

Interferences generated on the well-being of local communities by the activity of online platforms for tourist accommodation

José M Martín-Martín. Faculty of Business and Communication. Department of Business. Universidad Internacional de La Rioja, Spain. Av. de la Paz, 137, 26006 Logroño, La Rioja josemaria.martin@unir.net Corresponding author

Juan F Prados-Castillo. Faculty of Economics and Business, Department of Applied Economics, University of Granada, Granada, Spain. z02jf78@correo.ugr.es

Juan de Dios Jiménez Aguilera. Faculty of Economics and Business, Department of Applied Economics, University of Granada, Granada, Spain. juande@ugr.es

Eva Porras González. Faculty of Juridical and Social Sciences, Department of Fundamentals of Economic Analysis, , Universidad Rey Juan Carlos, Vicálvaro, Spain. eva.porras@urjc.es

Abstract

The tourism sector can boost the economic and social development of entire cities while simultaneously triggering critical challenges to its own sustainability. Specifically, the additional stress imposed on residential neighborhoods due to the increasing number of tourist accommodations mediated online can compromise the social sustainability of tourism. This study focuses on the city of Barcelona (Spain) to shed light on crucial aspects of the impact of peer-to-peer accommodation platforms upon the well-being of its residents. A key contribution is that this work uses for the first time in tourism the Human Scale Development (HSD) approach. Among the many consequential findings, of particular interest to economists and policy makers are the fact that there is no economic sustainability without social sustainability, and that guaranteeing social cohesion and the permanence of a fixed resident population in tourist neighborhoods is essential. One additional breakthrough is the participants' strong viewpoint that a major roadblock to any progress is the lack of adequate regulation. In their opinion, any satisfactory legal framework should use participatory mechanisms to incorporate the neighbors' feedback over issues that affect their lifestyle. Last, the importance of establishing cooperation mechanisms between institutions, tourists, neighbors, and businesses was also forcefully emphasized.

Key Words: sharing economy, peer-to-peer accommodation; sharing platform, Airbnb, social sustainability, home-sharing, overtourism, urban tourism.

1. Introduction

The social dimension of sustainability has increasingly assumed a more prominent role in the literature over time (Dempsey, Bramley, Power & Brown, 2011). However, this attention is still insufficient particularly in works analyzing tourism competitiveness, which for the most part, do not include social dimension indicators (Guaita, Martín & Salinas, 2020; Salinas, Serdeira, Martín & Rodríguez, 2020). One reason for this, is that the tourism sector has prioritized economic growth over other needs. Consequently, the problems generated by this activity such as those associated with social conflicts among stakeholders, have been routinely overlooked (Martin, Guaita & Salinas, 2018). Overall, Europe has chosen simple strategies to develop the tourism sector, mainly by accepting pro-growth strategies which often exclude sustainability indicators as a measure of success (Russo & Quagliari, 2014).

Lack of attention towards the social sustainability aspect of tourism, at least as compared to that paid to environmental sustainability, contrasts with the increased scrutiny demanded by numerous collectives. Over the last decade, multiple voices have been raised pointing to the urgent need to consider the receiving communities' wants. In fact, the sustainable tourism indicator system of the International Tourism Organization (UNWTO) includes the social perspective explicitly (UNWTO, 2004). In 1987, the World Commission on Environment and Development (WCED) already defined Sustainable Development as the “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987:43). This document attributed equal importance to the impacts that development has on the economy, on the society, and on the natural environment. This perspective inspired the political guidelines agreement at the United Nations (UN) conference on Environment and Development in Rio de Janeiro in 1992, as well as those of ensuing symposiums on sustainability organized within the framework of the UN (Adams, 2009; UN, 1992; UN, 2012). Regarding this sector's competitiveness, one of the most widespread indicators is The Travel & Tourism Competitiveness Report (TTCR) published by the World Economic Forum. This work already singled out the importance of promoting sustainable development models capable of guaranteeing respect for both the environment and the local communities that depend on tourism in its 2017 edition (WEF, 2017).

The institutional recognition of social sustainability as a relevant objective (Guaita, Martín, Salinas & Mogorrón-Guerrero, 2019), and the increased pressure on tourist destinations, which often spur tourism-phobia feelings among the receiving communities (Martín et al., 2018), have resulted in growing attention to these values and dynamics. Given that peer-to-peer online platforms for tourist accommodation introduce tourist flows into residential environments, this tension has intensified concurrently with the penetration and use of these technological tools (Martin, Ostos & Salinas, 2019; Gravari-Barbas & Guinand, 2017). These platforms are a part of the set of activities known as the “sharing economy”, which refers to the shared use of underutilized vehicles, spaces, and other assets (Botsman & Rogers, 2010; Geron, 2013; Sacks, 2011). Guttentag (2015;

1193) describes them as: “essentially an online platform through which ordinary people rent out their spaces as accommodation for tourists”.

A considerable number of studies have looked into the far-reaching effects that this type of tourist intermediation systems have on tourist destination communities (see for example Quattrone, Prosepio, Quercia, Capra & Musolesi, 2016; Gunter & Önder, 2018; Gutierrez, García- Palomares, Romanillos & Salas-Olmedo, 2017). It is significant that many of these works have denounced meaningful alterations on the lives and local culture of residents in tourist areas, such as loss of social cohesion (Gallagher, 2017; Cocola, 2016; Martin et al., 2018a). However, even though the number of studies that describe the different impacts derived from this type of platforms grows, the literature on the perception of residents in tourist areas with respect to the interferences generated in their lives is scarce. Nonetheless, as an exception, recent works by Mody, Woosnam, Suess and Dogru (2020), and Yeager, Boley, Woosnam, and Green (2020) have looked into the perception that residents have on the impacts of this type of tourism. In their works, the authors stress the need to increase the number of theoretical contributions on this type of analysis.

Several authors have highlighted the importance of closing this research gap (Lyons & Wearing, 2015; Richardson, 2015; Gutierrez, et al., 2017). In this line, both Guttentag (2015) and Gallagher (2017) have asserted that the disruptive innovation in the tourism sector caused by this category of rental platform deserves to be studied further, particularly considering its unpredictable outcomes. Among the many other plausible benefits of further analyses, Cheng (2016) asserts that a better understanding of this plight could help public authorities improve legislation and design a roadmap to take advantage of the opportunities that may arise. This is even more likely considering the general assumption of material wealth and employment creation potential that is associated with the sharing economy (OECD, 2016). Furthermore, this potential would be reinforced should the established regulations be capable of promoting an orderly growth that respects the interests of the various stakeholders involved (Martin et al., 2019a). The fact that these activities provoke numerous conflicts among stakeholders implies the sector would greatly benefit from the additional attention the academic research community could grant (Cohen & Munoz, 2016). Therefore, knowledge of these interactions and conflicts should result in an active line of academic research.

