spaces, information desks and signage (Jansen-Verbeke, 1986).

Some factors (pull and push) are known to influence the choice of vacation destination (Dann, 1981; Gnoth, 1997; Uysal & Jurowski, 1994). This study focuses on pull factors, a destination’s external forces that encourage tourists to visit (Crompton, 1979; Van der Merwe, Slabbert, & Saayman,

2011). These include recreational equipment or historical attractions (Andreu, Bigné, & Cooper, 2001). Several cities are also relying on infrastructural improvement to develop tourism: pedestrian zones, built-up areas, unifying themes or tourist complexes (Hayllar, Griffin, & Edwards, 2008; Page, 1995).

Evidence of tourists' renewed conscience regarding the places they visit, eco-friendly travel is becoming more common (François-Lecompte, Prim-Allaz, & Durif, 2013; Lamic, 2008). Sustainable urban tourism is an ongoing development strategy that balances the current benefits of the tourism industry with future opportunities for the host community (Paskaleva-Shapira, 2007). If both urban and tourism initiatives are inevitably linked, it is important to better understand how tourism happens within the city to identify the important aspects of sustainable tourism (Vlès et al., 2011).

Sustainable development could help stimulate an authentic city experience and attract more visitors. Research shows that the environmental quality of a destination gives it a competitive edge (Cracolici & Nijkamp, 2009; Kelly, Williams, & Englund, 2007; Mihalič, 2000). It is also observed that tourists tend to prefer locations where tourism offerings meet eco-efficiency criteria, and that are willing to invest in environmental measures (Hedlund, 2011; Kelly et al., 2007; Miller, 2003). Since urban tourism is based on the attributes and characteristics of the area, and the tourism offering cannot be isolated from the environment in which it is located, a city's sustainability-related adaptation could be an essential condition of their tourism attractiveness (Edwards et al., 2008; Van den Berg & Braun, 1999).

Objectives

The urban context appears relevant for examining the impact of sustainability-related actions on the tourism attractiveness of a destination. The mere fact that "strolling" is urban visitors' main activity speaks volumes about the importance of the quality of the environment in which this tourism is happening (Vlès, 2008, 2010). Indeed, an integrated approach in public spaces seems best able to account for the priorities of sustainable tourism. A sustainable development approach could thus combine two objectives: the improvement of both the quality of urban life and the tourism attractiveness. Instead of seeing this mode of development as a constraint, public policy makers and industry players could recognize the opportunity to make tourism in the city viable in the long term. The goal is thus to evaluate visitors' recognition of sustainable urban development and understand its impact on the tourism offering.

The notion of sustainable development is gradually integrating into urban understanding, and is beginning to be associated in the literature with the tourism attractiveness of a city (Lu & Nepal, 2009). The research to date has mainly focused on the link between the environment and tourism. Alternatively, this article aims to bridge the four dimensions of sustainable development and urban tourism attractiveness. Since sustainable development contributes to the competitiveness of a city (Balkyte & Tvaronavičiene, 2010) and an environmentally responsible destination can provide a better context for visiting tourists (Bojanic, 2011; Kelly et al., 2007; Mihalič, 2000), the general research question is: *what are the impacts of sustainable urban development on the tourism attractiveness of a city?*

Gunn's tripartite model provides a theoretical framework for understanding the role of sustainable development on the tourism attractiveness of the city (Gunn, 1997). Inspired by the elements of urban tourism, the cultural, physical and social attractions of the tourist city (eg historical monuments) make up the nucleus that attracts tourists (Donald, 1993; Jansen-Verbeke, 1986). The second level represents the framework surrounding these main attractions (Hayllar et al., 2008). This refers to the design and planning of places through which the tourist must pass to access the attractions. The third level is part of the larger context of the city, most notably exemplified by social and municipal services, as well as tourist support facilities such as accommodation, transport, shops and information services. The study therefore required the measurement of the three levels of attractiveness in order to then examine links with sustainable urban development.

Articulating the link between sustainable development and tourism attractiveness, three questions underpin this reflection. First, recognition of the city's attractions is questioned. Given that the literature distinguishes three levels of attractiveness (Gunn, 1997), it is important to understand the importance given by visitors to each of the circles, namely the nucleus attractions, the tourist belt and the urban context. Secondly, consideration of the sustainable development characteristics when choosing an urban destination is questioned. Since sustainable development is recognized as having four dimensions (Tanguay et al., 2010), it seems relevant to know whether tourists consider the various associated variables when choosing and planning their stays. Finally, the relations between each dimension of sustainable development and the spheres of tourism attractiveness are examined (Rajaonson & Tanguay, 2009; Vlès et al., 2011). As there are different levels of attractiveness, sustainable development could play a role for each of the circles presented in the conceptual framework. Assuming that sustainable development-related urban transformations can modify the tourism offering, and that the information about the city is transmitted to the visitor, the sub-questions retained for the research focus on the tourist's level of the interpretation of these elements.

