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Small islands as ecotourism destinations: a central Mediterranean perspective

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Abstract: A prerequisite for ecotourism development is the presence of natural environments, normally exhibited in protected areas, which serve as ecotourism venues. Little attention has been given to Mediterranean islands in terms of ecotourism. In this paper, nine islands in the central Mediterranean region were studied through a case study approach to investigate their potential as ecotourism destinations, taking into account the presence of protected areas and related aspects, including spatial dimensions and quality, to fulfil ecotourists. Larger islands with higher population densities were found to experience habitat fragmentation, and protected areas were thus in some cases relatively small and dispersed. In contrast, smaller, less populated islands were found to be more ideal ecotourism destinations due to limited anthropogenic impact and their capacity to fulfil the expectations of the 'true specialists', also known as 'hard ecotourists'. Quality of ecotourism venues was found to affect ecotourist satisfaction. Ideal ecotourism sites on heavily impacted islands were found on the island periphery, in coastal and marine locations, with marine ecotourism serving as the ideal ecotourism product on such islands.

Keywords: Central Mediterranean, ecotourism, habitat fragmentation, islands, protected areas, tourism

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Introduction

Small islands, characterized by small population size and/or land area, are important tourist destinations (Weaver, 2017). According to OTIE (2008), islands are considered 'small' when their area is between 1000 and 5000 km^2, with smaller islands being classified as 'micro-islands'. Bertram and Poirine (2007) consider islands to be small when their populations are below 1 million. Across the Mediterranean region, such islands are mostly associated with Sun, Sea, and Sand (3S) tourism, but this does not reflect the whole picture (Rigas, 2012; Ruggieri, 2015). Such islands are individually distinct and are regarded as hotspots of biodiversity on a global scale as they exhibit high species richness in terms of marine biota and host unique terrestrial flora and fauna as a result of endemicity (Davis et al, 1997; Médail & Quézel, 1999; Myers et al, 2000; Vogiatzakis et al, 2008). They also have special geological features and attractive landscapes. This may make Mediterranean islands ideal locations for ecotourism and highlights the vast potential of the marine environment as a resource for ecotourism activity (Cater & Cater, 2007; Fotiou et al, 2002).

Since its inception, the concept of 'ecotourism' has been a contested one, and at least 85 variations have been identified (Fennell, 2001), with the number still on the rise (Goeldner & Brent Ritchie, 2009). Whereas there is no agreement on a standard or precise definition for ecotourism (Black & Crabtree, 2007; Weaver, 2008), there is near consensus among stakeholders that genuine ecotourism should effectively fulfil three main core principles: it must be nature based, oriented towards sustainable development, and educational/interpretative (Beaumont, 1998; Blamey, 1995; Blamey, 2001; Garrod & Wilson, 2004; Weaver, 2008). Meanwhile, the practical implementation of the concept's theoretical underpinnings has been questioned (Ross & Wall, 1999), and in some cases ecotourism's contribution to achieving such objectives has been deemed limited at best (Kiss, 2004), to the extent that some islands have been entangled in what Grydehøj and Kelman (2017) call 'the eco-island trap'.

Since ecotourism focuses on nature (Beaumont, 2011; Rogerson, 2006), the natural environment is an essential element for ecotourism's development and practice. The environments of Mediterranean islands have experienced extensive negative impacts as a result of intense human activity, which has caused habitat fragmentation (Vogiatzakis et al, 2008). Furthermore, tourism, which dominates the economies of most Mediterranean islands, has led to intense pressure and detrimental impact on islands' limited and fragile terrestrial, coastal, and marine environments, either through tourism itself or through developments undertaken to accommodate tourists (Carlsen & Butler, 2011; Pipinos & Fokiali, 2009). As a result, tourism has led to landscape degradation in Mediterranean coastal areas in general, but effects have been more pronounced in the case of islands. In fact, the ecotourism potential and landscape value of some islands in the Mediterranean has been put at risk due to tourism's tremendous negative environmental impact (Lockhart, 2002). For instance, it has been argued that mass tourism activities at the marine site of Scandola, Corsica mean that this UNESCO site is no longer an ecotourism destination due to the dire environmental consequences it has suffered, including on its flagship species. Similarly, this sensitive Mediterranean island's natural heritage has experienced negative environmental impacts (Monti et al, 2018). Tourism-related activity and dramatic ecological effects, such as trampling on beaches, have also contributed to the population crash of species such as sea turtles, which previously sustained breeding populations on Mediterranean islands (Davenport & Davenport, 2006).

