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# Sustainable Tourism Development and Climate Change: A Supply-Side Perspective

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**Abstract:** *This paper presents and discusses findings of research carried out on a sample of 141 tourism stakeholders with two tourism destinations located in Sardinia, Italy. Specifically, it investigates: (1) the priorities that respondents consider essential to attain sustainability and competitiveness for their business and the destination as a whole, (2) the main barriers to tourism sustainability and (3) their attitude towards climate change and its influence on tourism. Our contribution to the literature, along with managerial implications, is discussed and suggestions for future research are given.*

**Keywords:** Supply-side perspective, tourism sustainability, destination competitiveness, barriers, climate change.

**JEL Classification:** Q01, Q56, Z32

**Biographical note:** Giacomo Del Chiappa is an Associate Professor of Marketing at the University of Sassari, Italy. He is also associate researcher at CRENoS and senior research fellow at the School of Tourism and Hospitality, University of Johannesburg. His research interests are related to destination governance and branding, consumer behaviour, and digital marketing. Stefano Usai is a Professor of Applied Economics at the University of Cagliari and researcher of CRENoS. His research focus is on regional economic development. Antonio Cocco is a Junior researcher at CRENoS and the Department of Economics and Business, University of Cagliari, Italy. Marcello Atzeni is a Junior researcher at CRENoS and the Department of Economics and Business, University of Cagliari, Italy.

## 1 INTRODUCTION

In recent decades, tourism has been experiencing a rapid, continuous and virtually uninterrupted expansion worldwide, becoming one of the world's largest economic sectors and contributing to 10.2% of global GDP (WTTC, 2017). In 2017, the total number of international tourist arrivals had risen to 1.32 billion, attaining a growth rate of 6.8% over 2016 (WTTC, 2017). Tourism forecasts revealed that international arrivals were expected to increase by 3.3% a year between 2010 and 2030 and to reach 1.8 billion by 2030. For this reason, tourism has become a pivotal sector

in economies across the world. However, even though tourism can generate positive economic, environmental and social benefits, it also generates negative externalities that impact the host destination and the quality of life in local communities and/or the socio-economic and environmental ecosystems (e.g. global warming), mainly due to intentional and unintentional business conduct and travel behaviour of individuals (e.g. Lee et al., 2013; Van Doorn and Verhoef, 2011).

In this scenario, it is easy to understand how important it is for tourism destinations to reach a sustainable tourism development that is able to maximise positive tourism

impacts while minimising negatives ones (Kim, Kim and Heo, 2016; Nunkoo and Gursoy, 2017; Woo, Kim and Uysal, 2015). Nowadays, researchers concur that sustainability is one of the most important elements of destination competitiveness (Ritchie and Crouch, 2003). To ensure that the economic, socio-cultural and environmental impacts of tourism development outweigh the related costs and that tourism sustainability can be achieved, collaborative policymaking among local authorities, government agencies, businesses and host communities must occur (Vernon et al., 2005). Hence, considering local stakeholders' views is necessary to obtain their support for tourism projects (Ap, 1992) and is crucial to achieve tourism sustainability (Woo et al., 2015) and its long-term success (e.g. Fotiadis et al., 2016). Sustainability and community-based tourism development is particularly relevant for island tourism destinations and along coastal areas given the slew of economic, environmental and social challenges (Timothy, 1999).

Significant research has been devoted to analyse residents' perceptions and attitudes towards tourism sustainability and its meanings (e.g. Ap, 1992; Nunkoo et al., 2010; Nunkoo and Ramkissoon, 2010). Nevertheless, there is still limited academic research aimed at analysing the views and meanings that tourism businesses have in mind regarding tourism sustainability and the effects that climate change can exert on tourism development (e.g. Torres-Delgado and Palomeque, 2014); this fact is particularly evident in the context of coastal tourism destinations in Italy, where, to the best of the authors' knowledge, there have been no published academic papers devoted to this area of research.