Methodology

Tourist Perceptions

To explore the role of sustainable development in urban tourism attractiveness, a questionnaire survey was conducted among tourists, with the aim of better understanding urban tourism attractiveness and highlighting the most recognized characteristics associated with sustainable development. The survey was conducted in Québec City and Bordeaux with a random sample of urban tourists. The majority of the questions were formulated in a closed manner, presented with multiple choice or five-point Likert scales. However, an open-ended question was also inserted into the questionnaire to obtain more information. The questionnaire addressed the characteristics of tourists and their trip, the determinants of their destination choice, variables associated with sustainable urban development indicators, and information markers.

The sample size was 249 respondents in Québec and 250 respondents in Bordeaux, each with a margin of error of 6.2% and a 95% confidence level. The survey in Québec City was conducted from July 14 to 24, 2014, while the one in Bordeaux was held from August 11 to 22, 2014. The collection weeks for the two cities were selected for comparability, purposely outside of large festivals and special events. The survey was administered in a face-to-face or self-administered interview, depending on the respondent's preference. From the main tourist information center of the two cities, the interviewer selected one out of every five tourists until the desired sample had been reached. The location was chosen in order to question respondents at the beginning of their stay, and thus close to their initial motivations and perceptions.

Two factorial analyses of the principal components made it possible to study the interrelationships between the variables, to group them in factors and to generate composite indices (Stafford, Bodson, & Stafford, 2006). This method therefore helped bring together the various indicators of attractiveness and sustainable development. Then, through several Spearman correlation exercises, it was possible to identify which dimension of sustainable development holds the most weight in destination choice, and more precisely on what level of attractiveness (Clason & Dormody, 1994).

Cities Studied: Québec and Bordeaux

The study was carried out in the cities of Québec and Bordeaux, both recognized on the UNESCO World Heritage List and shown to have shifted towards sustainable development over the past twenty years (UNESCO, 1985, 2007). They have been twin cities since 1962, with a cultural component, exchange of experiences in the health field, university cooperation, and inter-municipal institutional cooperation in several fields including sustainable development and tourism (Mairie de Bordeaux, 2013). Moreover, Québec City and Bordeaux have a tourist-friendly character and offer comparable attractions based on heritage and history, a particular urban atmosphere and many festivals and events (Gunn, 1997). Their similarities and their differences contributed equally to the choice of cases studied.

The selected cities are relatively comparable in size (Québec: 532,354, metropolitan area: 568,026 / Bordeaux: 241,287, metropolitan area: 737,492), despite different urban densities (Québec: 1,038 h / km^2, metropolitan area: 1,005 h / km^2 / Bordeaux: 4,888 h / km^2, metropolitan area: 1,275 h / km^2) (INSEE, 2012; ISQ, 2014; Statistics Canada, 2011). The differences in temperature are also noteworthy, since Québec has a humid continental climate and snow-covered winters, whereas Bordeaux has an oceanic climate with mild winters. In terms of tourism, Québec welcomes more than 4.5 million visitors each year, while around 5.5 million tourists visit Bordeaux (OTB, 2015a; OTQ, 2014). To accommodate these people, 9,274 rooms are available in Québec City and the hotels have an average occupancy rate of 65.8% (OTQ, 2014). Bordeaux has 6,493 rooms and hotels are on average 60.3% occupied (OTB, 2015a, 2015b).

In both Québec City and Bordeaux, sustainable development has been evident throughout the city, particularly over the past two decades (Bordeaux Métropole, 2017; Bordeaux, 2007; Ville de Québec, 2005, 2011). Bordeaux was revitalized in depth in the early 2000s, while Québec gradually incorporated the theme into its urban policies. In terms of transport, both offer a common service accessible to residents and visitors, with the tramway in Bordeaux and buses in Québec City. Finally, many development and revegetation efforts were made in the central neighborhoods of the two cities and along their respective rivers, the St. Lawrence and the Garonne.

Results

Urban sustainable development policies in Québec City and Bordeaux have various impacts on tourism. This section highlights the results of the research by addressing the information collected from visitors.

Indicator Ranking

The indicators of tourism attractiveness and sustainable urban development, measured through visitor responses, make it possible to hierarchize their centers of interest. The focus is thus on the indicator order of importance rather than the average value, given that cultural factors may have affected the scores awarded.