This study attempts to cover the mentioned research gap and evaluate the perceptions of residents in tourist areas with respect to the impacts that the intense growth on tourist rental accommodations has on their social well-being. The need to shed light on the residents' perceptions has been highlighted by Guttentag (2015), McGehee and Andereck (2004) and Suess, Woosnam, Mody, Dogru and Sirakaya Turk (2020). These authors also underline the benefits of learning whether these perceptions are conditioned by the financial links between residents and the tourism sector. Thus, to fulfill these objectives, and for the first time in the tourism sector, we use the Human Scale Development (HSD) approach (Max-Neef, 1991). This theoretical framework puts human needs at the center

of development, and grants equal importance to economic, social, and environmental dimensions, emphasizing the interdependence among all three. HSD focuses on the importance of balanced relationships between society, the economy, and the environment. The satisfaction of human needs is at the core of this conceptual framework which proposes a participatory methodology to help communities and public authorities plan their development (Guillén-Royo, Guardiola & García-Quero, 2017).

This work offers a double contribution to the academic literature. First, it sheds light on the problems created for residents' well-being by the growth of tourist accommodation mediated through online platforms. And second, it chooses a novel procedure that takes human needs as a starting point, a methodology that has rarely been used for this purpose before. Specifically, the first contribution indicated was channeled through three research questions. RQ1: How do residents assess the changes in their well-being associated with tourist rental platforms? RQ2: What are the underlying factors that condition the attitude of the residents? RQ3: What actions could limit the negative effects on the lives of the residents?

This study centers around needs-based workshops in which residents living in the tourist center of Barcelona participated. Barcelona was chosen because it is one of the prime tourist hotspots in Spain and Europe, being a city that suffers from high tourist pressure in its historical center. This case study illustrates how the HSD approach is used to reveal the types of interactions that harm social sustainability. Also, this methodology helps to uncover possible interventions that can contribute to meet the needs of the neighbors, preserving social sustainability, and ensuring the viability of the tourist activity linked to these platforms. Therefore, in disclosing our findings, we contribute a unique perspective using a novel methodology applied to the tourism industry, which may be replicated in other destinations.

2. Tourist development and social sustainability

Growing pressure upon receiving communities results from the ease with which interactions are generated when tourist accommodation platforms are used (Russo & Quagliari, 2014). One important side effect is the additional strain that can push residents to abandon the main tourist areas seeking more livable spaces (Russo, 2002). In extreme cases, these gentrification processes can alter the profile of the residents and business activities located in these hard-hit neighborhoods (Gotham, 2005). Cocola (2015: 4) defines this phenomenon as “a process of socio-spatial change in which neighborhoods are transformed according to the needs of affluent consumers, residents and visitors alike”. The main effects associated with this process are the displacement of long-term tenants, rent increases, a shortage of rental property, and the loss of local identity (Edelman & Geradin, 2015; Guttentag, 2015; Gurran & Phibbs, 2017; Wegmann & Jiao, 2017; Postma & Schmuecker 2017; Richards, Brown & Dilettuso, 2019). Therefore, the excessive concentration of short-term rental apartments in some areas and the increase in rental prices that is associated with it, can serve as a trigger or enhancer of the

aforementioned gentrification (Richards, 2016). This would be the expression of the phenomenon known as "airbnbification" (Richards, 2016). The recognition of these phenomena has lead observers to infer that the activities related to tourism have great capacity to transform city centers, both in tangible and intangible ways (Gutierrez et al., 2017; Martin, Salinas, Rodríguez & Ostos, 2019).

Tourism generates complex and varied interactions with the environment in which it develops. In the academic literature, numerous studies have identified both positive and negative impacts associated with this activity (Puczko & Rätz, 2000). With respect to the negative aspects, Puczko and Rätz (2000) point out that an inadequate tourism development usually implies an increase in pressure on destinations, as well as negative changes in the socio-cultural and environmental characteristics of these (Martín, 2019). With respect to the positive ones, the intrinsic virtues in tourism are highlighted. As an example, this activity is considered environmentally benign and a viable economic alternative to other more damaging options (Doswell, 1997). Furthermore, tourism often draws attention to aspects that stimulate environmental conservation initiatives (Doswell, 1997), hence potentially contributing to Sustainable Development. However, there are also negative impacts inherent to the social and natural environment that should be identified and contained in as much as possible (Puczko & Rätz, 2000). The final balance and the magnitude of the impacts will depend on variables such as the volume of tourists, the activities carried out by them, the fragility of the environment, or the strength of the local culture (Roberts & Hall, 2001). Equally important are the way the tourism activity system is organized, the regulation of the sector, and the structured mechanisms available to adjust this activity to the needs of each of the stakeholders involved (Martin et al., 2019a; Fang, Ye & Law, 2016).

Indeed, the development of activities related to tourism can lead to positive and negative impacts on local communities (Youell, 1998). These are the so-called "tourism impacts" (Mathieson & Wall, 1982). From a broad perspective, the impacts can derive positive aspects for local communities such as: the generation of new employment opportunities for residents (Andereck & Nyaupane, 2011); the improvement and strengthening of the business network, the contribution to valuing and preservation of the local heritage (Andereck, Valentine, Knopf, & Vogt, 2005); or improvements in local identity and pride (Andereck et al., 2005). On the other hand, the impacts can also derive negative heterogeneous aspects. These incorporate a wide range of phenomena grouped into environmental, socio-cultural, and economic categories (Martin, Jiménez & Molina, 2014). Examples include: the effects on infrastructure congestion, price growth, increased alcohol consumption, environmental damage, greater generation of waste, and the alteration of the lifestyle of local communities (Martín, Salinas, Rodríguez & Jiménez, 2017).

The new ways in which tourism is organized have contributed unique opportunities, but have also brought interactions with local communities leading to novel impacts or variants of those observed traditionally (Ioannides, Röslermaier & Van der Zee, 2018).

Airbnb, Couchsurfing and Homestay are the best-known examples of this type of tourist accommodation platforms. Couchsurfing started in 2004 as a non-profit organization; however, in 2011 it changed its legal form to become a for-profit business. In 2008, Airbnb was founded as an online platform that charged a fee to enable users the opportunity to share spare spaces and all sorts of tourist accommodation solutions. According to Merrill Lynch, by 2020 Airbnb could account for up to 1.2% of the hotel offering and 3.6–4.3% of the inventory with an estimated 40–50% growth in annual listings (Heo, 2016). The expansion of online tourist accommodation platforms has generated debates about the legitimacy of companies such as Airbnb in several of the most-affected cities (Bort, 2014; Brustein, 2014).

