Post-COVID-19 recovery of island tourism using a smart tourism destination framework

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Abstract

COVID-19 has caused an unprecedented global crisis. Tourism has been one of the industries most severely affected. The recent COVID-19 outbreak has exposed the fragility of islands that depend on tourism, especially those built around mass tourism. For these islands that are highly dependent on external tourism, basing the recovery on proximity tourism is not a valid option. In order to find a solution for these destinations, the available literature and proposals on recovering tourism after the COVID-19 crisis were reviewed and framed in an integrated smart tourism destination framework that was proposed. These actions were then validated using a Delphi method with 36 participants from all the stakeholders in the island of Gran Canaria, Spain. The most agreed-upon actions regarded developing new business models around tourism and new sectors of economic activity, ensuring the health and safety of those involved in tourism, helping tourism companies financially, and explaining the situation of the destination in the origin markets. The results demonstrated that, far from the rhetoric sometimes associated with smart tourism destinations' proposals and actions, using concrete and specific actions oriented to specific cases can provide a valuable roadmap for destination management, crisis management preparation, and post-crisis recuperation.

Keywords: post-COVID-19, smart islands, smart city wheel, smart tourism destinations wheel, smart island

1 Introduction

COVID-19 has caused an unprecedented crisis. Its impact on every economic sector, and especially on travel and tourism, has been massive. In 2020, the number of international tourist arrivals decreased by 74% (UNWTO, 2021a) while the forecast for 2021 remains in a range that varies between 55% and 67% fewer international arrivals than in 2019 (UNWTO, 2021b).

As borders reopen, several simultaneous necessities must be addressed, such as the need to recover tourism as rapidly as possible while guaranteeing the health of tourist and residents and trying to save businesses from shutdowns. Thus, there is a need to order the possible actions from a comprehensive perspective. The smart tourism destination (STD) framework can be an appropriate tool for this aim.

While the idea of STDs was originally associated with the implementation of information technology (IT) in destinations, the concept has evolved and currently considers IT as just a base for the development of many areas in the destination (Baggio et al., 2020). Authors mention such areas as leadership, entrepreneurship and innovation, social capital (understanding the development of collaborative networks), human capital (Boes et al., 2015; Del Chiappa & Baggio, 2015), mobility, resource availability and allocation, sustainability, and quality of life (Gretzel, Sigala, et al., 2015). Smart destinations have been identified as a new paradigm for destination management (Ivars-Baidal et al., 2019).

The STD framework and implementations have received criticisms, even from within academia, for failing to address social issues (Coca-Stefaniak, 2020), for being too technologically oriented, for failing to deliver its main objectives (Femenia-Serra & Ivars-Baidal, 2021), and for lacking a future-oriented perspective (Gretzel & Collier-de-Mendonça, 2019). Recent research has discovered better development in the technological areas of STD than in others (Ivars-Baidal et al., 2021).

The literature has already explored the use of STD implementations to enable crisis management (Gretzel & Scarpino-Johns, 2018). STDs are very well suited for these types of situations, as STDs allow for knowing where tourists are and communicating with them (Ordoñez de Pablos et al., 2015; Schroeder et al., 2013), identifying available resources than can be allocated if necessary by mechanisms such as sharing accommodation options (Hajibaba, Karlsson & Dolnicar, 2017), and enabling adaptative governance by choosing the right combination of top-down and participatory governance as required at each step (Gretzel et al., 2018; Lalicic & Önder, 2018).

Among tourism destinations, the case of certain islands is especially relevant. For many islands, tourism based on international visitors accounts for a large percentage of the total gross domestic product (GDP). This is, for example, the case of Small Island Developing States (SIDS) (Gu et al., 2021; Hampton & Jeyacheya, 2020) and of islands that belong to developed countries, such as the Canaries, the Balearic Isles, Sardinia, and Sicily (Moncada et al., 2010). The challenge that COVID-19 poses to these islands and archipelagos is substantial (Gu et al., 2021). Until lockdowns and closures disappear and tourists regain confidence in travelling, these islands will suffer significantly. For such islands, proposals based on proximity tourism do not appear feasible.

Islands fit with the concept of STD since, in many cases, the destination encompasses the whole island. This is, for example, the case regarding the island in which this research is applied: Gran Canaria, in Spain's Canary Islands. Although Gran Canaria includes several areas that could be considered independent destinations (e.g. Maspalomas, Playa del Inglés, and the main city of Las Palmas de Gran Canaria), the island itself is a destination, as is the case with many other islands (e.g. Ibiza, Sicily). Gran Canaria has almost 900,000 inhabitants, and was receiving, before the COVID-19 crisis, more than 4 million tourists per year, mainly from the Nordic countries (Denmark, Finland, Norway and Sweden), Germany and the United Kingdom. Gran Canaria can be analyzed from a global perspective that includes governance issues and other economic sectors.

In this manuscript, the areas that a comprehensive and complete STD framework must consider are defined using a literature review of STDs and smart cities, which are the basis of many STD concepts. Then, an assortment of actions oriented to the recovery of island destinations in the post-crisis management phase are identified. These actions originate from documents by several scientific and business associations as well as from talks and conferences that were delivered during the pandemic. These actions were mapped against the areas of an STD framework to organize them and validate them with 36 tourism experts by means of a Delphi method.

Although this research has been oriented to the case of island destinations, most of the actions proposed as well as the STD framework can be used in most tourism destinations. However, some of the proposed actions are specific to the case of islands, where the entry of tourists is more controllable and the definition of a tourism destination is clearer than in other types of destinations.

2 Literature review and framework development

Smart is generally defined as intelligent, which is the ability to learn and think quickly and show good judgement. Thus, when applying the concept of smart to devices and artifacts, smart should mean that the device is able to act in an intelligent way, learn and think quickly, and show good judgement. Most of these characteristics seem well adapted to the current capabilities of technological devices or to capabilities being developed under the artificial intelligence framework (Bulchand-Gidumal, 2020). In many cases smart has mistakenly become a synonym of enhanced by technology, likely due to this requirement to act quickly (Boes et al., 2016; Xiang et al., 2015), but a complete smart perspective should consider not only technology but also the institutional and human perspectives (Nam & Pardo, 2011).

In the application of the concept of 'smart' to the tourism realm, the term has primarily been used at a theoretical level with proposals regarding, for example, what a smart destination should be. In the cases in which the concepts of smartness have been applied at a more practical level, the focus has been on the use of technologies and technological applications. Smartness is a much broader concept that includes many other important elements, such as sustainability, governance, mobility, economic productivity, and the relation between tourists and residents. In fact, recent research has found a shift in the literature from the initial focus on technology in the area of STDs to a current interest in tourist experiences and sustainability (Bastidas-Manzano et al., 2020). In this literature

review, first the smart tourism frameworks currently available are analyzed, and then the dimensions that are proposed in the available frameworks of STD and of smart cities are analyzed. Based on this literature review, in the next section an integrated STD framework is proposed. This type of framework is currently lacking in the literature to the best of the researchers' knowledge. There is an integrated framework for the case of cities, but such a framework does not exist for STD. The literature reveals different frameworks and alternatives, but none constitute a framework that allows for an integrated and clear approach to STD.

2.1 Smart tourism destinations (STD)

Proposals for STDs are frequently based on the concept of a smart city (Boes et al., 2015; Cornejo Ortega & Malcolm, 2020; Gretzel, 2018). Smart cities are defined as those able to improve their citizens' quality of life while simultaneously making the city more competitive (Boes et al., 2015). Cohen (2014) defines a smart city as one in which six dimensions (smart governance, smart environment, smart mobility, smart economy, smart people, and smart living) are developed. From there, Cohen (2018) presents the smart city wheel, which contains 18 subdimensions, 3 for each of the 6 dimensions. Gretzel (2018) adds the subdimension of wellbeing, which was not specifically mentioned by Cohen but can be found in many of the subareas of the smart city wheel.

Several definitions of an STD have been proposed, and there is not one definition that can be considered universal. For example, Segittur & TechFriendly (2020, p.7) define it as:

> […] an innovative destination, consolidated on a cutting-edge technological infrastructure, which guarantees the sustainable development of the territory, promotes universal accessibility, facilitates the interaction and integration of the visitor with the environment, increasing their experience in the destination at the same time as improves the quality of life of residents; committing to the fulfillment of the United Nations SDGs.

From this definition, Segittur & TechFriendly (2020) conclude that an STD must develop five areas: governance, innovation, technology, sustainability, and accessibility. Another proposal by the Instituto Valenciano de Tecnologías Turísticas (2020) is based on six areas, which are similar those in the previous model; it divides technology into three areas (connectivity, information systems, and sensorization) while dropping accessibility. Ivars-Baidal et al. (2021) use nine dimensions: governance, sustainability, accessibility, innovation, connectivity, intelligence, information systems, online marketing, and evolution of the tourism activity.