Table 1 Mean and rank of importance of tourist attractions considered

Variables	Québec City		Bordeaux	
	Mean	Rank	Mean	Rank
Urban atmosphere	4.10	1	3.66	4
Urban architecture	4.10	2	3.94	1
Pedestrian-friendly places	4.08	3	3.86	2
Monuments and historical sites	4.02	4	3.70	3
Public spaces, parks, gardens	3.93	5	3.65	5
Accommodations and restaurants	3.73	6	3.29	6
Public services	3.57	7	3.14	7
Tourist information	3.42	8	3.01	9
Contact with residents	3.04	9	2.36	13
Shops, commercial services	2.97	10	2.72	11
Museums and art galleries	2.86	11	2.50	12
Access and signage	2.78	12	2.98	10
Excursions	2.67	13	3.08	8
Festivals and events	2.15	14	1.71	15
Theaters, concerts and night life	1.99	15	1.88	14
Fairs, conventions and exhibitions	1.75	16	1.40	16

Question 11: In preparation for this trip, on a scale of 1 to 5, where 1 is "the lowest" and 5 is "the highest", how important did you consider the following attractions before choosing to visit Québec City/Bordeaux?
Source: Own elaboration.

Tourism Attractiveness

In terms of tourism attractiveness indicators, a list of statements has been drawn up to measure tourists' interest in attractions, based on previous research (Gnoth, 1997; Jansen-Verbeke, 1986; Van der Merwe et al., 2011; Yoon & Uysal, 2005). These variables were selected to represent the three spheres of Gunn's model (Table 1).

Of the top 10 tourist attractions in order of importance, 8 variables were found in both the Québec and Bordeaux lists. With a few nuances, the first rankings were the urban atmosphere (1st Québec, 4th Bordeaux), urban architecture (2nd in Québec, 1st in Bordeaux), pedestrian-friendly places (3rd Québec, 2nd Bordeaux), monuments and historic sites (4th Québec, 3rd Bordeaux), public spaces, parks, gardens (5th in both), accommodation and food (6th in both), public services (7th in both) and tourist information (8th Québec, 9th Bordeaux). The contact with residents ranked 9th in Québec City (13th Bordeaux) while the nearby excursions, particularly in the vineyards or peripheral attractions, was 8th in Bordeaux (13th Québec). In both cities, theaters, concerts and nightlife, festivals and events or fairs, congresses and exhibitions had the lowest ranks.

Sustainable Development

In terms of sustainable development criteria, the variables were derived from indicators of sustainable city development and cultural policy evaluation, established in previous studies (Poirier, 2008; Tanguay et al., 2010). The objective was to address the economic, environmental, social and cultural fields by measuring the contribution of these variables when choosing a city to visit (Table 2).

Of the first 10 elements, 7 variables were found on the list in Québec and Bordeaux. Visitors to both cities clearly agreed on the top three: the built and natural heritage, the authenticity of places and lifestyles, and the cultural

Table 2 Average Value and Ranking of Relevant Urban Components According to Tourists

Variables	Québec City		Bordeaux	
	Average	Rank	Average	Rank
Built and natural heritage	4.10	1	3.77	1
Authenticity of places and ways of life	3.78	2	3.31	2
Music, gastronomy, crafts, cinema	3.54	3	3.28	3
Animation of public space	3.44	4	2.90	6
Green spaces and biodiversity	3.25	5	2.76	8
Public art and street furniture	3.20	6	3.02	5
Safety and crime rates	2.75	8	2.03	12
Price level (cost of living)	2.74	7	2.22	11
Social and ethnic diversity	2.63	9	2.00	14
Infrastructure development	2.61	10	2.44	9
Public transit and bicycle network	2.51	11	3.03	4
Local products trade	2.49	12	2.84	7
Pollution level (e.g. air, noise, water)	2.48	13	2.27	10
Accessibility for all (e.g. disability)	2.38	14	2.02	13
Recycling and waste management	2.31	15	1.88	16
Economic activity	2.26	16	1.95	15
Types of energy used	2.09	17	1.81	17
Solidarity policies (e.g. poverty)	2.08	18	1.65	18
Access to health care	1.98	19	1.55	19
Employment situation (e.g. unemployment)	1.69	20	1.38	20