The academic literature has described various benefits associated with this type of accommodation intermediation models. For example, visitors can enjoy a more authentic experience (Forno & Garibaldi, 2015; Sigala, 2017; OECD, 2016; Tussyadiah & Pesonen, 2018; Russo & Quagliari, 2016), and it becomes more plausible to improve the interaction with locals (Belarmino, Whalen, Kohl, & Bowen, 2017). Also, these platforms expand the variety of accommodation options available at affordable prices (Shaheen, Mallery, & Kingsley, 2012; Juul, 2015; Ioannides et al., 2018), and this reduction in costs may result in an increase in tourism (Zervas, Prosepio & Byers, 2014). Three other positive aspects are: that this alternative drives tourist spending to neighborhoods which have not benefited from these earnings before (Porges, 2013); that it is easier to start up a business in the framework of the collaborative economy (Nadler, 2014); and that this new type of accommodation offer increases the lodging capacity of destinations in peak times, thus completing traditional services (Juul, 2015).

However, even though the positive impacts are well-known, there is an increasing concern (Dredge & Gyimóthy, 2015; Queensland Tourism Industry Council, 2014) possibly due to the lack of planning associated with the disruptive and poorly regulated economic model linked to this sort of activity (Martin et al., 2019a; Nieuwland & van Melik, 2020). The analyses of the impacts derived from the sharing economy (SE) are incomplete, particularly those related to these types of lodging services (Guttentag, 2015). As pointed out by Cheng (2016: 67): “there appears scope for more research into the ecological, economic, and social impacts of SE”. The inquiry on Sustainable Development linked with these services has earned relatively little attention in the past. Nonetheless, in recent years the academic community has shown a growing interest in studying innovation processes in the collaborative economy and the sustainability realms (Martin & Upham, 2016). As a result, new works have been published contrasting the benefits and the risks inherent to these platforms for intermediated accommodation. Some of the findings point to the fact that even though the collaborative economy can increase the income of residents in tourist areas, it can also lead to the degradation of working conditions when the locals' earning capacity depends exclusively on these types of activities (Lyons & Wearing, 2015; Schor & Fitzmaurice, 2015). Evidence points to its impact on the salary level of hotel employees resulting in lower incomes (Suciu, 2016) and in the reduction of the occupation level of hotel accommodations generating layoffs

that are not balanced out by the hiring in tourist dwellings (Fang et., 2016). Recent studies have described other problems such as the increase in residential housing prices, evictions of long-term tenants, and lack of residential housing in tourist areas (Edelman & Geradin, 2016; Jefferson-Jones, 2014; Lines, 2015). The latter points to the evidence that investors groups purchase residential housing to convert it into tourist accommodation (Gurran & Phibbs, 2017). There have also been reports of discomfort and loss of social cohesion in traditional neighborhoods (Cócola, 2016; Gallagher, 2017) as well as added traffic, more noise in residential buildings, the appropriation of public space and the congestion of public areas (Gallagher, 2017; Gurran & Phibbs, 2017; Martin et al., 2017). In addition, changes have been reported in the perception of safety in residential neighborhoods (Suess, Woosnam & Erul, 2020). Additional consequences with impacts on society as a whole are tax evasion and unfair competition (Lyons & Wearing, 2015; Oskam & Boswijk, 2016).

The competition exerted on the traditional hotel sector has also been analyzed (Zevras et al., 2014; Choi, Jung, Ryu, Do Kim & Yoon, 2015). The creation of large companies capable of significantly increasing the flow of tourists implies an increasing power of influence in defining the legal framework (Martin et al., 2019a). New risks have also emerged as, under this new business model, it is now more complex to guarantee the personal safety of travelers and ensure problem-free economic transactions (Sigala, 2017). The reason for this is due to the fact that traditional roles of consumers and suppliers have been redefined, as well as the context in which the overnight stay itself is carried out (Cheng, 2016).

The need to expand research on the mechanisms of interaction between the users of the accommodations described and the communities in which they are located, as well as the importance of evaluating the impacts derived from these new business models, have been highlighted by numerous authors (Martin et al., 2018a). The fact that these platforms have introduced tourist activity in residential buildings and areas demands a detailed study of the social impacts generated. In this context, Martin, Upham and Budd (2015) point out the importance of establishing communication channels among members of the community to build resilient networks through empowerment. These interactions do not need to be solely negative. As John (2013) indicates, the introduction of activities linked to the collaborative economy in local communities could contribute to promoting values such as equality, mutuality, honesty, openness, empathy, and an ethic of care. It has also been postulated that these activities and the feeling of belonging to the community generates could help build social capital as people interact in the process of sharing through communication and could allow a more equitable distribution of goods and services (Martin et al., 2015).

In summary, it could be concluded that the sustainable development in the tourism sector should establish goals of improving the quality of life of residents, optimizing the economic benefits perceived by the local communities, and protecting the environment while offering a quality experience to the visitor (Bramwell & Lane, 1993; McIntyre,

1993; Park, Yoon & Lee, 2008; Park & Yoon, 2009; Martin et al., 2019b). Tourism development must be economically viable but also socially and environmentally sensitive (Puczko & Rátz, 2000). The participation and support of residents in the tourist area are essential for the sustainability of the tourism industry in any destination (Gursoy, Chi & Dyer, 2010). This support depends on the perception that citizens have with respect to the negative and positive impacts linked to tourism (Martin, 2019). Therefore, it is essential to learn about and understand the point of view of the local residents in relation to the negative impacts generated, so that through appropriate strategies, the community can be most supportive of tourism (Prayag, Hosany, Nunkoo & Alders, 2013).

3. Methodology and data

Conceptual framework

The HSD approach was proposed in the 1980s by economist Manfred Max-Neef and other experts to support endogenous development processes. This approach is based on three pillars: self-reliance, balanced relationships, and human needs satisfaction (Guillén-Royo et al., 2017). The first point refers to the concept of centrality of communities and the need to activate their endogenous development. The second, involves the necessity of maintaining balanced horizontal relationships between levels or dimensions of human activity. For example, among public powers, institutions and the economic sectors, or between the technology, the economy, and nature. The third pillar highlights the urgency of respecting and meeting human needs in any development process. This conceptual framework is associated with a methodological system based on participatory workshops (Max-Neef, 1991).