Although there is interest in agreeing on a common definition of an STD and the areas it should include, the specific implementations appear to be contingent on the location (Baggio et al., 2020). While some territories focus on technological development, others focus on innovation and competitiveness and others are more concerned about smart governance and open data. From these observations, Baggio et al. (2020) conclude that there is a need for a more holistic approach in defining an STD. In this regard, it is possible to define a framework than can be used in all tourism destinations, as happens with the case of cities and the smart city wheel (Cohen, 2018).

In this sense, most cases in which models regarding STD are proposed are not really models as such regarding the dimensions and subdimensions that must be examined in an

STD. For example, Koo et al. (2016) propose a model of STD competitiveness replicating that of Crouch and Ritchie (1999), but this model is proposed at a considerably high level, and therefore only mentions the principal areas to consider. Another interesting model is that by Shafiee et al. (2019), which suggests six categories and 28 sub-categories. In this case, it is an evolutionary model with the main categories representing steps in the development process (causal conditions, phenomenon, actions/interactions, context conditions, intervening conditions, and consequences). Although interesting, there seems to be a certain imbalance between the different parts of the model. For example, neither the categories nor the sub-categories are of the same level, and while some are complex constructs that would probably include several subdimensions (e.g. environmental factors), others are much simpler and more direct (e.g. use of the Internet of Things). Cavalheiro et al. (2020) proposed a strategic model to help destinations develop an STD in order to promote environmental, economic, socio-cultural, and political values. The model outlines the process a tourism destination must undertake to create an STD. This process comprises four steps. The first is related to the destination itself, the second to the IT infrastructure, the third to tourism applications, and the fourth to implementing the STD based on the previous steps. The model by Cavalheiro et al. (2020) is a strategic one that does not detail the areas and categories that must be considered in order to implement each of the steps. Furthermore, the model implies that each step is sequential, with each step built on the previous one, instead of allowing for several of the areas to be addressed simultaneously.

Therefore, there is a need for an integrated model that clearly demonstrates the dimensions and subdimensions that must be accounted for when trying to develop an STD. This model should also integrate all the dimensions that have been proposed in the literature. Such a model would allow DMOs and other stakeholders to approach STD from an integral and complete perspective, without the imbalances and preferences for certain areas that have been the case in technological developments. Last, the proposed model should be useful in different environments in accordance with the holistic approach that was called for by Baggio et al. (2020).

Therefore, and elaborating on previous proposals, an STD should include six areas: smart tourists, smart residents, smart mobility, smart governance, smart economy, and smart sustainability. These six areas are based on the six dimensions of smart cities proposed by Cohen (2014), with the alteration that smart living is changed to smart tourists. This change is made since, in Cohen's model, only one type of actor is considered (people), with two main areas dedicated to them: smart people and smart living. From the researchers' point of view, and in the case of STD, it is preferable to differentiate between tourists and residents.

These six top-level areas consider several of the dimensions and contexts mentioned in the various proposals, including accessibility, inclusivity, mobility management, transportation systems, sustainable planning and development, leadership and collaboration between enterprises and between enterprises and the government, economic productivity, and employment. The following subsections describe each of the six areas and propose three dimensions for each.

2.1.1 Smart economy

To portray a smart economy, the dimensions of entrepreneurship and innovation, marketing and promotion, and ancillary services are proposed. Previous research has found that the more dependent a territory is on tourism, the less it will benefit from it. Instead, areas with varied sources of economic activity benefit most from tourism (Ashworth & Page, 2011). In this sense, entrepreneurship and innovation allow for the development of new activities around tourism and new industries in a territory (Ateljevic & Li, 2009).

However, developing new products, services, and industries in the territory is not sufficient. The current existing products need to continue to be promoted, which accounts for the dimension of marketing and promotion. This is an area that is present in most of the existing models of STD, such as that formulated by Koo et al. (2016), and that was also present in Crouch and Ritchie's (1999) model for destination competitiveness.

Last, ancillary services have been found to be key in destinations' management, and even more in the process of managing the current crisis, specifically regarding the availability of health services. Ancillary services were one of the six dimensions proposed by Buhalis and Spada (2000) in their model of a successful destination.

2.1.2 Smart governance

Smart governance is related to transparency, modernization, participation, political strategies, data openness, and public involvement (Cohen, 2014; Della Corte et al., 2017). Usually, the governance of an STD is more complex than that of a smart city due to the multiple levels of governance and multiple types of industries that affect a destination (Bulchand-Gidumal & Pérez-Jiménez, 2017; Gretzel, 2018). Three dimensions are considered in the area of smart governance: leadership, social capital, and IT and data.

Leadership and leadership style are key foundations of an STD (e.g. Boes et al., 2015; Gretzel, Sigala, et al., 2015). Under the current difficult circumstances, leadership is more necessary than ever. In this case, top-down leadership is most appropriate for managing the crisis. This form of leadership may seem to contradict the literature on smart destinations, which advocates for participatory governance (e.g. Boes et al., 2016). However, this is not the case. The proposal is that top-down leadership is implemented only during crisis management and in the initial phases of the recovery phase. After this point, it is possible to return to the participatory models proposed in the literature.

Social capital, which in most definitions includes collaborative networks, refers to networks that allow collaboration between agents at the destination (Boes et al., 2016). Probably, IT and data is one of the areas that is more advanced regarding the implementation of STD, as has been explained previously. Although technology should not be the only focus of a smart destination, the role of technology in the creation of smartness is more than relevant. Technology can allow destinations to offer visitors personalized experiences while making them aware of the available offers at the destination (Xiang et al., 2015). Technology and data can also be used by the destination stakeholders to make more qualified decisions (Xiang et al., 2015) and can act as a coordination mechanism for knowledge sharing (Del Chiappa & Baggio, 2015).

2.1.3 Smart tourists

Smart tourists are those who make use of technology to interact dynamically and co-create their experiences while at the destination (Femenia-Serra et al., 2019). In the model proposed in this research, the smart tourist area parallels that of smart living in Cohen's (2014) model. Thus, by combining both of the previous aspects, the three dimensions regarding smart tourists that will be considered are amenities and experiences, health and safety, and accessibility and inclusivity.

Amenities and experiences are a significant part of a tourism destination and are present in all the relevant models concerning both competitive destinations (e.g. Buhalis & Spada, 2000; Crouch & Ritchie, 1999) and STD (e.g. Koo et al., 2016). When focusing on STD, one of the main concepts regarding the amenities and experiences is that, in smart destinations, tourists should be able to engage in a co-creation process (Femenia-Serra et al., 2019) by means of using technology.

In Cohen's (2018) proposal, health and safety are two distinct subdimensions of smart living. They have been merged into one in the model proposed in this research, since they are connected and at a similar level and context. Usually, tourists' most relevant concern is safety, which is a significant topic in the literature (e.g. Seabra et al., 2013; Tasci & Boylu, 2010). In the current context, health is an area that must be also taken in consideration.

Last, accessibility and inclusivity are present in both Cohen's (2018) model (as Inclusive Society), and in Crouch and Ritchie's (1999) model. It is also a concept mentioned in most of the definitions of STD (e.g. Buhalis & Amaranggana, 2013) but has been frequently overlooked in the STD models available, at least explicitly. It is important enough as to allocate an area to it in the model being proposed.

2.1.4 Smart residents

Smart city frameworks usually include the dimension of smart residents, which generally contains the subdimensions of education, health, plurality, creativity, and participation (Cohen, 2018; Della Corte et al., 2017). In the case of an STD, the three dimensions suggested in the area of smart residents are productivity and employment, integration with tourists, and education.

The dimension of productivity and employment refers to the fact that tourism generates quality employment for residents. This is connected to the area of Smart Economy and the fact that research seems to find that tourism activity does not always benefit the territory (Ashworth & Page, 2011), instead generating low-quality employment (Robinson et al., 2019).

Integration with tourists is equivalent to the inclusive society dimension proposed by Cohen (2018). When referring to an STD, it is considered that an inclusive society is one in which there is a high level of integration between residents and tourists, and tourists are neither isolated in ghettos nor causing the gentrification (touristification) of certain neighborhoods (Lopes et al., 2019).

Last, the education dimension coincides with the 21st century education dimension proposed by Cohen (2018). This area refers to the changes required in education to ensure that people can face the challenges that technological and societal trends (e.g. artificial intelligence, robotics, aging populations) are bringing to the tourism sector. For example, while recent studies have found that there could be a trend toward lower requirements for human labor in the sector (Melián-González & Bulchand-Gidumal, 2020), other concepts such as collaborative robots (cobots; Tussyadiah, 2020) and augmented employees indicate directions in which humans could be employed in the tourism sector with the appropriate capabilities.