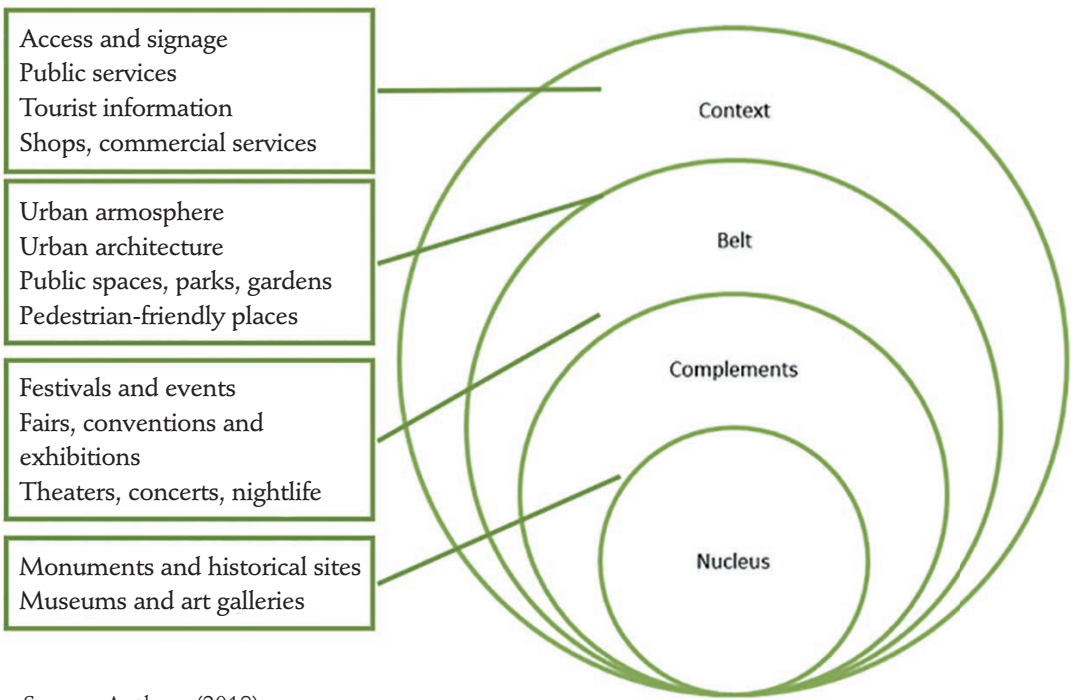
Question 13: When choosing and planning your stay in Québec / Bordeaux, on a scale of 1 to 5, how much importance did you attach to the following urban characteristics?
Source: Own elaboration.

industry (music, gastronomy, crafts, cinema). In Québec City, public space animation came in 4th place (6th Bordeaux) and green spaces and biodiversity ranked 5th (8th Bordeaux). In Bordeaux, it was public transportation and the cycle network that ranked 4th (11th Québec) while public art and street furniture were in fifth place (6th in Bordeaux). While the indicators remained relatively close in order, some divergences were observed. For example, the local products trade was better positioned for visitors from Bordeaux (12th Québec, 7th Bordeaux), while security and the crime rate (7th Québec, 12th Bordeaux), the price level (8th Québec, 11th Bordeaux) and social and ethnic diversity (9th Québec, 14th Bordeaux) were more important for Québec City visitors. The last four items were the same for both cities.

Factor Analysis

Two factor analyses of the principal components were carried out from indicators developed through tourist interviews. The first one was applied to tourism attractiveness variables while the second focused on sustainable development indicators. These treatments were performed on all respondents in order to generate equivalent factors for Québec City and Bordeaux and allow comparative analysis. The method used to extract the factors was the study of the components' eigenvalue, or the variance explained (Ferguson & Takane, 1989; Stafford et al., 2006). The factor analysis was performed with varimax rotation.

Figure 2 Tourism attractiveness factors by urban tourists



Source: Authors (2018).

Tourism Attractiveness

The factor analysis carried out on tourism attractiveness variables revealed four factors. These components represented four levels of tourism attractiveness of the city, namely the urban context, the belt, the complementary attractions and the nucleus (Figure 2). In total, this analysis explained 62% of the tourism attractiveness (Appendix 1).

- First of all, the **urban context** included indicators for access and signage, public services, tourist information, and shops and services. This component referred in general to urban services used by both residents and visitors.

- Secondly, the **tourist belt**, which stood out as the factor with the highest explanatory potential, was composed of the urban atmosphere, architecture, public spaces, parks and gardens as well as pedestrian-friendly areas. This component brought together variables related to the urban living environment and planning elements.

- The third factor included **complementary attraction** variables, such as festivals and events, fairs, congresses and exhibitions, as well as theaters, concerts and nightlife. Initially perceived as one of the central variables for urban tourism attractiveness, these were treated differently by visitors who actually gave them a less crucial role.

- The fourth factor, referred to as the **nucleus**, consists of historical monuments and sites, as well as museums and art galleries. Although this factor reveals that few attractions are considered central, the importance given to them is considerable.

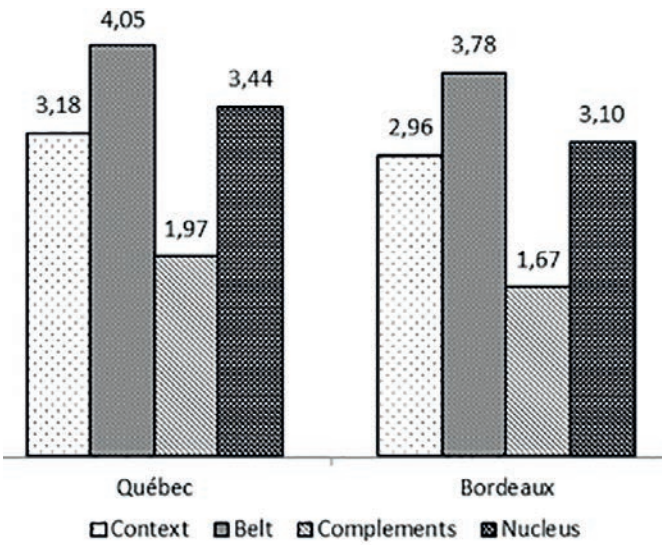
In order to understand the importance given to the different levels, an average was calculated for each component in the two cities studied. In Québec City as well as in Bordeaux, the tourist belt got the highest score (Québec: 4.05, Bordeaux: 3.78), followed by the attractions of the nucleus (Québec: 3.44, Bordeaux: 3.10), the urban context (Québec: 3.18, Bordeaux: 2.96) and the complementary attractions (Québec: 1.97, Bordeaux: 1.67). Figure 3 presents these results.