This study was, therefore, carried out to contribute to filling in this gap. To achieve this goal, the study discusses the results of a quantitative analysis performed in two coastal tourism destinations: Villasimius and the Tepilora, Rio Posada and Montalbo biosphere reserve, located on the island of Sardinia, Italy. Adopting a supply-side perspective, this study aims to analyse: (1) the priorities that respondents consider essential to attain sustainability and competitiveness for their business and the destination as a whole, (2) the main barriers to tourism sustainability and (3) their attitude towards climate change and its influence on tourism.

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## 2 LITERATURE REVIEW

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Over the last few decades, the international debate on sustainable tourism development has increased significantly. Nowadays, researchers widely recognise that sustainability is one of the most important elements pertaining to destination competitiveness—if not the most important (Ritchie and Crouch, 2003; Fiocca and Sebastiani, 2009). Hence, researchers agree that only a competitive destination is able to create and deliver tourism experiences which are able to satisfy the needs and expectations of visitors while still ensuring that natural and cultural local resources are effectively preserved and valued and that tourism development still guarantees the long-term well-being and quality of life of the local community (Bahar and Kozack, 2007; Ritchie and Crouch, 2003; Weaver, 2011). To achieve

this aim, considerable attention must be given to ensure that everything is done to properly regulate tourism development in a way that tourist experiences can be created and delivered (i.e. the supply-side perspective) and then experienced (i.e. the demand-side perspective) while trying to minimise the effects that business activities individual behaviours can generate in term of global warming and climate change—two interrelated phenomena that are largely able to undermine tourism sustainability (e.g. Agrawala, 2007; Scott, 2011; Weaver, 2011), as widely recognised by existing studies (Korstanje and Babu, 2012); this is particularly evident for coastal and island tourism destinations whose tourism development is particularly sensitive to and threatened by the rising of sea level or of sea temperatures that can occur as a consequence of global warming and climate change (Christou & Nella, 2010; Klint et al., 2012; Payet, 2008).

As largely emphasized by existing literature, for tourism sustainability to occur, strong and effective networking among local authorities, government agencies, businesses and host communities is needed, jointly working to shape tourism strategy and projects (Vernon et al., 2005). In this context, local authorities and DMOs (Destination Management Organizations) should facilitate interaction among local authorities, public entities, companies and local communities (Chen, 2006; Hamilton, Maddison and Tol, 2005; Jamal and Getz, 1995; Vernon et al., 2005) to favour knowledge and information sharing or dissemination (Del Chiappa and Baggio, 2015; Komninos, 2008). Furthermore, an effort should be done to analyse the opinions, views and attitudes that both residents and tourism organisations (Woo, Kim and Uysal, 2015) have towards tourism development and its impacts on the destination. Then, once having analysed such perceptions and attitudes, policy makers and destination marketers should involve the local community and tourism stakeholders in tourism planning (Mitchell & Reid, 2001); thus, making them the subject of tourism development (Fredline and Faulkner, 2000) and allowing them to act as stewards of the natural and cultural resources (Tsaour, Lin, and Lin, 2006).

According to existing studies (e.g. Crouch, 2011), when trying to involve local stakeholders in tourism planning, policy makers and destination marketers should question themselves about what kind of stakeholders should be involved, when (systematically or only for important projects or decisions with high impact on the territory) and how (in which manner and 'condition') they should participate. Accordingly, researchers concur that the most preferred stakeholders should have broad and direct knowledge of tourism phenomena, own strategic resources and be directly or indirectly involved in delivering tourism services, products and experiences to visitors (tourist accommodation, restaurants, tour operators, tourist attractions, agri-food producers, beach resorts, tourist guides agencies, cultural operators, entertainment, leisure sectors, taxi drivers, etc.). Furthermore, the most preferred stakeholders should be chosen among those owing a proper consciousness about the meanings and dimensions of tourism sustainability and its relevant influence on destination competitiveness. Doing so will allow policy makers and destination marketers to count on stakeholders

who will act as stewards and ambassadors of tourism sustainability for their destinations.

According to existing studies (e.g. Tosun, 2000), once the proper stakeholders have been selected, policy makers and destination marketers should act in order to remove any operational (e.g. lack of coordination among stakeholders), structural (e.g. lack of financial resources, skills and competences) and cultural (apathy) barriers that can prevent them from actually being involved in tourism planning and development (Tosun, 2000).