Human needs are not only understood as requirements for a good life, but also represent opportunities for personal and social mobilization that can support processes of social change. They are considered to have a socio-universal character (Alkire, 2002), meaning that they are shared by different cultures over time, even if they are not felt with the same degree of intensity at any given moment (Cruz, Stahel & Max Neef, 2009). Fundamental human needs are defined as the axiological needs for subsistence, protection, affection, understanding, participation, leisure, creation, identity and freedom, as well as with the existential needs of being, having, doing, and interacting. As per Max-Neef, there is no hierarchy of needs although some can logically precede others, as could be the case of the need for subsistence. Existential needs represent the ways in which needs are expressed. Therefore "being" refers to the attributes of individuals or groups, "having" concerns institutions, values, tools, and forms of organization, "doing" identifies collective and personal actions, and "interacting" links the characteristics of spaces and environments. The HSD needs approach is usually represented by a matrix in which the first column characterizes the nine axiological needs and the first row characterizes the four existential needs.

The thirty-six cells resulting from the intersection of axiological and existential needs identify the satisfiers: the ways of being, having, doing, and interacting associated with the fulfillment of needs. Satisfiers are the values, attitudes, norms, laws, institutional agreements, organizations, actions, and ways of using space, resources, and nature that define the needs for satisfaction in a specific context and that vary throughout time and cultures. For example, in relation to the fundamental need for subsistence, a sustainable community can be characterized by satisfiers such as: being cooperative, supportive, and caring (being); basic income schemes and organic farming activities (having); volunteering, respecting other community members and contributing to local initiatives (doing); and the availability of communal land and open flexible spaces for gatherings (interacting) (Guillen-Royo, 2016).

Modern capitalist societies, by contrast, may require sets of interlinked satisfiers different from those listed above. As Cruz et al., (2009) point out “the rise of modern free-market society, (as a new interacting milieu), requires for the members of society a full range of new satisfiers at the having level (money, property, credit, etc.), of being (consumer, owner, free to buy and sell, etc.) and doing level (shopping, acting 'rationally' in chrematistic terms, etc.) in order to satisfy their fundamental needs” (Cruz et al., 2009: 2023). A wide range of satisfiers can be found in societies, and these may have different capacities to meet needs. To clarify this point, Max-Neef proposed a classification with five groups of satisfiers. The first group consists of satisfiers that focus on meeting only one out of the nine fundamental needs (singular); the second considers satisfiers that simultaneously support the updating of more than one need (synergic); the third involves satisfiers which over-satisfy a particular need while they reduce the ability to meet other needs (inhibiting); the fourth encompasses satisfiers that confuse people into believing that a need is satisfied while in the long run, the effect is the opposite (pseudo-satisfier); and the fifth group represents satisfiers that prevent fulfilling a long-term need at the same time that they prevent reaching other needs (destroyers or violators) (Max-Neef, 1991). When societies are characterized by the satisfiers described in the last three groups, the fulfillment of personal and social needs is nullified, and the conservation and protection of the environment is threatened.

The relationship between destroyers, inhibiting satisfiers and pseudo-satisfiers, and environmental degradation was not addressed in Max-Neef's initial work. Recent studies have suggested that satisfiers such as pollution of water and soil sources, the effects of global warming in terms of droughts and floods, the loss of biodiversity, and the progressive erosion of green areas are related to other satisfiers. Some examples are authoritarianism, consumerism, and overconsumption materialistic values, hectic lifestyles, marginalization, lack of institutional transparency, and limited political participation (see Guillen-Royo, 2016; Smith & Max-Neef, 2011 for further references). Therefore, from the need's-based perspective, the satisfiers that characterize the economic, social or environmental sustainability, or lack of sustainability, cannot be understood in isolation, but should be explored in terms of their interconnections. In this context, decisions should lead to improving aspects such as energy efficiency, the way in

which decisions are made, the rhythm of daily life, and the values that inspire personal development and social coexistence (Guillen-Royo, 2016). Even though this conceptual scheme is solid both conceptually and methodologically, Max-Neef's concern was that this theory should not become static but that it would stay flexible to generate frameworks fitted to the professional requirements of each task (Guillen-Royo et al., 2017).

Max-Neef upheld the belief that collaborating in workshops designed to support participatory processes in communities was potentially enriching for the members of such communities. This idea was sustained by surmounting worldwide evidence (Smith & Max-Neef, 2011). The authors suggested the use of empty matrices in the participatory workshops designed to boost these participatory processes in the hopes of improving the situation of these communities and their sustainability. An example of such matrix is represented in Table 1.

Table 1. Matrix of needs and satisfiers

	Being	Having	Doing	Interacting
Subsistence				
Protection				
Affection				
Understanding				
Participation				
Idleness				
Creation				
Identity				
Freedom				

Source: Max-Neef (1991: 32-33).

Study context

The city of Barcelona is located in northeastern Spain. With a population of 1.6 million (National Statistics Institute, 2020a), and a metropolitan area of 5.5 million inhabitants, Barcelona is the second-most populated city in the country, representing a highly crowded area with a density of 158.3 inhabitants per hectare (Gutierrez et al., 2017). Barcelona is the capital of one of the richest regions in Spain, where tourism is at the core of the economy representing 15% of its GDP and 9% of its employment (Barcelona City Council, 2017). Tourism in Barcelona grew considerably after the celebration of the 1992 Olympic Games. In 1990, the city was visited annually by 1.73 million tourists, while in 2019 the number of people staying at hotels exceeded 9.4 million (National Institute Statistics, 2019). Nonetheless, if we add those lodged in other types of establishments, the arrivals sum to 13.9 million per year in the metropolitan area, and 20.2 million in the area of the joint tourist destination. These figures only include visitors who stay overnight (Barcelona City Council, 2020). Considering international arrivals alone, Barcelona is the 4th most visited city in Europe (Lonely Planet, 2020), and the 17th in the world (Hosteltur, 2020). The success of this city as a tourist attraction is based on the wide-

range of resources it can offer including cultural tourism, conferences and meetings, sun and beach, shopping, sports, and so on.

In recent years, the activity linked to tourist accommodation platforms has significantly increased the city's lodging capacity. Two elements have come together to alter the organization of tourism in this city: the expansion of tourist lodging intermediated by individuals, and the growth of low-cost flights (Martin et al., 2018a). These have generated a new visitor profile, which interacts with the city in a different way (Abril-Sellarés, Azpelicueta & Sánchez-Fernández, 2015).