The urban living environment and amenities within the tourist belt therefore play an essential role in the attractiveness of the city, even appearing to be more important than the nucleus. Nevertheless, given that the latter has only two elements, it must be recognized that visitors attach great importance to them. The urban context is also not neglected by visitors, who take it into consideration when preparing their trip. Finally, the complementary attractions are taken into account very little, but this can partly be justified by the choice of a collection period outside of major festival events.

Sustainable Development

A second factor analysis was performed on the items used to measure the city's sustainable development criteria.

Figure 3 Importance attached to tourism attractiveness levels (average value)

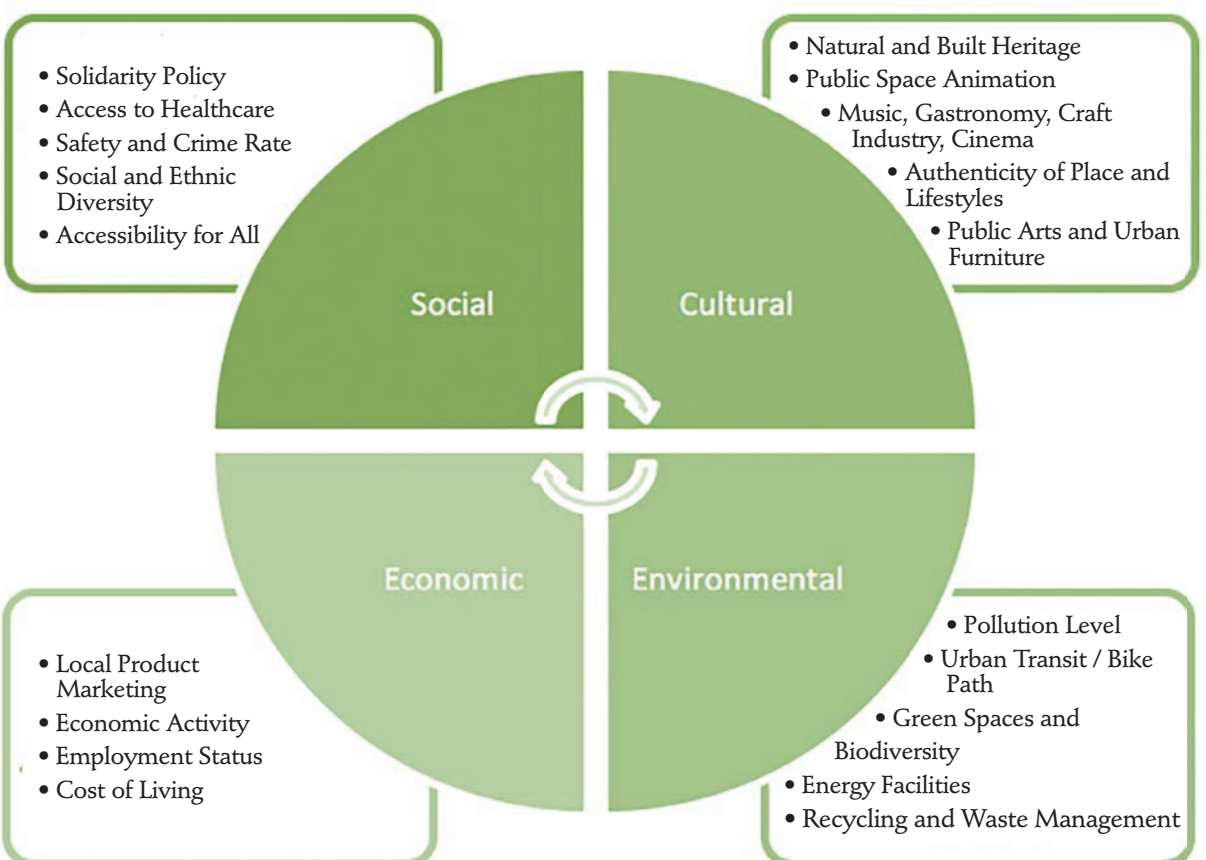


Question 11: When preparing for your trip, how important do you consider the following tourist attractions when deciding to visit Québec City/Bordeaux, on a scale of 1 to 5?
Source: Own elaboration.