Based on this strand of investigation, several researchers have quite recently called for future research aimed at exploring and analysing actual perceptions and attitudes that tourism businesses show towards sustainability, climate change and their interrelation with destination competitiveness (Torres-Delgado and Palomeque, 2014). This study intends to further contribute to deepen the scientific debate about this rather under-investigated research area by presenting and discussing the findings of a quantitative analysis carried out on a convenience sample of 141 tourism stakeholders in two sustainable-labelled maritime tourism destinations: Villasimius and the Tepilora, Rio Posada and Montalbo biosphere reserve (Sardinia, Italy).

Our findings will make a valuable contribution to the international scientific debate, which still lacks stakeholder-based studies (Miller et al., 2010; Torres-Delgado and Palomeque, 2014), especially in the context of islands-related tourism destination (e.g. Del Chiappa and Atzeni, 2015; Del Chiappa, Atzeni and Ghasemi, 2016).

Moreover, results will facilitate providing useful information to policy makers, destination marketers and tourism business attempting to improve sustainability and competitiveness of their destinations, along with increasing the extent to which local stakeholders have a proper consciousness about climate change—its effect over the tourism development and the most effective strategies and actions that could be adopted to cope with it.

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### 3 METHODOLOGY

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This study was conducted in two sustainable-labelled destinations: Villasimius (south-western zone, total surface of 58.2 km<sup>2</sup>) and the Tepilora, Rio Posada and Montalbo biosphere reserve (west-central zone), which are located in the island of Sardinia, Italy. The research activities were related to the Strategies for a Sustainable Tourism (STRATUS) project co-financed by the Programma Interreg Italia-Francia marittimo 2014–2020; all the authors of this study were involved in the research activities.

Villasimius is a designated marine protected area (MPA) located in the south coast of Sardinia, which, in recent years, has received acknowledgement from the European Commission as a sustainable European destination for its environment and tourism (according to the European tourism indicators system—ETIS). Tepilora, Rio Posada and Monalbo area is a regional park established in 2014 located in the northeast of Sardinia whose territory is part of a biosphere reserve (total surface area of over 140,000 hectares) that has been included in the 2017 list of the

World Network of Biosphere and then later recognised as a UNESCO site; the geographical area considered for the purposes of this study is the one belonging to the municipalities of Siniscola and Posada (total surface area of almost 23,400 hectares). It is worth noting that the tourism sector is highly fragmented in the Region of Sardinia and most of the organisations are SMEs, if not micro-organisations.

For the purpose of this study, a structured questionnaire was developed based on prior literature, complemented by site-specific input gained by a prior qualitative study carried out in the target areas, aimed at exploring the views of local stakeholders towards tourism sustainability and climate change (Del Chiappa, 2018). The questionnaire was divided into three sections. In the first part, respondents were asked to prioritise a list of different actions that they considered to be relevant to increase the sustainability of their business and of the destination as a whole; a five-point Likert scale (1 = not a priority, 5 = an essential priority) was used to measure their answers. In the second part respondents were asked to assess their level of agreement with a list of items specifically chosen to allow respondents to self-assess the main barriers to tourism sustainability and to investigate their views about climate change, its influence on tourism and the interventions that would need to be put into place in order to cope with it. Finally, the third part asked respondents to provide general information about the organisation where they work.

Data were collected during the period July–October 2017 in Villasimius and February–May 2018 in Tepilora, Rio Posada and Montalbo biosphere reserve; both the MPA in Villasimius and the Tepilora, Rio Posada and Montalbo area kindly and effectively supported the data collection. The questionnaire was administered—face-to-face and online—to a sample of local private stakeholders who were included in a database we obtained from the local tourist offices of the two tourism destinations (Villasimius: N = 115; Tepilora: N = 188).

By the end of the data collection period, we had obtained 141 complete questionnaires, 57 in Villasimius and 84 from Tepilora, Rio Posada and Montalbo (MAB) area. The data were entered into SPSS (version 19) and a series of descriptive statistics were run for the purposes of our study.