2.1.5 Smart mobility

Smart mobility refers to accessibility within the destination, the possibility of arriving at the destination, and the existence of modern transportation systems (Buhalis & Amaranggana, 2013; Della Corte et al., 2017). Taking this into account, the three dimensions of smart mobility are intradestination transport, interregional transport, and mobility management. Intradestination transport refers to the movements of tourists while at the destination. Interregional transport refers to the movement of tourists from the traveler generating region to the tourist destination region and may involve passing through a transit route region (Leiper, 1990). Last, mobility management is a new dimension that has been incorporated into the model that includes, among other elements, understanding the movements of the tourists while at the destination, the relations they have with other tourists and residents, and the places they visit.

2.1.6 Smart sustainability

In smart cities and smart destination models, smart sustainability includes concepts such as the use of renewable energies, sustainable resource management, circular economy, and environmental protection (Della Corte et al., 2017; Perles Ribes & Ivars-Baidal, 2018). However, it seems that up to now, the contribution of smart destinations to improving destination sustainability appear to be rather limited (Ivars-Baidal et al., 2021), although there seems to be some room for hope (Perles-Ribes & Ivars-Baidal, 2021). The three proposed dimensions of smart sustainability are sustainable infrastructures, sustainable destination planning, and sustainable tourism economy. The sustainable infrastructures dimension is a broader perspective from Cohen's (2018) green buildings dimension. Sustainable infrastructures not only include buildings (e.g. hotels and commercial areas), but also natural resources at the destinations. Sustainable destination planning coincides with Cohen's (2018) green urban planning dimension as applied to tourism. Last, sustainable tourism economy refers to sustainable tourism with a broader perspective than environmental issues, including a tourism economy that promotes a better economy for the destination with regards to factors such as human development, fulfilling jobs, and residents' wellbeing (Roxas et al., 2020).

2.2 An integrated framework for the development of Smart Tourism Destinations

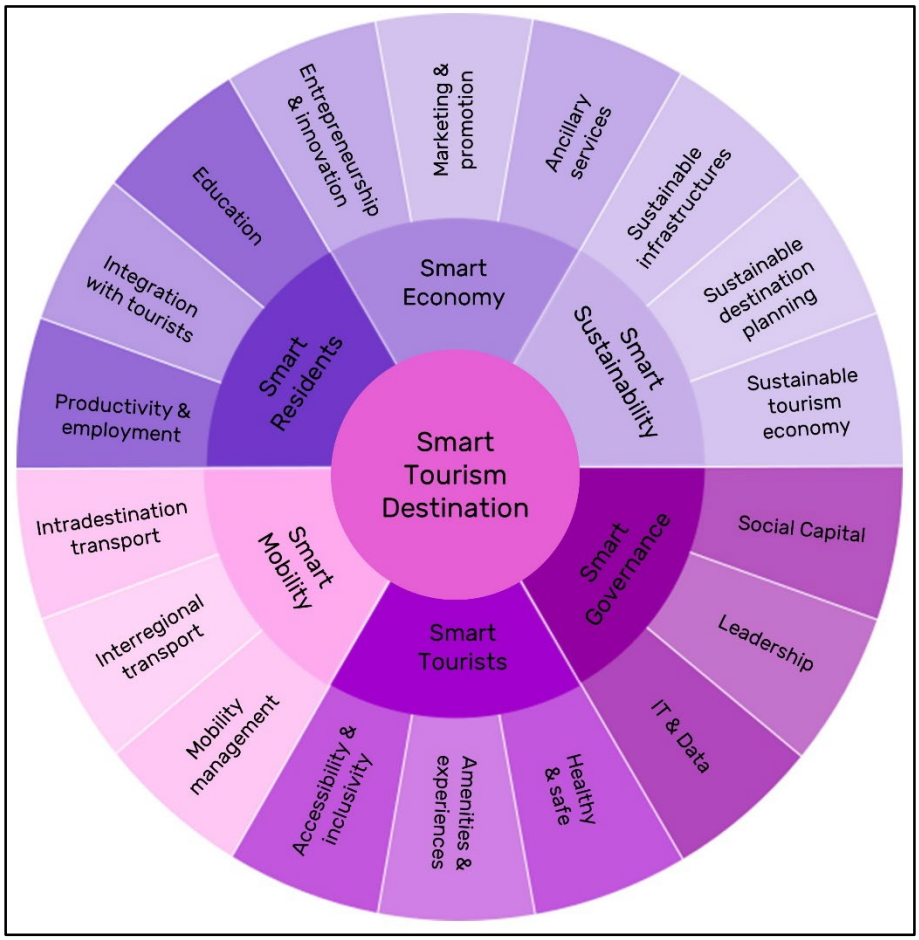


Figure 1. Smart destinations wheel framework

Figure 1 illustrates the 6 areas and 18 dimensions of the proposed framework in a wheel that parallels the smart city wheel by Cohen (2018). This framework provides an integrated framework for the analysis of the implementation of STD. As can be seen, the 18 proposed dimensions are equilibrated in importance and complexity, and include all the elements mentioned in the models that were reviewed.

3 Research methods

This research analyzes the development of smart tourism in islands. Islands differ in terms of geographic and political dimensions (Gretzel, 2018) and demonstrate great variety, from Australia and Tasmania to some Spanish islands and Cozumel in Mexico. This study focuses on the case of average islands (500 to 5000 square kilometers; 100,000 to 1 million inhabitants), and which are highly-dependent on tourism. In many cases, these islands and archipelagos belong to a country but have a certain economic and political autonomy. This type of island characterizes many of the principal tourism destinations in Europe, such as Gran Canaria, Mallorca, Sardinia and Crete, among many others. Most of them share some key features (Herrera Priano et al., 2016), such as remoteness from the mainland, aids to incentivize specific sectors, fiscal advantages, and protection against monopolies.

The basic smart tourism pillars proposed in this research (Figure 1) are valid for the case of islands. However, certain characteristics related to how tourism is developed in islands, the impact that tourism has on islands in most cases, and even the controlled way in which tourists enter islands can provide some strengths and weaknesses when dealing with a case such as COVID-19.

Therefore, the objectives of this research were twofold. The first was to use the developed framework to categorize a series of actions that could be used by an island that is highly dependent on tourism to overcome the COVID-19 crisis. The second objective was to validate these measures with a group of experts by means of a Delphi method. To this aim, the island of Gran Canaria was chosen.

Gran Canaria was chosen for several reasons. It belongs to the Canary Islands, which are highly dependent on tourism for approximately 35% of their GDP (Exceltur, 2019) and comprise one of the main tourist destinations in Europe. The island received 4.2 million tourists in 2019, out of which 3.6 million were international tourists and 0.6 million came from other regions of Spain (Frontur, 2021). The drop in 2020 was of approximately 70% (Frontur, 2021). The island currently has several ongoing projects regarding transforming the tourism destination into a smart tourism destination.

The main origins of the 3.6 million international tourists that arrived in Gran Canaria in 2019 were the Nordic countries (Denmark, Finland, Norway and Sweden), Germany and the United Kingdom. Each of these three main origin areas contributed with more than 750 thousand tourists. As can be seen from these figures, proximity tourism is not a valid option in the case of Gran Canaria. Proximity tourism is defined as doing tourism and travelling near home (Romagosa, 2020) which, in the case of an island, would mean that tourists would only be the inhabitants of the island.

It may seem that being part of Spain, the island could have benefited from an increase in domestic tourism. This is, from Spanish tourists that may prefer to stay in Spain and not travel abroad. However, this was not the case. Monthly data from September 2020 to March 2021 shows that, in comparison to the same months of 2019, international tourist arrivals fell by 85 to 92% in each of the months, while domestic arrivals fell from 65 to 75% in each of the months.

3.1 Research approach

This study implemented a two-step methodology. In the first step, several sources of information were analyzed in order to generate a list of possible actions to be carried out by destinations to improve their competitive position during and after the COVID-19 crisis. These actions were assigned to one or more of the STD areas presented in Figure 1. Subsequently, the Delphi technique was used to obtain the opinion of experts who assessed each of the actions using four criteria: agreement with the action, feasibility, expected economic cost, expected time to put in place, and importance. Subsections 4.1 and 4.2 describe these two steps in detail.

3.1.1 Step 1: Compilation of actions

To identify the actions, several sources were used. Among them, scientific literature, analyses, and reports published since the start of the COVID-19 crisis, as well as

conferences, webinars, and presentations delivered by academics, business associations, and business professionals[1] during the period between March and June 2020. Regarding the reports, the following were used:

- UNWTO Global guidelines to restart tourism (UNWTO, 2020).
- Post COVID-19 Tourism. Tourism after the global pandemic. Analysis, perspectives and recovery paths (Asociación Española de Expertos Científicos en Turismo, 2020 [in Spanish]).
- Post-COVID-19 tourism. Reflections, challenges and opportunities (Simancas Cruz et al., 2020 [in Spanish]).
- Tourism facing a pandemic: from crisis to recovery (Burini, 2020).
- Tourism Crisis Recovery Checklist (McKercher, 2020).
- Guide for the reactivation of smart tourism destinations after COVID-19 (Segittur & TechFriendly, 2020 [in Spanish]).