The factors, generated from the characteristics that tourists focus on when choosing a destination, represent the four components of sustainable development - the social, cultural, environmental and economic dimensions (Figure 4). The analysis accounted for 63% of tourists' consideration of sustainable development (Appendix 2).

- The first component groups variables related to the **social** field. It brings together solidarity policies, access to health care, security and crime rates, social and ethnic diversity and accessibility for all.
- The second factor includes indicators of a **cultural** nature: built and natural heritage, the animation of public space, music, gastronomy, arts and crafts, the authenticity of places and lifestyles, public artwork and street furniture.
- The third component of the factor analysis includes **environmental** indicators, namely the level of pollution, public transit and cycling network, green spaces and biodiversity, the types of energy used, in addition to recycling, and the management of waste pollution.

Figure 4 Sustainable development factors by urban tourists



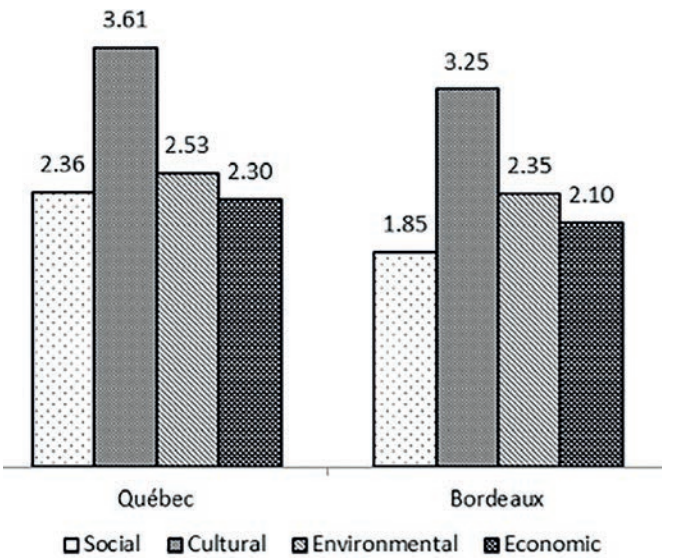
Source: Authors (2018).

- The fourth factor, the **economic** dimension, includes trade in local products, economic activity, employment situation and price levels.

In order to compare each sample's level of importance given to each of the different dimensions, an average was calculated per factor (Figure 5). Respondents from Québec City and Bordeaux showed the highest interest in the cultural dimension (Québec: 3.61, Bordeaux: 3.25), which included indicators similar to the attractiveness elements, like built and natural heritage for example. The second factor in order of importance was the environmental dimension (Québec: 2.53, Bordeaux: 2.35). This refers to the variables related to green spaces and biodiversity, as well as public transit and cycling, which contribute to increasing this average. In terms of economic factors (Québec: 2.30, Bordeaux: 2.10) and social factors (Québec: 2.36, Bordeaux: 1.85), average values appeared to be lower.

As shown, culture acts as an essential criterion for the choice of a city for tourism, proving the most important dimension to visitors. Nevertheless, elements related to the urban environment are also important for visitors, who take them into consideration when planning their trip.

Figure 5 Importance attached to sustainable development (average value)



Question 13: When choosing and planning your stay in Québec / Bordeaux, on a scale of 1 to 5, how much importance did you attach to the following urban characteristics?
Source: Own elaboration.

Correlations between factors

In the final stage of data processing, correlation analysis made it possible to qualify the links between the dimensions of sustainable development and the spheres of tourism attractiveness. Spearman's rho is a non-parametric test using the rank of variables to determine the existence of a correlation (Allen & Seaman, 2007; Clason & Dormody, 1994; Gibbons & Chakraborti, 2014). According to the evaluation scale, an index between 0 and 0.35 reveals a weak correlation, between 0.36 and 0.67 an average correlation, between 0.68 and 0.90 a high correlation, while a value greater than 0.90 represents a very strong relationship (Taylor, 1990).

On the one hand, analyses of correlations between attractiveness and sustainable development factors were made from the sample of respondents visiting Québec City. Table 3 reveals statistically significant correlations, ranging from 0.184 to 0.423. Average strength correlations appeared between the context and each index of sustainable development (social: 0.350, culture: 0.374, environment: 0.395, economy: 0.423). The tourist belt was also quite connected to the cultural dimension (0.359). As for the complementary attractions and the nucleus, they were

Table 3 Correlations between the sustainable development factors and the tourism attractiveness (Québec City)

Québec City	Social	Cultural	Environmental	Economic
Belt	,188**	,359**	,240**	,184**
Context	,350**	,374**	,395**	,423**
Complements	,239**	,209**	,191**	,256**
Nucleus	,245**	,248**	,245**	,238**