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### 4 FINDINGS AND DISCUSSION

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The overall sample includes 141 tourism operators, 57 from Villasimius (response rate: 49.56%) and 84 from the Tepilora, Rio Posada and Montalbo area (response rate: 44.68%). Majority of the respondents were reported to be owners (Villasimius: 59.65%; Tepilora: 63.7%) or managers (Villasimius: 24.56%; Tepilora: 24.4%) of hotels (Villasimius: 35.09%; Tepilora: 16.6%), B&Bs (Villasimius: 12.28%; Tepilora: 28.57%) or restaurants and bars (Villasimius: 12.28%; Tepilora: 11.9%). Overall, the findings reveal that respondents think that the most relevant priorities to achieve sustainability and competitiveness in their businesses are related to staff training (M = 4.61; S.D. = 0.803), finding new target markets (M = 4.58, S.D. = 0.793), increasing the use of social media (M = 4.58, S.D. =

0.786), increasing the quality standard of their services ( $M = 4.56$ ;  $S.D. = 0.857$ ) and making their offerings accessible to all ( $M = 4.49$ ,  $S.D. = 0.944$ ) (Table 1).

*Table 1 – Priorities to increase sustainability and competitiveness of tourism organizations*

	<i>M.</i>	<i>S.D.</i>
A1. Service and product innovation	4.35	0.904
A2. To increase the quality standard of our services	<b>4.56</b>	0.857
A3. To strengthen the commitment towards environmentally friendly action	4.5	0.872
A4. To make use of environmentally friendly certifications	4.15	1.167
A5. To increase the use of Internet and social media for promotion/distribution	<b>4.58</b>	0.786
A6. To make our services accessible to all	<b>4.49</b>	0.944
A7. To better promote our commitment towards the environment	4.39	0.916
A8. To find new segments to be targeted	<b>4.58</b>	0.793
A9. To measure and monitor customer satisfaction over time	4.48	0.872
A10. To improve our abilities in online reputation management	4.33	1.024
A11. To increase training programmes	<b>4.61</b>	0.803

*Table 2 – Priorities to increase destination sustainability and competitiveness*

	<i>Mean</i>	<i>Dev.st</i>
B1. To innovate tourist offerings by creating non-seaside-based experiences	<b>4.62</b>	<b>0.828</b>
B2. To increase the safety of the destination	4.26	1.071
B3. To increase hygienic standards (e.g. public toilets)	4.39	0.968
B4. To increase the effectiveness of the waste management systems	4.39	0.958
B5. To increase the use of Internet and social media for promotion/distribution	<b>4.68</b>	<b>0.684</b>
B6. To make the destination accessible to all	4.59	0.872
B7. To make it easier to reach the destination (i.e. accessibility)	<b>4.62</b>	<b>0.875</b>
B8. To enhance the training system by increasing the professionalism standards	<b>4.63</b>	<b>0.792</b>
B9. To further enhance the local hospitality culture	4.61	0.809
B10. To promote local and environmental means of transport	4.06	1.217
B11. To involve the overall local community in tourist planning	4.46	0.901
B12. To turn sustainability into a way of life rather than merely a part of a certification process	4.47	0.932
B13. To promote stronger networking among public and private stakeholders	4.47	0.92
B14. To increase the participation of local tourism operators in tourism planning	<b>4.66</b>	<b>0.808</b>
B15. To promote the destination by relying more on local authenticity and identity	<b>4.67</b>	<b>0.74</b>

Table 2 provides the respondents' views regarding the main priorities that they thought should be followed in order to enhance tourism sustainability and competitiveness for the overall destination. Overall, Table 2 indicates that people agree with the idea that it is extremely relevant to: increase capabilities of using social media when running destination marketing activities and operations ( $M = 4.68$ ;  $S.D. = 0.684$ ); rely more on local identity and authenticity when promoting the destination ( $M = 4.67$ ;  $S.D. = 0.74$ ); increase the extent to which local stakeholders are involved in tourism planning ( $M = 4.66$ ;  $S.D. = 0.808$ ); further strengthen the local training system to increase the standard of professionalism of local stakeholders ( $M = 4.63$ ;  $S.D. = 0.792$ ); enhance the accessibility to the destination ( $M =$

4.62;  $S.D. = 0.875$ ) and innovate tourism offerings by creating non-seaside-based tourist experiences ( $M = 4.62$ ;  $S.D. = 0.828$ ).