Together with Berlin, Barcelona has been the city with the highest growth in the number of tourist accommodations (Europa Press, 2017). In 2019, the area that delimits the tourist destination of Barcelona had 331,747 lodgments: 58,583 of the 149,467 that concentrated in the city, were online intermediated tourist accommodations (Barcelona City Council, 2020). In this city, only 50.5% of the tourists who stayed overnight used hotels or apart-hotels, according to the Barcelona's Tourism Activity Report (Barcelona City Council, 2016). Therefore, the new models of tourism organization coincide with an increase in the pressure exerted upon the city by tourism (Gutierrez et al., 2017). In terms of overnight stays, Barcelona registers a ratio of 9,807 nights per 1,000 residents, almost twice the European Union (EU) average (5,209 nights per 1,000 inhabitants) (Barcelona City Council, 2016). As a result of the stress that these trends cause upon the resident population, an area highly dependent on tourism has developed a strong feeling of rejection towards this sector. Barcelona, Berlin, and Venice are the three European cities suffering the worse overcrowding problems. This has provoked feelings of aversion from the local population, not only due to the pressure of tourism but also because of its impact in residential areas (Europa Press, 2017). With respect to Barcelona, many factors have contributed to this rejection or "tourism-phobia"; one example is the increase in the price of housing. Between 2013 and 2018 the average price of rentals in Barcelona grew by 36.4% (Martin et al., 2018a). Also, Cocola (2016) points out to the loss of social cohesion in some of the city's neighborhoods and even an alteration of the local culture, a trend shared by other cities throughout the world (Gallagher, 2017). In the 2017 Barcelona's biannual barometer, its residents singled out tourism as the city's biggest problem. Furthermore, according to the 2017 Barcelona's Tourism Activity Report (Barcelona City Council, 2017), the number of residents claiming that tourist activity in the city has peaked went from a 25% in 2012 to a 48.9% in 2016. In parallel, acts of vandalism linked to the rejection of tourism has begun to occur. Among other, these included: graffiti, assaults on tourist buses, and demonstrations which have occurred mostly in Barcelona but also in the Balearic Islands (Martín, Rodríguez, Zermeño & Salinas, 2018b).

Methodology and data

This study proposes the use of a novel framework to achieved the described purpose. As detailed earlier, this framework expands the knowledge of the interactions between tourists and locals considering the new forms of tourism. The data collection in Barcelona

was carried out in two phases during September 2019. The first phase consisted on a telephone survey questionnaire to city center residents. This inquiry included questions on demographic and socioeconomic characteristics. In this questionnaire, the citizens were also asked about their willingness to participate in one of the HSD workshops. A total of 269 participants responded to the questionnaire and 39 of those answered positively to participating in the workshops. Following earlier studies using the same methodology, (see Guillen-Royo, 2016), the objective of recruiting between 30-40 participants was set, so that each of the two initial workshops consisted of 15 to 20 individuals. That is because a larger number of participants would create operational problems. The profile of those attending the HSD workshops did not differ from the profiles obtained in the prior survey (Table 2). Therefore, no additional adjustments in the sample obtained were needed. The volunteers became the members of the working groups. Had it been required, a representative sample of the population profile would have been randomly generated. However, this was not necessary. The neighborhoods of Barcelona in which the telephone survey was applied, and thus the areas of residence of the participants in the workshops are: El Raval, Barrio Gótico, La Barceloneta, Sant Pere, Santa Caterina i la Ribera, Sagrada Família, Poble Nou, Vila de Gràcia, Dreta de l'Eixample, Poble Sec, Sagrada Família, l'Antiga, Sant Antoni, Nova Esquerra and Fort Pienc. The selection of these neighborhoods was made taking into account the presence of homes offered on Airbnb in the city of Barcelona, so that the neighborhoods with the highest activity were considered. Volunteers' participation was encouraged and thanked with the reimbursement for their metro and/or bus travelling expenses. In addition, they were offered catering services in the break prior to the third meeting, and they were granted a certificate of participation. Most of these volunteers declared that their main motivation to cooperate was the opportunity to comment on matters that affected their lives, that of their family members and, in general, the society in which they lived.

Table 2. Main characteristics of the participants in the study.

Characteristics	Survey participants	Workshops participants
Men	42.0%	45.0%
Women	58.0%	55.0%
18-30	27.1%	30.0%
31-45	23.9%	22.0%
46-65	31.2%	28.7%
Over 65	17.8%	19.3%
Primary education	5.2%	2.90%
Secondary education	45.8%	44.2%
Higher education	49.0%	52.9%
Unemployed	5.4%	7.2%
Monthly family income <1,000€	4.9%	6.9%
1,000€ - 2,000€	48.3%	45.1%
2,000€ - 5,000€	36.2%	37.8%
> 5,000 €	10.6%	10.2%
Born in Barcelona	54.3%	61.1%
Resident in Barcelona >10 years	89.4%	91.6%
His/her income depends in part on the tourism sector	15.4%	17.7%

Source: Own elaboration. April 2020.

The second phase of data collection revolved around three Human Needs-Based participatory workshops. These workshops were planned aiming to: 1) generate a negative matrix -a matrix including those satisfiers labeled as inhibiting, destroyers, and pseudo-satisfiers, which hamper the fulfillment of needs; 2) define a utopian matrix -a matrix including those synergic and singular satisfiers that can promote the optimal fulfillment of needs; and, 3) identify the bridge that would allow society to progress towards the utopian scenario (Guillen-Royo, 2016). Participants had to choose between joining the first or second workshop, but everyone had to participate in the third. The reason was to prevent people in the second workshop using the information from the first to construct a utopian matrix that was simply the opposite of the negative one.

The first step consisted in defining the negative matrix. Here, a poster-size copy of the matrix was used in such a way that little by little stickers with specific proposals were added to each of the 36 cells. This process was supported by "facilitators" who guided participants with respect to the meaning of each cell in accordance to the theory, but who could not make their own proposals or formulate ideas. Upon completion of this step, the facilitators coordinated the participants so they reached a consensus on which were the one or two most representative items for each cell. This process was repeated to build the utopian matrix. Following Guillen-Royo (2016), the research team analyzed the utopian matrix prior to the last workshop to identify common categories that could summarize the synergic and singular satisfiers suggested by participants. These themes or categories of satisfiers were then proposed as those that define a society with optimal needs satisfaction and were used as the grounds for the discussion in the third workshop. This analysis was performed during the break between sessions, when no participants were present. The objective of this preliminary analysis was to provide general guidelines to conducting the last session. Copies of the negative and utopian matrices were distributed among the participants of the third workshop, to allow a choice of information to be made when they analyzed the classification and offered their opinion on the suggested categories. To promote an in-depth discussion on synergic bridging satisfiers that would allow society to progress towards a utopian scenario, the 39 participants in the latter workshop were divided into two groups, both of which addressed two of the proposed categories. In this case, the focus was on the formulas proposed to reflect mechanisms, supports, and practical tools - endogenous and exogenous - available and realistic, defined as means to reach the ideal situation. Both groups used a system similar to that described above. With a poster size matrix representation, the initial ideas were added by placing stickers. Then, a discussion followed and work was done to reach consensus. In order to generate strategies that could make the synergic satisfiers emerge, this debate was articulated around the forms of Being, Having, Doing and Interacting. In the following section, we present the analysis of the satisfiers analyzed in the workshops.