**. Correlations are significant at the level of 0,01 (bilateral)
Source: Own elaboration.

Table 4 Correlations between the sustainable development factors and the tourism attractiveness (Bordeaux)

Bordeaux	Social	Cultural	Environmental	Economic
Belt	,178**	,437**	,248**	,146*
Context	,481**	,436**	,507**	,486**
Complements	,336**	,302**	,361**	,358**
Nucleus	,252**	,403**	,325**	,281**

**. Correlations are significant at the level of 0,01 (bilateral)
Source: Own elaboration.

very weakly connected to the four dimensions. According to the results, sustainable development had a stronger link with the contextual component of Québec City. For this attractiveness factor, the economy was distinguished by its moderate strength correlation, followed by the environment. The tourist belt was also linked to the cultural factor. This can be associated in particular with the notion of architecture present in this level of attractiveness.

On the other hand, the same correlation analyses were conducted between attractiveness and sustainable development factors for respondents who visited Bordeaux. Table 4 reveals significant correlations ranging from 0.146 to 0.507. These correlations appear more pronounced between the urban context and each of the sustainable development indicators (social: 0.481, culture: 0.436, environment: 0.507, economy: 0.486). It is important to note that the relationship between the context factor and the environmental component was particularly strong compared to other Spearman coefficients, reaching 0.507. In addition, it appears that the tourist belt was specifically related to culture (0.437). In terms of complementary attractions, they were weakly related to the social component (0.336), the environmental component (0.325) and the economic component (0.358). The nucleus was related to culture (0.403) and environment (0.325). The results illustrate that context, the most encompassing factor of attractiveness, is most related to sustainable urban development in Bordeaux. The tourist belt and nucleus were also correlated with the cultural dimension, while the complementary attractions were weakly affected by the four dimensions.

Thus, according to tourist perception, the context of the city seems particularly related to sustainable development. Associated with the various urban services offered to citizens and visitors and recognized by tourists as playing a role in the preparation of the trip, this context qualified as the factor of attractiveness most affected by sustainable development approaches, with the environmental component most strongly in mind. It should also be noted that the belt and the nucleus were more related to the cultural factor. This is logical since the elements that make up this factor, such as built heritage, are similar to certain variables of these levels of attractiveness. Finally, the correlations appear higher in Bordeaux than in Québec, which could be due to the extent of the urban transformation carried out in Bordeaux in the last twenty years.

Discussion

Bridging the gap between sustainable urban development and urban tourism attractiveness requires an assessment of tourists' perceptions of these two areas of research. The first two research sub-questions considered the recognition given by tourists to the attractions of the city and the characteristics of sustainable development, while the third sub-question aimed to understand the relationship between tourism attractiveness factors and dimensions of sustainable development.

First, the factor analysis performed on the attractiveness variables revealed four components, though the initial attractiveness model was based on three levels. On a scale from the global to the particular, these levels are the urban context, the tourist belt, the complementary attractions and the nucleus of attractiveness. In terms of importance, the tourist belt obtained the highest score, followed by the nucleus attractions, urban context and complementary attractions. However, it is notable that tourists were paying specific attention to the urban environment and to the amenities that make up the tourist belt. Cities' sustainable development strategies certainly have a role to play in this respect, including actions related to planning, public spaces, pedestrian friendly areas and architecture.

Secondly, the factor analysis of sustainable development indicators confirmed the importance given to the

sustainable characteristics of cities when choosing a destination. The factors generated represent the four dimensions of sustainable development: the cultural, environmental, social and economic dimensions. The average of the factors reveals a greater tourist concern regarding the cultural dimension, in both Québec City and Bordeaux, with the environmental dimension second in importance. Economic and social factors were the least valued.

Third, an analysis was performed relating the components that emerged from each factor analysis. The correlation analysis made it possible to affirm that sustainable development is more strongly associated with the urban context than with other spheres of attractiveness. Indeed, the 4 dimensions were particularly related to this level, which brings together urban services in general (access and signage, public services, tourist information, shops and service shops). Given the correlations that emerged for the two samples, it was shown that the economic dimension had a stronger correlation with the urban context in Québec City. Comparatively, in Bordeaux, relationships were pronounced for each of the components, but the environmental dimension was distinguished by a high correlation with the context. Trams, wharves and urban revitalization clearly played an influential role in these relationships in Bordeaux. The strength of the links between sustainable development and tourism thus seem to be subject to the scale of actions implemented in each territory.

Returning to the main question of this research (*What are the impacts of sustainable urban development on the tourism attractiveness of a city?*), the study shows that sustainable development is associated with the tourism attractiveness of the city. This is reflected first by the tourists' perceived link between the tourism attractiveness of the city and urban planning initiatives in public spaces. Indeed, tourists proved more interested in the tourist belt than in the main attractions of the city, and more strongly evaluated the sustainability indicators of a tangible nature. Given that some tourists have difficulty conceptualizing sustainable development, some perceive and value it through its concrete representations in the public space. The four dimensions of sustainable development, considered by urban tourists when choosing and planning their stay in the city, were particularly related to the urban context. However, a city's sustainable development policy also contributes to the consideration of urban services in general. The culture is correlated with the tourist belt and the nucleus, and some efforts must also concentrate on the cultural dimension which plays a key role in the urban tourism attractiveness.