Furthermore, the findings revealed that tourism stakeholders think that tourism sustainability can enhance a destination's competitiveness (i.e. 'Improving sustainability of the destination would significantly increase the number of arrivals':  $M = 4.35$ ;  $S.D. = 0.94$ ; 'I firmly believe that tourists would be willing to pay more to spend their holidays in a sustainable tourism destination':  $M = 4.08$ ) and that the public sector should make financial support available to private organisations for the improvement of tourism sustainability at the destinations ( $M = 4.33$ ;  $S.D. = 0.909$ ) (Table 3).

*Table 3 – Operators' perception about sustainability and competitiveness*

	<i>M.</i>	<i>S.D.</i>
C1. Improving destination sustainability significantly increases the number of arrivals	4.35	0.94
C2. I am willing to invest to make tourism development in my area more sustainable	3.97	1.191
C3. I firmly believe that tourists would be willing to pay more to spend their holidays in a sustainable tourism destination	4.08	1.16
C4. A sustainable tourism development should be fostered mainly by financial support provided by public institutions and given to private organisations	4.33	0.909

When respondents were asked to report the main barriers to sustainable tourism development in their geographical areas, they referred, in a decreasing order, to the inertia and inefficacy that they think is affecting the regional and local institutions and bureaucracy ( $M = 4.42$ ;  $S.D. = 0.982$ ), the scant availability of financial resources ( $M = 4.06$ ;  $S.D. = 1.138$ ) and, finally, a relatively poor level of networking among local stakeholders ( $M = 3.92$ ;  $S.D. = 1.046$ ).

*Table 4 – Barriers to tourism sustainability and competitiveness.*

	<i>M.</i>	<i>S.D.</i>
D1. The limited availability of financial resources makes it difficult to invest in sustainable-oriented business activities	4.06	1.138
D2. The bureaucracy and the inertia of the public sector make it difficult to invest in sustainable-oriented business activities	4.42	0.982
D3. The poor networking among local operators makes it difficult to implement sustainable-oriented activities	3.92	1.046

Respondents perceive climate change as a real and actual problem affecting tourism ( $M = 4.06$ ;  $S.D. = 1.253$ ). They believe that training on this topic is useful ( $M = 3.91$ ;  $S.D. = 1.264$ ), albeit still not done enough in their organisation ( $M =$

= 3.34, S.D. = 1.249). In general, respondents seem to be sceptical about the role that each organisation can play in order to alleviate issues related to climate change by changing the way their business is managed ( $M = 3.2$ ; S.D. = 1.38).

Contrarily, they think that the issue needs to be proactively managed by strengthening networking among local, public and private stakeholders; thus, increasing their ability to jointly sensitise the regional government towards the issue ( $M = 3.8$ ; S.D. = 1.275) and to jointly innovate better offerings (both at organisation-based and destination-based levels) to proactively cope and anticipate climate change and its effects on tourism ( $M = 3.98$ ; S.D. = 1.222) (Table 5).

Table 5 – Operators perception about climate change.

	<i>M</i>	<i>S.D.</i>
E1. Climate change is a real and actual problem	4.06	1.2
E2. Training on climate change is useful	3.91	1.2
E3. Climate change significantly affects the tourism sector	3.71	1.2
E4. In my organisation, we have enough training on climate change and its role in tourism	3.34	1.2
E5. By changing the way the business is managed, we can do a lot to reduce climate change	3.2	1.1
E6. Local public and private stakeholders should jointly interact to sensitise regional institutions regarding climate change issues	3.8	1.2
E7. Local public and private stakeholders should jointly interact to innovate better tourism offerings in order to proactively cope with climate change issues	3.98	1.2

Finally, a series of independent t-tests was run to investigate whether stakeholders' views towards tourism sustainability, its link with destination competitiveness and climate change significantly differed, based on the specific tourist area (i.e. Villasimius versus Tepilora) considered in the present study (Table 6).