In this process, the work of the facilitators is essential. At first, they presented the objectives of the fieldwork in a simple way and the nine fundamental human needs (i.e., protection, subsistence, affection, participation, understanding, idleness, creation, identity and freedom) as well as the four existential categories (i.e., having, being, doing

and interacting), through examples applied to an area other than tourism (in this case the examples referred to environmental pollution). Following the methodological basis of this proposal, “Being would be identified by adjectives (e.g., chauvinist, authoritarian, compassionate, inclusive, open, etc.), Having by nouns concerning values, laws, traditions, tools or institutional agreements (e.g., basic income, greed, formal education, repressive police forces, non-independent media), Doing by verbs (e.g., cooperating, excluding, sharing, discriminating, etc.) and Interacting by the characteristics of spaces or environments (e.g., free public parks, surveillance cameras, information in indigenous language, sports facilities, spaces for creativity, etc.)” (Guillén-Royo, 2016: 65). In a second phase, the facilitators presented the objective of each matrix, and last they presented the information that should be expressed in each cell. The latter was done right before starting to work with a new cell in order to keep concepts fresh. The facilitators are researchers who know this methodology and its conceptual framework in depth. The definition of the consensus was carried out after a brief debate, once several ideas had emerged to complete each cell. Therefore, it was required that the participants reach a consensus before completing the work associated with each cell, trying to minimize interference from researchers.

4. Results

Identification of satisfiers that limit and enhance Sustainable Development

This section presents the analysis of the satisfiers gathered from the negative and utopian synthesis matrices, taking into account the three contexts suggested by Max-Neef (1991:18). The contexts are: (a) oneself (Eigenwelt-the individual level); (b) the social group (Mitwelt-the community level); and (c) the environment (Umwelt-the societal or ‘governance’ level). These three levels will be considered to illustrate the potential focus of public policies (Jolibert, Paavola & Rauschmayer, 2014). However, this work does not center on the analysis between levels or contexts, but on the interconnections between satisfiers.

The negative matrix summarized in Table 3 shows the satisfiers that hamper the fulfillment of the residents' needs, according to their own reports. This matrix describes a society characterized by the loss of quality of life and by the degradation of the social structures due to the appropriation of neighborhood spaces by tourists and the activities aimed at these. At the individual level, individualism, lack of cooperation, or even certain fears condition the citizen's vision of the process of degradation of their environment. These individual feelings connect with a social perspective in which three forces of transformation stand out: economic interests distant from social dynamics, the disconnect of citizens and the regulation and planning processes that affect them, and the loss of neighborhood cohesion. The environmental aspect was introduced as an element of debate in the dynamics of the workshops. However, the participants did not clearly associate the growth processes of tourism with the environmental pressure. This connection only occurred when the lack of quality public spaces at the residents' service

that had not been appropriated by tourism and in which there was a damaged social interaction, was pointed out to them.

Table 3. Negative Matrix

	BEING	HAVING	DOING	INTERACTING
SUBSISTENCE	Individualist, closed	System that benefits large investors	Individualistic behaviors	Loss of population and local commerce
PROTECTION	Fearful of interactions	Evictions of residents	Lack of proximity police	Police indifference to street and building noise
AFFECTION	Individualist	Lack of neighborhood associations	The network of affection between neighbors is lost	Interactions become temporary & short-term
UNDERSTANDING	Vulnerable	Neighbors do not intervene in regulation	Unproductive protests and acts of vandalism	Disconnection of regulation with the needs of neighbors
PARTICIPATION	Selfishness	There are no channels to create community	Scarce organization capacities of residents to maintain the essence	Superficial relationships with tourists
IDLENESS	Dissatisfied	Lack of resident-oriented spaces and activities	Reduction of social leisure	The spaces are geared to tourists rather than to citizens
CREATION	Standardization	Loss of cultural identity	There is no implication in the definition of activities	The authentic is replaced by the commercial
IDENTITY	Independence	Loss of local identity	Places are stereotyped	The commercial replaces the social
FREEDOM	Depression	Loss of lifestyle	Alteration of social environments	Discomfort in community life

Source: Own elaboration. April 2020.

With respect to the singular and synergic satisfiers discussed in the second workshop, the analysis carried out by the researchers uncovered three categories of satisfiers. These are presented in the summary utopian matrix in Table 4. The first category of satisfiers relates to the need of keeping a cohesive community and to the creation of meeting spaces. The second refers to the need of maintaining the identity of the neighborhood. And the third, looks into the interconnection processes, either between citizen and legislators or between citizen and tourists, in a framework of respect to the needs of each party and to the benefits that each stakeholder can derive. These categories encompass the vision of a society that balances the respect for the life of the locals and the openness to an economic activity generally valued as positive.

Table 4. Utopic Matrix

	BEING	HAVING	DOING	INTERACTING
SUBSISTENCE	Proactive	Preserve the family residency	Contain the increase in housing prices	Maintain resident population
PROTECTION	Solidary	Avoid speculation	Commercial activities in residential areas	Generate social cohesion
AFFECTION	Empathic	Neighbors and family networks	Improvement of public spaces	Interaction activities with tourists
UNDERSTANDING	Involved	Neighborhood information	Consider residents' opinion	Interaction with tourists
PARTICIPATION	Active	Spaces for communal activities	Participation in the making of the regulation	Effective channels of participation
IDLENESS	Committed	Maintain resident-focused services	Local leisure opportunities	Leisure proposals from the community
CREATION	Happy	Have cultural spaces	Creation as a link in the community	Visitor attraction based on culture
IDENTITY	Proud	Maintain the essence of the neighborhood	Keep the neighborhood local commerce	Introduce tourists to local commerce
FREEDOM	Satisfied	Possibility of choosing to live in the neighborhood	Guarantee the generational replacement	Maintain daily routines

Source: Own elaboration. April 2020.