From a practical perspective, this research has shed new light on the elements that attract visitors to a city. The results illustrate that some tourists are sensitive to sustainable development, including cultural and environmental aspects. This is even more evident when discussing the requalification of urban public space, which plays a key role in attractiveness. This urban renewal not only contributes to improving the quality of life of the inhabitants, but also to revitalizing the tourism offering itself. By accentuating sustainable development efforts and enhancing these characteristics, urban destinations can hope to generate a new tourism influx, attract more conscientious visitors, and encourage people to visit differently and extend stays. Better articulating sustainable development and tourism can thus be considered a solution to perpetuate the industry.

Conclusion

This work illustrates that the sustainable development policy carried out in a city plays a global role in its tourism attractiveness, contributing especially to the recognition of its urban context. The cultural and environmental dimensions have a major impact on this attractiveness, particularly with regards to the tourist context, belt and nucleus. Indeed, links are present in both cities, although they are more pronounced in Bordeaux. This can be explained by the extent of its urban metamorphosis over the last 20 years, compared to a more recent evolution in Québec City. Thus, the more a city is advanced in its approach, the more obvious the correlations appear to be. It can therefore be assumed that tourists appropriate sustainable development installations, accordingly adjusting their tourism practice in the city.

The experiences of Québec and Bordeaux show that the realization of new projects related to sustainable development promotes a new tourism attractiveness for the city, without compromising the balance between its population and the influx of visitors. These conclusions may eventually lead the urban and tourism stakeholders to further integrate sustainable tourism strategies to increase the influence of the city, but also ensure the perennity of the industry. Indeed, the integration of tourism considerations upstream from the creation of urban policies could bring many benefits to the city, not only at the level of tourism revenues but also in terms of urban practice. For example, in the case of transportation, this may mean providing an efficient and user-friendly service, serving the city's touristic highlights and various neighborhoods.

Appendix 1 Factor analysis based on tourist attractions

Components and variables	Coefficients	Variance explained Real*	Variance explained Internal
Component 1: Tourist belt			
Urban atmosphere	.766		
Urban architecture	.755	29.1%	46.8%
Public spaces, parks, gardens	.738		
Pedestrian-friendly places	.737		
Component 2: Urban context			
Access and signage	.761		
Public services (e.g. cleanliness)	.742	14.0%	22.6%
Tourist information	.741		
Shops, commercial services	.583		
Component 3: Complementary attractions			
Festivals and events	.817	9.7%	15.6%
Fairs, conventions and exhibitions	.720		
Theaters, concerts and nightlife	.711		
Component 4: Nucleus			
Monuments and historical sites	.812	9.3%	14.9%
Museums and art galleries	.768		
Total variance		**62.0%**	**100.0%**

*Before rotation
Source: Own elaboration.

Appendix 2 Factor Analysis Based on the Sustainable Development Variables

Components and variables	Coefficients	Variance explained Real*	Variance explained Internal
Component 1: Social		39.5%	62.5%
Solidarity Policy (e.g., poverty)	0.789		
Access to Healthcare	0.772		
Safety and Crime Rate	0.701		
Social and Ethnic Diversity	0.667		
Accessibility for All (e.g., Disabled)	0.665		
Component 2: Cultural		11.2%	17.8%
Natural and Built Heritage	0.774		
Public Space Animation	0.757		
Music, Gastronomy, Craft Industry, Cinema	0.742		
Place Authenticity and Lifestyles	0.727		
Public Art and Urban Furniture	0.720		
Component 3: Environmental		6.6%	10.5%
Pollution Level (e.g., air, water)	0.742		
Urban Transit and Bike Path	0.732		
Green Spaces and Biodiversity	0.730		
Energy Facilities	0.619		
Recycling and Waste Management	0.607		
Component 4: Economic		5.8%	9.1%
Local Product Marketing	0.735		
Economic Activity	0.704		
Employment Status	0.639		
Cost of Living	0.587		
Total variance		**63.1%**	**100.0%**

*Before rotation
Source: Own elaboration.

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INVITACIÓN PARA LA PRESENTACIÓN DE ARTÍCULOS

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Como medio de comunicación científica, ***Ara*** divulga los conocimientos teóricos sobre el turismo y sus técnicas de aplicación en países situados en ambientes naturales especialmente vulnerables para, de este modo, contribuir a favorecer y apoyar el desarrollo sotenible, la conservación y el avance del bienestar de su población y sus recursos naturales.

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