From these sources, it was possible to generate an inventory of more than 60 proposed actions. To the best of the researchers' knowledge, the approach that was followed to generate the inventory of actions is not prevalent in the literature. However, it was considered to be appropriate for this case, as almost every stakeholder in the tourism sector launched some form of proposal to reignite and recover tourism. Most of these proposals included similar actions that covered almost every facet of tourism destination management.

Two researchers independently analyzed these actions and assigned them to one or more of the areas of the framework proposed in Figure 1. This allowed the researchers to merge them and formulate a shorter list of actions clearly different from one another. It also permitted the researchers to verify is any of the areas and dimensions did not have actions assigned and, if this was the case, to analyze if this was reasonable. In general, there was considerable agreement between both researchers regarding the actions and their assignment to the dimensions of the framework. Some cases required discussion to take place in order to concur on the final list of actions and which area each action was assigned to. Both researchers then agreed on the final approach to expressing these actions and regarding the area or areas of the proposed STD framework that the action would be assigned to. The wording of the proposed actions can be found in Appendix A.

Regarding the assignment of the actions to the areas and dimensions of the proposed framework, six actions were assigned to smart economy, two to smart tourists, four to smart residents, three to smart sustainability, seven to smart governance, and three to smart mobility. The total number of actions assigned was higher than 20 since some of the actions were assigned to more than one area. Some areas had more actions assigned than others because certain areas, such as governance and economic measures, are more relevant to overcoming a crisis such as COVID-19. Also, two of the dimensions did not have any actions assigned, as will be explained later. There was an agreement on the fact that it was reasonable for these two dimensions to not have any actions assigned.

[1] The list of presentations, conferences and webinars is too large to include it here. Just as an example, the following are mentioned: "Reignite Mediterranean Tourism post COVID Conference" 11 May 2020, "La recuperación del turismo en Canarias" 14 May 2020.

3.1.2 Step 2: Delphi method

The assessments from the experts were obtained using a web-based Delphi methodology. The Delphi method was developed in the 1950s by the RAND Corporation and is widely used by academics and professionals (Donohoe & Needham, 2009). Its main goal is to obtain a reliable consensus of a panel of experts with a high level of knowledge of the subject under analysis (Okoli & Pawlowski, 2004). A modified Delphi method was used, by beginning the process with a set of selected items drawn from various sources. The Delphi method is well suited for analyzing complex problems such as the subject of this research, but it is not exempt from criticism (Ivars-Baidal et al., 2019), such as its sensitivity to how it is designed, the possibility of a high attrition rate and the limited interaction between the experts. In this research, the Delphi method was ideal since it was developed during those months in which the geographical area that was analyzed was under the COVID-19 lockdown and other methods such as focus groups would not have been possible. In order to avoid a high attrition rate, each of the experts were contacted personally by one of the researchers before starting the methodology, to explain the process and the expected dedication that would be required.

For each of the actions, the experts were asked to rank four criteria on a Likert 1 to 5 scale: agreement with the action, importance of the action, cost of the action, and feasibility of the action. For three of the criteria, 5 was the most positive value (i.e. totally agree, very important, and very feasible), while for the cost criterion, the most positive value was 1 (i.e. very low cost). The participant experts were given the option to include other actions in each of the areas, as well as to comment on each of the initially proposed actions.

The selection of experts attempted to include the perspectives of all the stakeholders involved in developing and managing tourism in Gran Canaria. Thus, the following profiles were included: members of the destination management organizations (DMOs) with interest in the island (touristic areas of the island, island DMO, regional DMO, and national DMO), tourism researchers from local universities, chambers of commerce, travel agencies, hotel managers, sharing economy hosts, activity managers, tourism entrepreneurs, tourism consultants, telecommunication company managers, and transportation company managers. A total of 44 experts were initially selected. In order to develop the research in a timely manner to obtain results that could be used in the process of returning to normalcy after the COVID-19 crisis, this relatively large number of experts was considered appropriate to obtain a minimum of 20 responses.

The first round was developed through an online survey. Participants were given a 10-day window to respond. A total of 38 responses were received. In the second round, a 15-day window was given, and two questionnaires were not returned. Therefore, the final number of valid participants was 36. These 36 experts included members from all the previously mentioned categories.

The first round was developed during the first fortnight in June 2020, while the second took place the last week of June and the first week of July 2020. Obtaining a consensus is one of the most interesting and controversial aspects of the Delphi method. In this research, the two rounds were considered sufficient.

In the first round, the participants were asked a total of 80 questions (four criteria for each of the 20 proposed actions). A high level of accordance was found after Round 1 in 53 of the 80 questions (66.3%). In 14 of the questions (17.5%), there was a high level of dispersion in the answers. Therefore, these 14 items were part of Round 2 for all the participants. In the answers to the other 13 questions (16.2%), there was a good level of accordance in general, but certain participants did not agree with the perspective of the rest of the participants. To determine whether there was a global agreement or whether it was an issue related to certain participants, a threshold of five participants that did not agree with the rest was set. Thus in Round 2, each participant was requested to answer 14 common questions plus those of the 13 in which he or she showed a high level of disagreement with the rest of the participants in Round 1. The second round was also developed through an online survey, but in this case each participant got a slightly different survey. Figure 2 illustrates this process.

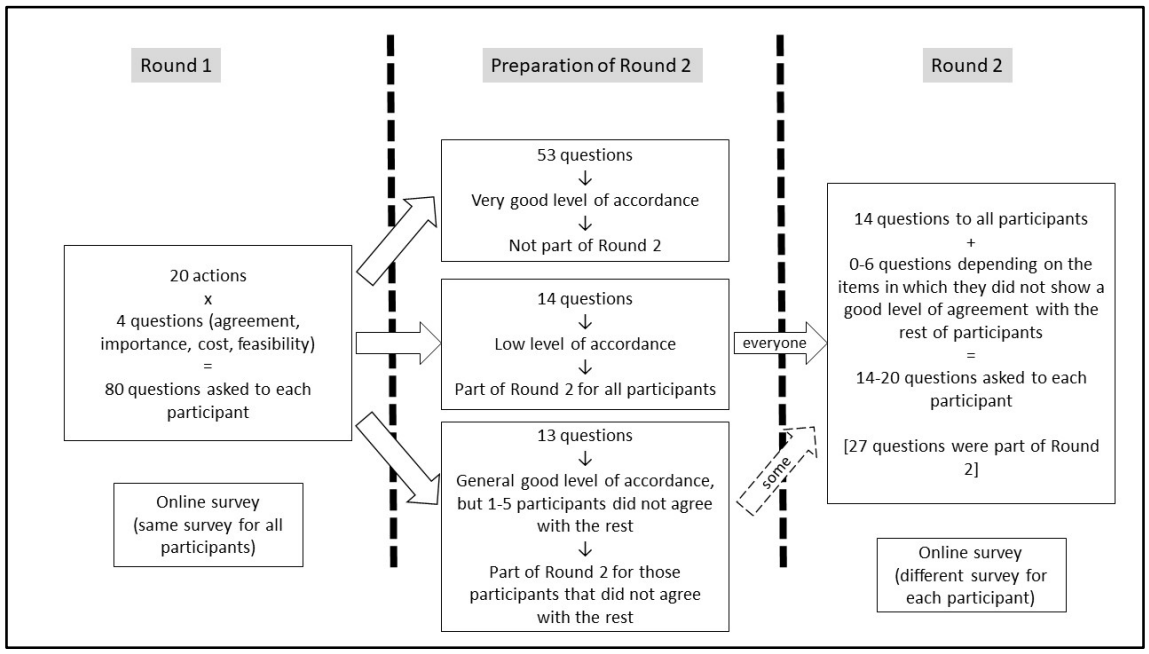


Figure 2. Delphi Rounds 1 and 2

To assess whether a third round of the Delphi method was necessary, the same criteria as Ivars-Baidal et al. (2019) was used. This is, the difference of the coefficient of variation (CV; i.e. the division of the standard deviation with the mean) of two consecutive rounds. If the absolute difference between the two CVs of consecutive rounds is close to 0, there is a high stability in the answers, and the result can be taken as a stopping rule (Landeta, 1999). The highest differences found between the CV of Round 2 and that of Round 1 was an absolute value of 0.08. Therefore, it was decided that a third round would not be conducted. In general, participants maintained their evaluation from Round 1 to Round 2, but in most cases they added comments expounding on why they maintained those values.

4 Results

4.1 List of compiled actions

As explained in the methodology section, 20 actions were identified from the process that was undertaken by the researchers. These actions were then assigned to one or more of the dimensions of the proposed framework (see Figure 1). Table 1 shows the areas, dimensions, and actions. Three of the actions (A1, A2, and A18) were assigned to more than one dimension. A detailed explanation of each of the actions can be found in Appendix A.