The first category of satisfiers turned out to be by far the ones that raised the most concerns among residents. From an individual point of view, the need to generate collaborative, caring, and committed attitudes that translate into greater fulfillment and personal satisfaction is highlighted. Part of this process is associated with guaranteeing the permanence of neighbors, ensuring the generational replacement, and maintaining a community based on daily routine relationships, interactions among individuals and between these and neighborhood commerce. An important component in this category is the need to ensure the availability of meeting areas at the service of the citizen. These spaces would guarantee satisfying that the individual needs for interaction and accompaniment are fulfilled through the social activity that secures them. As a key fact, residents point out that the planning of these spaces should not focus on tourists, and that their use is not privatized with this excuse, but rather that it responds to neighborhood needs, even if the spaces are then shared with the visitors.

The second category concerns the identity of the neighborhood, and particularly stresses the commercial aspect of the activities proposed to be displayed in its environment. Here, the participants defend the need to protect local commerce, to maintain the identity elements of the neighborhood, to avoid the replacement of traditional activities, and even

to prevent residents actions leading to a "theme park" model that results in a facade without real human content.

The third category deals with the need to guarantee interactions that mobilize citizens. In this dimension, the first concern centers on the importance of considering the voice of citizens structured through neighborhood associations. This voice is expected to be particularly relevant in planning and legislation processes; specifically with respect to the regulation of tourist homes, in the creation of common spaces, in the definition of mobility, and in the promotion of local commerce. In the second place, the importance of tourism in economic terms and in cultural enrichment is recognized, and for this reason it is pointed out that interaction between residents and tourists based on mutual respect, should be encouraged.

Synergic bridging satisfiers: towards socially sustainable development

The last workshop dealt with specific synergic bridging satisfiers that could make the connection between the negative matrix and the utopian matrix. Following Max-Neef (1991) the participants in this workshop discussed these bridging satisfiers in terms of either their endogenous or their exogenous character. This process required the participants' assessment of the community's capacity to propose satisfiers without external help (endogenous). If the local groups turned out to be incapable of performing such task, then it was proposed that experts, policymakers or organizations that can contribute to the design of satisfiers (exogenous) should be identified and engaged. In the analysis that follows (Table 5), we differentiate the individual, community, and social context in which satisfiers are expressed.

Starting with the individual context, participants believed that to achieve the proposed goals each resident should first adjust its own attitudes and behaviors; the reason is that the sum of the individuals' behaviors is the main axis and the key engine of social transformation. Participants pointed out that promoting social participation and interaction is essential to unite the community. To this end, they suggested that neighborhood associations receive funds directly from the city council. In this way, these organizations can run their own activities, meetings, projects to better the neighborhood, and so on. This would contribute to improving the socialization of citizens. In this sense, external help is required to define the correct control and participation mechanisms.

Table 5. Summary of harmful, synergic and synergic bridging satisfiers in Barcelona

Workshop 1. Negative matrix. (Inhibits, pseudo-satisfiers and destroyers)	Workshop 3. Synergic bridging satisfiers.	Workshop 2. Utopian matrix (synergic satisfiers and singular satisfiers)
Population loss as a result of speculation and the conversion of homes into tourist accommodation	Improvement of the regulation agreed upon with neighborhood associations.	Maintain cohesive local communities, guaranteeing generational replacement
Loss of tranquility in residential environments and alteration of quality of life	Reduce the pressure of tourist housing in residential areas.	Foster the identity of the neighborhood, and proximity activities
Loss of social cohesion and interactions that generate the social network	Create codes of conduct for tourists. And promote more respectful tourism models.	Interaction with tourists based on mutual respect mechanisms.
Lack of spaces, commerce and policies at the service of the citizens	Promote social interaction.	Participation infrastructures, socialization that include tourists.
Disconnect between neighborhood needs and regulation	Creation of public spaces at the service of residents' needs.	Involvement of the residents in decision-making processes.

Source: Own elaboration. April 2020.

The community context is directly related to the issues discussed above. In this case, the bridges defined are based on the creation of spaces available to citizens and not privatized with commercial excuses (bar terraces in public squares, paid museums, spaces designed for passing individuals, etc.). It is proposed that these elements become the scenarios of associative policies. The participants vehemently exhort the need to establish a permanent population that will promote a natural generational change in the community. To this end, they suggest setting maximum quotas for tourist homes in each neighborhood as well as giving voice to residents' associations in tourism legislation. Furthermore, albeit unsure of how to go about this goal, another recommendation is to structure policies that promote local businesses and commerce of proximity that is not geared to tourists needs. With respect to the regulation of tourist accommodation, several novel ideas are proposed: limiting tourist apartments to the first floor of buildings to minimize discomfort; a system of points that communities can use to report noise and discomfort and that will help promote the automatic withdrawal of the tourist housing license; and the possibility that tourist lodgings are only permitted in buildings intended for that purpose exclusively.

Last, with respect to the society dimension, the proposals are very focused on the tourism model. Consistently, three lines of action are proposed to help move from a negative model to the utopian matrix. The first of these proposals, relies in the clear commitment of the public sector to promote more respectful models of tourism. As an example, citizens directly point to alcohol and party tourism. They also indicate that load capacities should be specified at the neighborhood level, and that maximum inflows distributed throughout the year should be set. They advocate that the neighborhoods should be treated as monuments, in which the number of visits - in this case, overnight stays - are controlled

to avoid deterioration. Lastly, they propose that codes of good conduct for tourists are created and that resident-tourist interaction events are promoted to generate greater empathy between both groups.

5. Discussion and conclusions

Contrary to what could have been expected of a context highly dependent on tourism, the promotion of this activity or the need to preserve it was barely been taken into account. Even though the income of a large proportion of the participants in the workshops depended directly on tourism, the problems they prioritized were related to the direct damage that these activities provoked in their communities, preventing basic needs from being met. This is in line with Martín et al. (2018a) conclusions. Following the simile of environmental sustainability, the participants stressed that if tourism is not socially viable, the climate of conflict generated will damage this activity at the end. From the discussions generated in the workshops we can extract several distinctly significant conclusions. First, it is particularly relevant that in improving their social situation residents credit a key role to the personal behavior, attitudes, and individual involvement of locals. In this context, they attribute a predominant role to the maintenance of the cohesion of the neighborhoods, in their different aspects. The aforementioned aspects affect the dimensions of sustainable development - economic, social and environmental-, although the latter has less importance in this urban environment. Therefore, with respect to RQ1: "How do residents assess the changes in their well-being associated with the use of tourist rental platforms?" some conclusions can be highlighted. First and foremost, the participants clearly point out to the damage done to social structures, which leads to changes in their well-being. These changes imply a loss of cohesion in society and the promotion of individualism. The importance that residents attribute to social cohesion has been described in previous works (e.g., Yeager, Boley, Woosnam & Green, 2020). The findings showed a more intense concern with respect to the social damage than to the economic effects of the platforms, in part because the latter are considered triggers for the social damage that ultimately occurs.