The findings revealed that local stakeholders in the two touristic areas significantly differed in their views about the need to further strengthen the availability and the use of eco-friendly local means of transport (e.g. electric cars and shuttles, etc.) ( $t = 2.938$ ,  $p = 0.004$ ) and in their views about tourists' willingness to pay a premium price to spend their holiday in a sustainable tourism destination ( $t = -3.211$ ;  $p = 0.002$ ). In particular, local stakeholders in Villasimius preferred to further enhance the eco-friendliness of local transport more than in the Tepilora, Rio Posada and Montalbo area (Villasimius:  $M = 4.44$ ; Tepilora:  $M = 3.88$ ); this could be due to the fact that an eco-friendly local transport system is easily implemented in a concentrated geographical area (as in the case of Villasimius). However, in contrast to the stakeholders in Villasimius, respondents in Tepilora thought that tourists would be more willing to pay premium prices to spend their holiday in a sustainable tourism destination (Villasimius:  $M = 3.67$ ; Tepilora:  $M = 4.26$ ).

Table 6 – Comparative analysis t-tests

	Villasimius		Tepilora		Sig.
	<i>M</i>	<i>S.D.</i>	<i>M</i>	<i>S.D.</i>	
A1	4.36	0.819	4.35	0.944	0.975
A2	4.54	0.852	4.57	0.862	0.830
A3	4.64	0.616	4.43	0.962	0.139
A4	3.95	1.227	4.25	1.13	0.112
A5	4.52	0.687	4.61	0.829	0.486
A6	4.43	0.924	4.52	0.955	0.524
A7	4.41	0.682	4.39	1.008	0.864
A8	4.63	0.59	4.56	0.872	0.599
A9	4.63	0.648	4.42	0.952	0.142
A10	4.23	1.027	4.38	1.023	0.382
A11	4.66	0.611	4.59	0.879	0.588
B1.	4.61	0.701	4.62	0.884	0.947
B2.	4.18	1.037	4.3	1.089	0.488
B3.	4.53	0.782	4.33	1.04	0.202
B4.	4.21	1.022	4.48	0.92	0.091
B5.	4.79	0.411	4.62	0.775	0.129
B6.	4.58	0.731	4.59	0.934	0.936
B7.	4.67	0.809	4.6	0.906	0.628
B8.	4.74	0.583	4.58	0.87	0.224
B9.	4.70	0.626	4.57	0.881	0.325
B10.	<b>4.44</b>	<b>0.907</b>	<b>3.88</b>	<b>1.302</b>	<b>0.004</b>
B11.	4.53	0.804	4.43	0.944	0.490
B12.	4.46	0.946	4.48	0.929	0.855
B13.	4.37	0.919	4.52	0.92	0.317
B14.	4.68	0.76	4.65	0.832	0.778
B15.	4.67	0.607	4.67	0.797	0.963
C1.	4.16	1.031	4.02	1.185	0.440
C2.	4.56	0.78	4.36	1.061	0.204
C3.	3.81	1.093	3.98	1.024	0.317
C4.	4.00	1.18	4.08	1.289	0.685
D1.	3.79	1.191	3.97	1.298	0.382
D2.	3.91	1.297	3.62	1.215	0.153
D3.	3.04	1.253	3.48	1.228	0.028
E1.	3.25	1.379	3.18	1.385	0.769
E2.	3.98	1.243	3.72	1.286	0.202
E3.	3.96	1.17	3.99	1.25	0.888
E4.	4.27	1.036	4.39	0.895	0.441
E5.	4.04	1.088	3.93	1.238	0.600
E6.	4.31	0.858	4.34	0.934	0.812
E7.	<b>3.67</b>	<b>1.362</b>	<b>4.26</b>	<b>1.011</b>	<b>0.002</b>

## 5 CONCLUSIONS

This study intended to deepen the scientific debate aimed at analysing stakeholders' views regarding tourism sustainability and the main barriers preventing it, the link that sustainability has with organisation and destination-based competitiveness, their opinion about climate change and the main actions available to cope with it. To achieve this aim, the study presented and discussed the findings of an empirical study carried out in two coastal tourism destinations located in the island of Sardinia—both having a sustainability-label and certification.