Table 1. Actions and areas they belong to initially submitted to the experts in the Delphi method

Area	Dimension	Actions
Smart Economy	Entrepreneurship and innovation	*Action 1*. Develop and promote new economic sectors other than tourism to avoid excessive dependence on the tourism sector in the territory. *Action 2*. Develop new business models around tourism (e.g. knowledge-intensive services, services based on digital skills, and incubators for tourism projects).
	Marketing and promotion	*Action 3*. Design and implement communication and incentive campaigns (usually economic) aimed at stimulating demand in the home markets. *Action 4*. Develop social media monitoring systems to capture the concerns of visitors (current and potential) in real time and respond effectively and immediately by implementing corrective actions. *Action 5*. Design and implement communication campaigns on measures applied to manage the crisis in the destination: current status, measures taken.
	Ancillary services	*Action 6*. Communicate detailed information regarding the real situation at the destination and the available services to the markets of origin.
Smart Tourists	Health and safety	*Action 7*. Carry out sanitary controls at the entrance to the destination (or even required before leaving the region of origin).
	Accessibility and inclusivity	No actions in this area regarding COVID-19
	Amenities and experiences	*Action 8*. Develop new tourist experiences and modify current ones to guarantee the physical distancing between participants.
Smart Residents	Education	*Action 9*. Educate tourist workers about new forms of interpersonal relationships: sanitary measures, interpersonal relationships with a facemask (loss of facial expression), and the need to avoid direct contact (e.g. handshaking).
	Integration with tourists	*Action 10*. Develop measures to guarantee the safety of tourist employees and residents.
	Productivity and employment	*Action 1.* Develop and promote new economic sectors other than tourism to avoid excessive dependence on the tourism sector in the territory. *[Also included in Smart Economy – Entrepreneurship & Innovation]* *Action 2.* Develop new business models around tourism (e.g. knowledge-intensive services, services based on digital skills, and incubators for tourism projects). *[Also*

		included in Smart Economy – Entrepreneurship & Innovation]
Smart Sustainability	Sustainable infrastructures	No actions in this area regarding COVID-19
	Sustainable destination planning	*Action 11*. Plan to periodically stop the arrival of tourists for a set period (e.g. stop X months every Y years; X and Y must be determined) with the aim of regenerating the destination from the environmental and infrastructure perspectives.
	Sustainable tourism economy	*Action 1.* Develop and promote new economic sectors other than tourism to avoid excessive dependence on the tourism sector in the territory. *[Also included in Smart Economy – Entrepreneurship & Innovation]* *Action 2.* Develop new business models around tourism (knowledge-intensive services, services based on digital skills, incubators for tourism projects, etc). *[Also included in Smart Economy – Entrepreneurship & Innovation]*
Smart Governance	Social capital	*Action 12*. Increase collaboration between agents in the destination (public and private sectors, between companies, and between public and private sectors and the universities).
	Leadership	*Action 13*. Develop a model for global crisis management under a unified command and control (national or regional). *Action 14*. Implement economic measures aimed at companies in the tourism sector, such as tax exemptions, soft loans, financing, and bailouts. *Action 15*. Make agreements with airlines and tour operators to ensure that clients who purchase tourism services in advance will receive full refunds immediately if necessary.
	Technology & Data	*Action 16*. Develop business models in VR to replace face-to-face activities (non-traveling tourist). *Action 17*. Implement a platform for the consolidation of behavioral data and tourist monitoring, with the possibility of immediately contacting each individual (in case of emergency). *Action 18*. Require tourists and residents to use automated contact tracing applications (without geolocation or centralized control).
Smart Mobility	Intra-destination transportation	*Action 18*. Require tourists and residents to use automated contact tracing applications (without geolocation or centralized control). *[Also included in Smart Governance – IT & Data]*
	Inter-regional transportation	*Action 19.* Implement actions aimed at reducing flight shame (the shame of flying due to the impact on the climate), such as imposing a carbon footprint compensation or using electric vehicles at the destinations.
	Mobility management	*Action 20*. Hire the necessary personnel to trace contacts among residents and tourists.

Note: Some of the actions have been assigned to more than one dimension. These actions are A1, A2 and A18.

As seen in the table, all but two of the dimensions included one or more actions. The two dimensions that did not include actions were 'smart tourists-accessibility and inclusivity' and 'smart sustainability-sustainable infrastructures'. In both cases, it is reasonable that no actions were mentioned for these dimensions. While they are both extremely important areas to develop an STD, none of the actions to be developed were targeted at managing the COVID-19 crisis or the post-crisis period. Some of the sources consulted did mention actions related to giving greater attention to accessibility issues in the crisis recovery process, but they were not considered to be sufficiently justified as to include them in the set of actions to be considered.

4.2 Results of the Delphi method

In the analysis of the data, the correlation between the importance of the actions and agreement with the actions was 0.97. Thus, the importance dimension was dropped while retaining the dimensions of agreement, cost, and feasibility. The correlation of agreement with cost was -0.16 and with feasibility was 0.69, which indicates a low correlation between agreement and cost. There was a high correlation between agreement and feasibility; the respondents agreed with the actions they considered feasible.

In total, 20 actions were proposed to the experts. Two had a very low level of agreement (under 3). In both cases, these actions had a very high dispersion in the participants' answers. Thus, these two actions were dropped. Table 2 presents the 20 actions, the experts' agreement (A) with them, and the actions' expected costs (C) and feasibility (F). The actions are arranged in descending order of agreement.

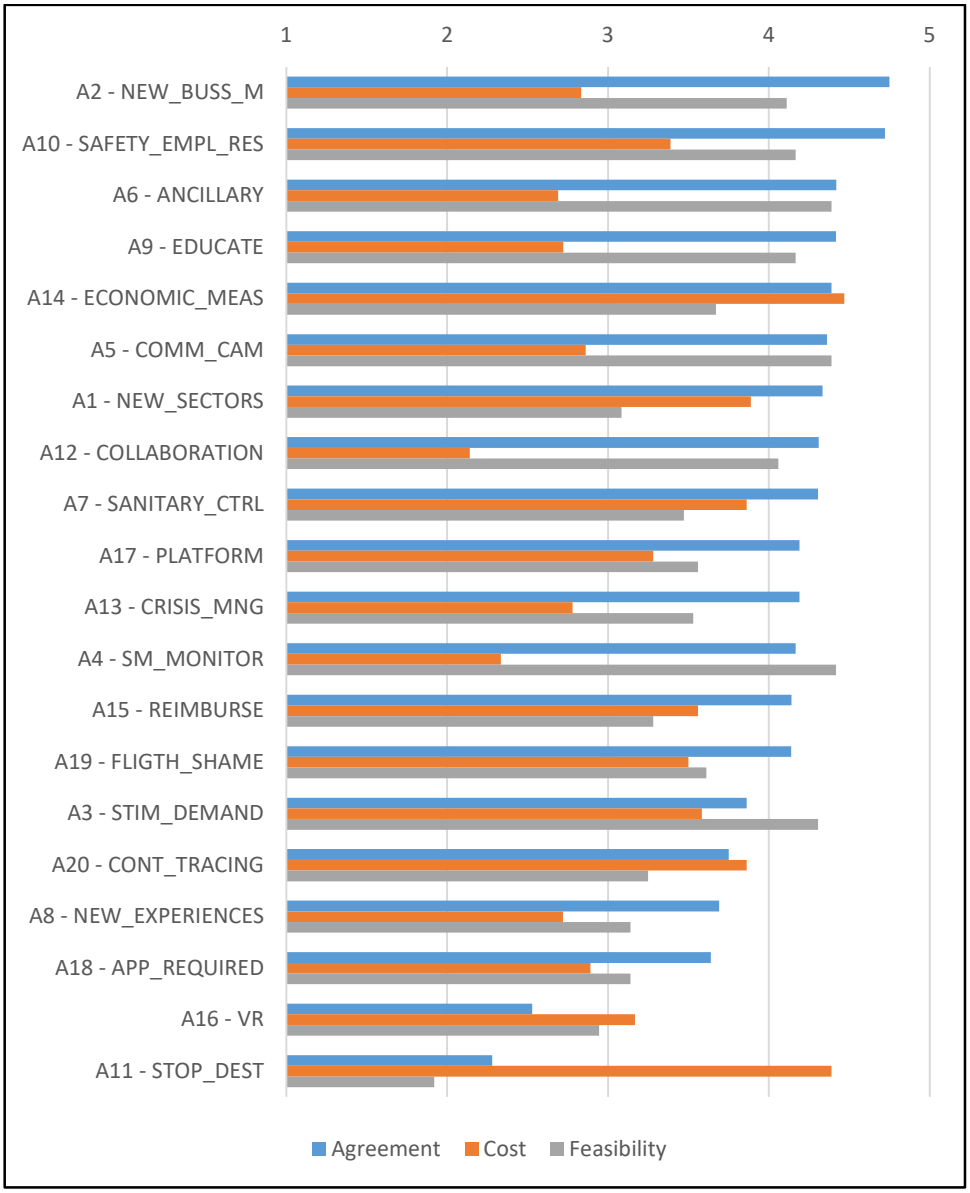
Table 2. Actions with agreement, cost, and feasibility