RQ2 asks: What are the underlying factors that condition the attitude of residents? The results show how the rejection of tourism is rather a derivative of a lack of planning, and a lack of containment of the negative impacts it generates, therefore residents ask for more involvement from policy-makers, albeit taking into account the voice of local communities. Another conditioning factor of their attitude mentioned is the breakdown of the balance between legitimate economic interests and respect for the life of the locals. Citizens have acknowledged and valued the positive impacts associated with this kind of accommodation service. Despite this, they also call for a fairer balance between their personal interests as neighbors and those of the owners. This is in line with the findings of Nunkoo & So (2016), Mody, Suess & Dogru (2019) and Suess, Woosnam & Erul (2020). A change in attitude could be achieved by promoting citizen participation in the regulatory processes if this implies the creation of regulation models based on mutual respect, and on the preservation of the local identity, traditional activities and the cohesion

in the neighborhoods. It has been highlighted that when residents perceive harm to themselves or their communities' well-being, there will be a rejection of both these platforms and the tourist activity as a whole. This is in line with Garau-Vadell, Gutierrez-Tano, and Diaz-Armas (2018), Suess, Baloglu and Busser (2018) and Uysal, Sirgy, Woo and Lina (2016) findings.

Finally, RQ3 asks: What actions could limit the negative impacts on the lives of residents? The workshop geared to the definition of corrective measures was really productive, and aside from the information summarized in this work, many nuances, ideas, and useful perspectives for public planning were uncovered. Hence, this methodology should be replicated in tourist environments suffering from high pressure. Following Andersen and Siim (2004: 3), citizens' empowerment can be defined as “the process of awareness and capacity-building, which increases the participation and decision-making power of citizens and may potentially lead to transformative action.” It seems that this awareness is clear among the citizens of Barcelona; that consciousness justifies the demand that the voices of the associations become more relevant, even though the need to improve neighborhood cohesion is also pointed out as a previous step. A number of studies support the idea that the empowerment of residents and their active participation in decision-making will condition their support for these activities and their perception of the impact of those on their lives (Mody, Woosnam, Suess & Dogru, 2020; Yeager et al., 2020). Institutionalizing neighborhood participation in decision processes is a synergic satisfier supporting people's empowerment. In the process of containing the problems derive from excessive tourism pressure, cohesion, and neighborhood participation are found to be as important as the regulation of the tourism sector itself. It is interesting to analyze the way in which satisfiers across contexts (personal, societal, and environmental) and sustainability dimensions (economic, social, and environmental) are connected. Understanding these connections, and how they should be cared for and delivered, is a basic aspect of solving problems that affect local communities. It is interesting to highlight some specific proposals or needs mentioned. For example, great importance has been attached to maintaining neighborhood routines, generational replacement, and the interactions among people in public spaces. In summary, the increase in tourist pressure on urban centers and the increasing influx of tourists into residential environments that tourist accommodation brokerage platforms enable, has generated problems of considerable importance for citizens. This obviously complex situation requires the consensus of the agents involved in the development of tourism. Methodologies such as the one presented here have helped to systematize citizen sentiment, and to define lines of improvement and action to achieve a sustainable situation for local communities that guarantees the viability of an economic activity as important as this one. Therefore, a clear public policy recommendation is offered: in order to systematically collect citizen sentiment communication channels with local communities should be improved. Improving neighborhood cooperation networks would be the first step on a path that would culminate in an update of the regulation so that it integrates the needs of citizens. In this sense, residents have expressed the need for some type of institutional external help that allows the creation and maintenance of structures of cooperation and

participation in the regulatory processes. Citizens have paid special attention to the final expression of some problems. For example, they have expressed the importance of guaranteeing generational change and the routines within the neighborhood. This implies reflecting on policies for access to housing, controlling the density of tourist apartments in each neighborhood, and promoting the preservation of traditional activities. These concerns are in line with Martin et al. (2018a) findings. They have also expressed the importance of guaranteeing coexistence in residential spaces. In this sense, imaginative solutions are proposed such as point systems linked to the continuity of a license, limiting tourist dwellings to the first floor of buildings or to independent buildings. Public authorities should take up some of these ideas and proposals in future regulatory processes. This study should be replicated in different contexts, since it is understood that the particular nature of each social context can influence the results obtained. The repetition of the study will help to understand the different citizen attitudes towards this context and the influence of the environment on this attitude.

The interpretation of the results must take into account one key limitation of this study which should be highlighted: the context. That is because one ought to keep present the environment of high tourist pressure as well as the specific model of social relations. This study should be replicated in different contexts, since it is understood that the particular nature of each social context can influence the results obtained. Therefore, the main limitation associated with the current study offers an opportunity for future research. It is recommended then, that other fieldworks of equivalent characteristics are performed in cities with less tourist pressure, in rural environments, coastal destinations, and in tourist destinations with a different model of social relations than the one ruling in Barcelona. The repetition of the study will help to understand the different citizen attitudes towards this context and the influence of the environment on this attitude. In addition, this study assumes three constraints associated the methodology used (Guillén-Royo, 2016). First, it is the “inner dimension”, which refers to the excessive influence that certain marginalized portions of the population could have when trying to reach groups' conclusions. The second limitation refers to the anticipated frustration that may condition working groups when they expect their proposals will not be considered or will be diluted. Finally, there are problems in articulating public policy recommendations from the point of view of the HSD perspective. No specific “recipes” have been developed to help articulate different levels of governance to organize a transition towards sustainable development around the indicated principles.

In addition to replicating this work scheme in other contexts, a specific analysis of some of the conclusions and insights issued by the work groups could shed further light over different aspects of this work. This extension should use quantitative techniques, so that the number of subjects could be expanded to reinforce or refute the conclusions of this work. We do not recommend a direct translation of the methodology used in this work to a quantitative analysis, as an adapted framework has not yet been developed. This is in itself a challenge for the future. Applying this methodology through a survey-based

process could bring some advantages, even though the problems to be resolved in this pursuit are numerous.

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