On the whole, the findings revealed that the tourism stakeholders agree that enhancing tourism sustainability positively enhances a destination's attractiveness and competitiveness. When thinking about priorities to make their business more sustainable and competitive, they mainly referred to economic (e.g. staff training, quality standard, etc.) and socio-cultural aspects or interventions (e.g. to make their offer accessible to all, etc.). At the destination level, the main priorities are related to the need to increase the effectiveness of social media marketing (i.e. economic sustainability), to rely more on local identity and authenticity when promoting the destination and also increasing the extent to which local stakeholders are involved in tourism planning (i.e. socio-cultural sustainability), to enhance accessibility to the destination and to innovate the tourism offerings by creating non-seaside-based tourism experiences (i.e. economic

sustainability). In general, respondents have a clear picture about the relevance of tourism sustainability as well as the main priorities to further attain it. However, they also perceive that the bureaucracy and inertia characterising public sector, scant availability of financial resources and relatively poor level of networking among local stakeholders are formidable barriers that prevent further exploitation of sustainable tourism development. In this scenario, respondents perceive climate change to be a real and actual problem capable of undermining the tourism sector and its sustainability. Nonetheless, they feel that they are not receiving enough training regarding the topic and call for its betterment. Furthermore, they believe that changing the way each organisation is run will hardly make a difference when trying to cope with climate change. On the contrary, they firmly believe that a strong networking between public and private local stakeholders is required to further sensitise policy actions at the regional level and to innovate better tourism offerings at their destinations. Finally, the findings reveal that stakeholders' views did not significantly differ between the touristic area under investigation and, thus, suggesting that their views are quite homogenous.

Findings of this study are relevant for both researchers and practitioners. From a theoretical point of view, the study contributes to the extant literature by providing an answer to the quite recent call for further studies devoted to analyse stakeholders' views regarding tourism sustainability, the main nature of the barriers preventing it and the issue of climate change. The fact that the study was carried out in coastal tourism destinations has added value, given the still relatively scant academic research in these types of tourist spots—especially considering the broader specific context of Italy (and despite its relevance in the international tourism arena).

Yet, our findings provide useful information for policy makers, destination marketers and tourism businesses attempting to increase tourism sustainability both at both micro and macro levels (i.e., organisation versus destination-based sustainability and competitiveness)—including those hoping to cope with climate change. First, it would be useful to undertake a process to set up a formal DMO that, among traditional tasks and activities, should favour a stronger networking among the private and public stakeholders. Then, of course, this local DMO should effectively interact with the regional DMO to guarantee an effective tourism planning development for the overall regional area. This process is currently moving forward, thanks to the relatively recent regional law formally re-organising its regional governance and establishing the creation of a central DMO, along with a limited number of local DMOs. It is worthy to emphasise that a formal DMO has recently been set up in Villasimius also, as a result of the STRATUS project, wherein research activities related to this study were developed. Furthermore, our findings suggest that policy makers, destination marketers and tourism associations should create and deliver training programmes on climate change and its effects on tourism sector. They should also consider aspects such as local biodiversity conservation and waste/water/energy management systems. Also, training programmes should be

developed in the field of digital marketing, with the aim of rendering local stakeholders more aware about the regional, national and EU-based funding opportunities to develop projects aimed at further increasing tourism sustainability. Finally, actions would be needed to improve accessibility both to and within the destination, also favouring eco-friendly solutions.

Although this study contributes to fill in gaps in the existing knowledge base and suggests some implications for policy makers, destination marketers and hospitality managers, some limitations remain. In particular, it must be acknowledged that the study is highly site-specific and based on a convenient sample. Thus, findings cannot be generalised. In the future, it would be interesting to repeat the study at other national and international tourism destinations, possibly including non-coastal tourism destinations as well (e.g. urban tourism destinations, rural tourism destinations, etc.) in order to cross-validate the findings.

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