Action [short code]	A	C	F
Action 2. Develop new business models around tourism (e.g. knowledge-intensive services, services based on digital skills, and incubators for tourism projects). [A2 - NEW_BUSS_M]	4.75 (0.44)	2.83 (0.65)	4.11 (0.75)
Action 10. Develop measures to guarantee the safety of tourist employees and residents. [A10 - SAFETY_EMP_RES]	4.72 (0.51)	3.39 (0.84)	4.17 (0.74)
Action 6. Communicate detailed information regarding the infrastructures and auxiliary services (e.g. health) available at the destination, as well as the real time situation, to the markets of origin. [A6 – ANCILLARY]	4.42 (0.81)	2.69 (0.95)	4.39 (0.69)
Action 9. Educate tourist workers about new forms of interpersonal relationships: sanitary measures, interpersonal relationships with a facemask (loss of facial expression), and the need to avoid direct contact (e.g. handshaking). [A9 – EDUCATE]	4.42 (0.84)	2.72 (0.97)	4.17 (0.77)
Action 14. Implement economic measures aimed at companies in the tourism sector, such as tax exemptions, soft loans, financing, and bailouts. [A14 - ECONOMIC_MEAS]	4.39 (0.73)	4.47 (0.91)	3.67 (0.93)
Action 5. Design and implement communication campaigns on measures applied to manage the crisis in the destination: current status, measures taken. [A5 - COMM_CAM]	4.36 (0.76)	2.86 (0.87)	4.39 (0.69)
Action 1. Develop and promote new economic sectors other than tourism to avoid excessive dependence on the tourism sector in the territory. [A1 - NEW_SECTORS]	4.33 (0.72)	3.89 (0.98)	3.08 (0.97)
Action 12. Increase collaboration between agents in the destination (public and private sectors, between companies, and between public and private sectors and the universities). [A12 – COLLABORATION]	4.31 (0.95)	2.14 (0.90)	4.06 (1.19)

Action 7. Carry out sanitary controls at the entrance to the destination (or even required before leaving the region of origin). [A7 - SANITARY_CTRL]	4.31 (0.98)	3.86 (0.90)	3.47 (0.97)
Action 13. Develop a model for global crisis management under a unified command and control (national or regional). [A13 - CRISIS_MNG]	4.19 (0.98)	2.78 (0.72)	3.53 (0.97)
Action 17. Implement a platform for the consolidation of behavioral data and tourist monitoring, with the possibility of immediately contacting each individual (in case of emergency). [A17 – PLATFORM]	4.19 (0.79)	3.28 (0.74)	3.56 (1.21)
Action 4. Develop social media monitoring systems to capture the concerns of visitors (current and potential) in real time and respond effectively and immediately by implementing corrective actions. [A4 - SM_MONITOR]	4.17 (0.91)	2.33 (0.83)	4.42 (0.81)
Action 15. Make agreements with airlines and tour operators to ensure that clients who purchase tourism services in advance will receive full refunds immediately if necessary. [A15 – REIMBURSE]	4.14 (0.99)	3.56 (1.11)	3.28 (0.97)
Action 19. Implement actions aimed at reducing flight shame (the shame of flying due to the impact on the climate), such as imposing a carbon footprint compensation or using electric vehicles at the destinations. [A19 - FLIGHT_SHAME]	4.14 (1.20)	3.50 (0.97)	3.61 (0.96)
Action 3. Design and implement communication and incentive campaigns (usually economic) aimed at stimulating demand in the home markets. [A3 - STIM_DEMAND]	3.86 (0.99)	3.58 (0.97)	4.31 (0.92)
Action 20. Hire the necessary personnel to trace contacts among residents and tourists. [A20 - CONT_TRACING]	3.75 (0.97)	3.86 (0.93)	3.25 (0.97)
Action 8. Develop new tourist experiences and modify current ones to guarantee the physical distancing between participants. [A8 - NEW_EXPERIENCES]	3.69 (0.95)	2.72 (0.94)	3.14 (0.96)
Action 18. Require tourists and residents to use automated contact tracing applications (without geolocation or centralized control). [A18 - APP_REQUIRED]	3.64 (0.99)	2.89 (0.82)	3.14 (0.99)
Action 16. Develop business models in VR to replace face-to-face activities (non-traveling tourist). (dropped) [A16 – VR]	2.53 (1.23)	3.17 (0.94)	2.94 (1.19)
Action 11. Plan to periodically stop the arrival of tourists for a set period (e.g. stop X months every Y years; X and Y must be determined) with the aim of regenerating the destination from the environmental and infrastructure perspectives. (dropped) [A11 - STOP_DEST]	2.28 (1.11)	4.39 (0.99)	1.92 (0.97)

Note: (A) Agreement; (C) Cost; (F) Feasibility. Values shown in columns A, C and F correspond to the average, with the standard deviation in brackets. Short codes are introduced to be used in Figure 3.

Figure 3 presents a comparison between the actions in terms of agreement, cost, and feasibility, following the same order as in Table 2 (descending level of agreement).



NOTE: Actions are shown in descending order of agreement.

Figure 3. Agreement, cost, and feasibility of the actions

As stated, the two actions with a very low level of agreement were dropped (A16 and A11). Table 3 shows the number of actions and their agreement, cost, and feasibility by area.

Table 3. Actions with agreement, cost, and feasibility by area

Area	No. of Actions	Agreement	Cost	Feasibility
Smart economy	6	4.32	3.03	4.12
Smart governance	6	4.14	3.19	3.54
Smart mobility	3	4.03	3.38	3.46
Smart residents	4	4.56	3.21	3.88
Smart sustainability	2	4.54	3.36	3.60
Smart tourists	2	4.00	3.29	3.31

NOTE: Some of the actions (e.g. A1) appear in more than one area. Thus, the total number of actions is higher than 18, which is the total number of different actions after dropping the two with a low level of agreement.

As can be seen in Table 3, the agreement was higher for actions regarding smart residents and smart sustainability and lower for actions regarding smart mobility and smart tourists.

4.2.1 Additional proposed actions

Apart from the initially provided actions, the experts proposed some additional actions. Two of these proposed actions were mentioned frequently in both Round 1 and Round 2. The first was related to developing an application for tourists that would contain information regarding how to contact the local health system, including contact details and available infrastructures. This suggestion allowed to slightly modify the wording of Action 6. The second action was related to the same concept and involved offering real-time information on the sanitary situation in the region as a way of increasing their peace of mind; this action was included in the current formulation of A6, which is the following: 'Communicate detailed information regarding the infrastructures and auxiliary services (e.g. health) available at the destination, as well as the real time situation, to the markets of origin.'

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5 Discussion

COVID-19 has caused a global economic crisis like few before. It has affected every aspect and sector of the economy. While some sectors have benefited from lockdowns (e.g. entertainment streaming, IT, especially videoconferencing) (Yamin, 2020), others have been seriously harmed. One of the sectors most affected by COVID-19 is tourism. Many scholars, professional associations, and organizations have proposed ways to reignite tourism while recovering from COVID-19 and in particular once the crisis is over. The variety and spectrum of these proposals has been wide and varied.

The STD framework and the integrative framework that were proposed are appropriate in the process of categorizing these proposals. The framework proposed in Figure 1 to group the actions that have been suggested by different sources in order to overcome COVID-19 was used. The framework has proved valuable in the process of implementing an STD in a territory. With its balanced view, it provides a system that could perhaps help

overcome several of the main issues that have been found with STD implementations to date (Coca-Stefaniak, 2020; Femenia-Serra & Ivars-Baidal, 2021).

In the process of classifying the actions in the dimensions, it was possible to analyze whether there were dimensions to which no actions were assigned. In the case at hand, only two of the 18 dimensions did not have any assigned actions. In the case of the dimension "accessibility and inclusivity," which is part of the "smart tourists" area, there were some mentions of actions, but the connection to the recovery of COVID-19 was not justified. This is not to say that accessibility and inclusivity are not relevant. In fact, the exact opposite is true. Accessibility and inclusivity are so relevant that they should always be assigned a high priority, regardless of the fact that a destination is trying to recover from a crisis. The case of the dimension "sustainable infrastructures" in the area "smart sustainability," is similar. It is difficult to justify including actions in this area that will support recovery from the COVID-19 crisis. As in the previous case, this issue is one that should be given attention by tourism policy makers independently of the situation. However, it must be recognized that in several cases, the funds that are currently being allocated by governments for the recovery of tourism include investments in sustainable infrastructures as a way to inject resources in the sector and accelerate the recovery process.

While this research has used the proposed framework to classify actions that have been previously suggested by scholars, business associations, and business professionals, it is also possible to apply the framework as a starting point to develop a list of possible actions. This strategy could prove useful in future research, when analyzing other topics around STD. In this case, and taking into account the specific situation and the large number of actions that had already been proposed, it was deemed more interesting to follow the proposed path.

This research specifically deals with the case of islands. In fact, one of the actions most frequently mentioned in reports and seminars has been to boost proximity tourism (Romagosa, 2020), which would enable tourists to travel with their own means (e.g. a car) and perhaps take shorter, more frequent trips. However, in the case of islands where tourism is a significant part of their GDP and where the number of incoming tourists to inhabitants is a ratio of 5:1 or higher, this proposal of focusing on proximity tourism is invalid. This research deals with these isolated territories in order to analyze in an integrated way the development of an STD.

Two of the 20 proposed actions did not receive a high agreement rating and were consequently dropped. The other 18 actions were agreed on with a level between 3.64 and 4.75 based on a 1-to-5 scale. Examining these 18 actions, it is clear what an STD capable of facing a crisis such as COVID-19 is, at least in the case of island destinations. First, in an STD, not only traditional tourism sectors are developed but also complementary sectors around tourism, thus avoiding excessive dependence on tourism (Weaver, 2017). Second, measures are enacted in a timely manner to address any crisis that may arise. In the case of the current crisis, measures such as educating employees on how to behave within the existing restrictions guarantee integration between, for example, residents, employees, and tourists. Third, an STD displays a high level of connectivity with the origin markets to explain issues such as the ancillary services available or the

exact health situation of the destination (Rodríguez-Díaz & Espino-Rodríguez, 2008). This approach ensures that a proper destination customer relationship management is implemented. Fourth, an STD must know the tourists who arrive, their health state and interests, and their movements in the territory. Fifth, in an STD, governance is correctly implemented with supportive fiscal measures when required and centralized control. Last, an STD must exhibit a high level of collaboration between all agents and stakeholders.

Of the 20 proposals that were distributed to the experts, seven stood out for achieving agreement and feasibility levels above 4: guaranteeing the safety of residents and employees (A10), reeducating employees (A9), developing new business models (A2), communicating with the origin markets about the infrastructures and auxiliary services available (A6), conducting communication campaigns (A5), using social media monitoring to capture the concerns of visitors (A4), and collaborating between agents in the destination (A12).

Eight proposals got a level higher than 4 in agreement or feasibility and lower than 4 in the other dimension. Last, three of the proposals achieved agreement and feasibility levels lower than 4 but higher than 3, and therefore were not dropped: hiring personnel for contact tracing (A20), developing new experiences to guarantee physical distancing (A8), and requiring tourists to use contact tracing applications (A18). It should be noted that this research was conducted between May and July 2020, months in which contact tracing applications were just being launched, and a degree of resentment and fear of using this type of application was present.

Previous research has already demonstrated the value of the STD framework to manage crises (Gretzel & Scarpino-Johns, 2018; Lalicic & Önder, 2018). The results of this research affirm this finding in a specific context. Actions directly connected to the main capabilities of STDs have obtained a high level of agreement and feasibility, such as those aimed at improving the collaboration between the public and the private sectors (A12), improving communication with the markets of origin (A6 and A5), and creating a platform that includes behavioral data and tourism monitoring (A17).

A global view of the proposals and their results shows that the experts considered it necessary to implement two types of actions to overcome the COVID-19 crisis in an island destination. The first type is soft actions, which include retraining workers in the sector, marketing and communication campaigns, and social media monitoring. The second category is actions that reduce territories' dependence on traditional tourism by developing complementary and innovative business models related to tourism. The action oriented to developing other economic sectors apart from tourism reached a good level of agreement (4.33) but a low level of feasibility (3.08).

This second category, which concerns reducing the dependence of a territory on traditional tourism, includes a series of proposals that can be considered to be public policies more than actions (Joppe, 2018). The two main proposals in this area (namely, A1 and A2) should now be deployed into specific actions, likely more than one action for each of the two proposals. However, Joppe (2018) recognized that policy is a fuzzy term, that generally refers to a decision or an action.

Although some of the research participants proposed new actions, most of these proposals were already included in the original proposals or could be included by small changes to the wording. It seems that the global framework that was proposed in this research served as a way to ensure that no relevant areas of an STD were left behind.

In the process of gathering actions, the utopian view mentioned by Gretzel (2020) was avoided by specifically including questions regarding the feasibility of the actions. In fact, the proposals that were dropped were the two with currently low feasibility, one because of its current limited technological capabilities (virtual reality [VR] and teletransportation) to replace traditional tourism models, and the other one because of the massive impact it could have in the industry (stopping tourism in a planned manner every certain number of years).

Lastly, most of the actions that were compiled and validated are oriented more toward recovering the tourism sector than to reinventing the tourism sector through taking advantage of the crisis situation. Although some of the sources that were examined did mention the need to reconceptualize the tourism sector, very few specific actions were found in this regard. The only two relevant actions are A1, "Develop and promote new economic sectors other than tourism to avoid excessive dependence on the tourism sector in the territory" and A2, "Develop new business models around tourism (e.g. knowledge-intensive services, services based on digital skills, and incubators for tourism projects)." While A2 received a high level of agreement and feasibility, A1 received a high level of agreement, but a relatively lower level of feasibility.

6 Conclusions

The academic literature and professional documents approach the concept of STDs from a wide array of perspectives, leading to the inclusion of many different areas and proposals. In some instances, the implementation proposals have been unclear. When some type of implementation has occurred, IT has been one of the gravitational forces surrounding the implementation. In many cases, smart is associated with technology. COVID-19 has clearly shown the fragility and delicacy of tourism. Smartness can be used to develop destination management that places destinations in a better place to face situations like the COVID-19 crisis.

This research started by creating a balanced and integrated framework to develop an STD. This framework is shown in Figure 1 and is composed of 6 main areas with 3 dimensions each, for a total of 18 dimensions. With this framework, a methodology was implemented with two objectives. The first one was to map a large set of actions that were derived from different sources, such as online conferences and official documents from various associations, with the aim of improving the destination. With the use of the framework, this set of actions was reduced to 20, and it was possible to verify that no relevant areas had been left behind.

The second objective was to validate these measures with a group of experts by means of a Delphi method with 36 experts from all sectors across the tourism industry to analyze the case of island destinations, specifically the case of Gran Canaria, in the Canary Islands. Each action was valued regarding agreement, cost, and feasibility.

In the process of overcoming the COVID-19 crisis, one of the measures proposed most frequently has been for destinations to concentrate on proximity tourism and for residents to consider going to near destinations. While this logic is valid for many destinations that are reachable by automobile, in the case of islands or faraway destinations that are highly dependent on external tourism, this alternative is not valid. This research has addressed this dilemma by proposing a method to allow tourists to travel in a safe and reliable way while guaranteeing the safety of residents.

This research is not without limitations, which open possible avenues for future research. The case of one tourism destination with certain specific characteristics was used. The actions that best fit this destination will probably not all be suitable for every destination, and therefore the framework and actions should be tested in other destinations, and specially in other types of destinations. Second, due to the current stressful environment, some of the participants that the researchers would have liked to include in the Delphi panel were not willing to dedicate the necessary time required to participate when this research took place. Third, this research was conducted during the COVID-19 crisis. Thus, it is natural to expect the results to be biased by how the crisis unfolded. This bias was even clear in changes to answers and the reasons for the changes expressed by the participants between Round 1 and Round 2. Future research should verify these results in other destinations and once the COVID-19 crisis has passed. Also, many of the proposed measures are currently being implemented in various destinations. Thus, testing their effectiveness could also be useful. Lastly, no specific actions regarding the smart sustainable tourism economy dimension were proposed; both actions included in the dimension were derived from the smart economy dimension. Therefore, it would be valuable to provide a deeper analysis in that dimension to identify specific actions.

6.1 Managerial implications

This research provides managers and policy makers with several tools. First, it provides a methodology to ascertain and inventory a large number of actions proposed around one topic. Second, it provides a framework to sort these actions in a logical and coherent way. Instead of generic frameworks as have been proposed in the literature (e.g. Koo et al., 2016) or imbalanced frameworks (e.g. Shafiee et al., 2019), a balanced framework with areas of similar importance was proposed. Once the actions have been gathered, managers can then decide whether they consider it necessary to validate these actions with a group of experts using the Delphi methodology or another methodology (e.g. focus groups).

The results of this research also show that tourism managers need to not only consider the safety of tourists as has extensively been mentioned in the literature (Seabra et al., 2013; Tasci & Boylu, 2010), but also that of tourism employees. Relatedly, worker retraining was perceived by the experts as key for the post-COVID-19 era to recover tourism. Marketing actions were also considered to be key, both to promote the destinations and to clearly explain the actions that have been developed at the destination to guarantee everyone's safety. Last, there was agreement regarding the need to discover economic alternatives for tourist areas that are highly dependent on the tourism economy. This is not an action that can be performed in a matter of months. It will likely require years or even decades, but it is clear that COVID-19 has sent a global warning signal to tourism destinations.

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Appendix A. Description of the actions

A1 - NEW_SECTORS. *Develop and promote new economic sectors other than tourism to avoid excessive dependence on the tourism sector in the territory*. Many islands that have developed their economic models around tourism currently depend highly on this sector (Weaver, 2017). Numerous island territories (e.g. the Canary Islands in Spain, Macau, and Cape Verde) have a GDP that is highly dependent on tourism (UNWTO, 2019). COVID-19 and the complete cessation of tourism operations have revealed the danger behind this model.

A2 - NEW_BUSS_M. *Develop new business models around tourism (e.g. knowledge-intensive services, services based on digital skills, and incubators for tourism projects)*. As with the NEW_SECTORS action, another area that many tourism destinations must address to become an STD is developing new business models around tourism. In the case of destinations with a high dependence on tourism, this means creating other types of business models that take advantage of tourism.

A3 - STIM_DEMAND. *Design and implement communication and incentive campaigns (usually economic) aimed at stimulating demand in the home markets*. In several places, this has been proposed as a possible measure (OECD, 2020) to stimulate demand. Actions of this option type have already been implemented by several tourism destinations.

A4 - SM_MONITOR. *Develop social media monitoring systems to capture the concerns of visitors (current and potential) in real time and respond effectively and immediately by implementing corrective actions*. The COVID-19 crisis has been replete with constant change. Areas that seemed safe experienced sudden spikes. Citizens and tourists witnessed inappropriate behaviors and shared pictures online. In this situation, a constant monitoring of social media to respond adequately appears to be a vital means to transmit a secure and responsible image of the destination (Wang et al., 2013).

A5 - COMM_CAM. *Design and implement communication campaigns on measures applied to manage the crisis in the destination: current status, measures taken*. COVID-19 has not affected all territories equally and has not evolved homogeneously. Thus, tourists from different origins may have doubts about the exact state of the destination they are considering. This is especially relevant when the destination is an island, which due to its natural isolation may have different conditions from nearby territories. The Canary Islands, for example, have been affected much less severely than mainland Spain (Google, 2020).

A6 - ANCILLARY. *Communicate detailed information regarding the infrastructures and auxiliary services (e.g. health) available at the destination, as well as the real time situation, to the markets of origin*. COVID-19 is a sanitary crisis. Even with a vaccine, uncertainty will be the norm now and in the future. Tourists often travel to zones that are less developed than their origin area. Thus, fear of the sanitary infrastructures at the destination can be a relevant factor (Rodríguez-Díaz & Espino-Rodríguez, 2008). If the destination has a good sanitary infrastructure, communicating this situation properly is key in the recovery process.

A7 - SANITARY_CTRL. *Carry out sanitary controls at the entrance to the destination (or even as a requirement before leaving the region of origin)*. COVID-19 is a complex sanitary virus. Thus, it has been proposed to develop sanitary controls during the transit from the origin to the destination region. This is especially relevant for island destinations, where all tourists arrive by plane or boat. These controls could take place before the departure (while waiting for boarding), during the transit, or at the arrival at the destination. There are two main challenges for these actions: the availability of faster tests than those currently available and the need for an action plan if cases are found in a group of travelers.

A8 - NEW_EXPERIENCES. *Develop new tourist experiences and modify current ones to guarantee the physical distancing between participants*. Three sanitary measures have been recommended by all health organizations to fight COVID-19: wearing facemasks, maintaining physical distancing, and washing hands frequently. One of the problems of most tourist activities is that it is not easy to maintain physical distancing between the participants. Thus, the necessity to develop new tourist experiences that can ensure this distancing (Lapointe, 2020) has been termed "6-foot tourism."

A9 - EDUCATE. *Educate tourist workers about new forms of interpersonal relationships: sanitary measures, interpersonal relationships with a facemask (loss of facial expression), and the need to avoid direct contact (e.g. handshaking)*. Tourism organization managers have warned that due to wearing facemasks and having to avoid direct contact through customary salutation forms such as handshaking, a certain sense of hospitality and warmth could be lost. Thus, it could be relevant to teach tourism workers how to handle this situation to avoid tourists feeling unwelcome. In the specific case of this study, it must be considered that showing sincere warmth and hospitality are important to tourists visiting many destinations, such as the Canary Islands (Ariffin & Maghzi, 2012).

A10 - SAFETY_EMPL_RES. *Develop measures to guarantee the safety of tourist employees and residents*. As tourists need to feel confident regarding the destination they are going to visit, residents also need to be confident that the tourists arriving at a region will not cause a spike in cases.

A11 - STOP_DEST. *Plan to periodically stop the arrival of tourists for a set period (e.g, stop X months every Y years; X and Y must be determined) with the aim of regenerating the destination from the environmental and infrastructure perspectives.* The effect of tourism on the environment is a relevant and ongoing debate (Holden, 2016), with over-tourism having gained attention lately (Seraphin et al., 2018). COVID-19 has resulted in the opposite experience: destinations with no tourists at all. Thus, the media has been full of news about surprising recoveries of natural areas and animals, such as dolphins in the Venice Laguna and the regeneration of the sand dunes in Gran Canaria. Just a few months of no tourism have allowed destinations to recuperate from many years of tourism. Although recent studies have shown that things are not as simple as they might initially appear (Newsome, 2020), it has been proposed that COVID-19 may be showing a way to end over-tourism (Koh, 2020).

A12 - COLLABORATION. *Increase collaboration between agents in the destination (public and private sectors, between companies, and between public and private sectors*

and the universities). This measure is not specifically connected to the management of the post-COVID-19 situation. However, it has repeatedly been stated that collaboration between all agents and stakeholders in the destination will be key to overcoming the crisis (Yeh, 2020).

A13 - CRISIS_MNG. *Develop a model for global crisis management under a unified command and control (national or regional)*. While some of the islands mentioned in this study are independent territories (e.g. Cape Verde), others belong to a country. Gran Canaria is an example of the latter. It belongs to the Canary Islands, which in turn belong to Spain, which is a part of Europe. In this situation, and under a crisis such as COVID-19, there can be contradictory perspectives of each of the governments involved (European, Spanish, regional, and insular). One of the proposed measures is that in a similar situation, the control of the crisis is given to a global authority to manage the crisis appropriately.

A14 - ECONOMIC_MEAS. *Implement economic measures aimed at companies in the tourism sector, such as tax exemptions, soft loans, financing, and bailouts*. In many regions, tourism is currently at less than 15% of what it used to be. Tourism companies such as airlines (International Civil Aviation Organization, 2020) and hotels (Gursoy & Chi, 2020) have seriously suffered and will continue to suffer in this situation (Bulchand-Gidumal & Melián-González, 2021). One of the most frequently suggested measures is developing economic measures to assist tourism companies weather the crisis. Without these types of measures, many tourism companies in different sectors will probably not survive the crisis (Gössling et al., 2020).

A15 - REIMBURSE. *Make agreements with airlines and tour operators to ensure that clients who purchase tourism services in advance will receive full refunds immediately if necessary*. One of the main effects that the crisis has had on tourists is that many tourists have found it difficult to obtain a reimbursement for tourist services they purchased in advance. For example, many airlines have been reluctant to reimburse customers even if the law specifies that they must do so within a specific timeframe (Bulchand-Gidumal & Melián-González, 2021). Thus, by guaranteeing refunds, this action would be oriented to increase the confidence of tourists in a situation of extreme uncertainty.

A16 - VR. *Develop business models in VR to replace face-to-face activities (non-traveling tourist)*. VR has been proposed as a way to overcome COVID-19 (Kwok & Koh, 2020). The concept is to develop alternatives based on VR that could be used while travelling is not possible.

A17 - PLATFORM. *Implement a platform for the consolidation of behavioral data and tourist monitoring, with the possibility of immediately contacting each individual (in case of emergency)*. This action fits within the scope of contact tracing and would guarantee that every tourist who enters the territory is identified and that the sanitary administration of the destination has an easy way to contact the individual. This contact could be necessary due to sanitary reasons or if some type of repatriation measure needs to be implemented.

A18 - APP_REQUIRED. *Require tourists and residents to use automated contact tracing applications (without geolocation or centralized control)*. Several countries, including

most European countries, have developed contact tracing mobile applications, and there are processes aimed at integrating the applications of different countries. However, while wearing facemasks has been compulsory in many countries at times during the crisis, few countries have imposed the installation of contact tracing applications by their residents or visitors.

A19 - FLIGHT_SHAME. *Implement actions aimed at reducing flight shame (the shame of flying due to the impact on the climate), such as imposing a carbon footprint compensation or using electric vehicles at the destinations*. This action is also not directly related to the COVID-19 crisis. However, there is a movement in certain countries promoting reducing air travel significantly, at least for leisure purposes. This restriction could significantly impact island destinations. Additionally, if added to the advice to enhance proximity tourism due to COVID-19, the effect on islands could be multiplied.

A20 - CONT_TRACING. *Hire the necessary personnel to trace contacts among residents and tourists*. While most regions have hired contact tracing staff, in most cases the number of people has been sized taking into account just residents but not tourists.