Despite growing academic interest in tourism on small islands (Weaver, 2017) and ecotourism (Weaver & Lawton, 2007), scholars have paid little attention to ecotourism in the Mediterranean region and its islands. Central Mediterranean islands in particular have been almost completely overlooked. In a rare study on ecotourism in the region, Diamantis (2000) claims that sustainable and ecotourism practices on Mediterranean islands are still in their infancy stage and that this is related to limited demand. Little has been published on the matter since then, especially in terms of the ecotourism potential of such islands and whether limited ecotourism venues can be a reason for the limited ecotourism development.

This paper thus aims to study the potential of ecotourism central Mediterranean small islands, with special focus placed on the venues in which ecotourism can take place. The study seeks to identify whether island size and the respective size of ecotourism venues as well as population density and the resulting anthropogenic activities have any influence on the ecotourism potential of central Mediterranean islands. The paper furthermore aims to study the impact of the quality of ecotourism venues on the ecotourist's satisfaction and to identify the ideal ecotourism activity to be practised on these islands, bearing in mind the targeting of the ideal ecotourists. The research aims will be achieved by employing a case study research design, encompassing various methods, including observation, focus groups, interviews, and surveys to target different stakeholders who would otherwise be impossible to target through a single method.

Literature review

The ecotourism venue plays an important role in the success of the ecotourism experience (Newsome, 2013). Most ecotourism activity takes place in natural environments (Buckley, 2002), such as public protected areas (Weaver & Lawton, 2007), which are becoming increasingly important sites for ecotourism worldwide (Mkiramweni et al, 2016; Buckley, 2009). These tend to have important ecotourism-related characteristics, including outstanding natural attractions (Weaver, 2006), which play a vital role in the ecotourism experience (Chan & Baum, 2007). In the case of central Mediterranean islands, natural attractions include various coastal environments and habitats, such as coastal caves, terrestrial geological formations and volcanic phenomena, charismatic marine megafauna, small terrestrial species including non-mammals (especially endemic ones), charismatic megaflora and plants, and scenic landscapes (Agius, Theuma, & Deidun, 2018).

Natura 2000 sites, an EU-wide network of nature protection areas (European Commission, 2014), are among the most popular protected areas for ecotourism. Several Natura 2000 sites across Europe have been earmarked as places in which tourism activities can take place in a managed way (Weaver, 2008). Furthermore, various stakeholders—including the general public (Dimitrakopoulos et al, 2010) and academics—have identified Natura 2000 sites as ideal ecotourism destinations with great potential for hosting ecotourism activities (Cruz et al, 2011; Dimopoulos et al, 2006).

Marine Protected Areas (MPAs) have also been identified as ideal sites for marine ecotourism (Agardy, 1993; Gerovassileiou et al, 2009). Most such MPAs in the Mediterranean are located around or adjacent to islands (Francour et al, 2001). It is thus no surprise that islands *per se* have been widely regarded as ideal venues for marine ecotourism (Halpenny, 2001; Sakellariadou, 2014), with small islands being regarded as particularly suitable (Bevan & Conolly, 2013).

In the case of archipelagos, ecotourism has been encouraged in outer peripheral islands, which are often naturally richer (Halpenny, 2001) and less dominated by mass tourism (Weaver, 2008). This reflects the trend whereby less-developed peripheral areas and islands are seen as better suited to tourism, in what is known as the ''pleasure periphery'' (Chaperon, 2009; Crick, 1989; Scott, 2000; Turner & Ash, 1975).

A major attraction of islands as ecotourism destinations is their remoteness and insularity, which generally facilitate not only the conservation of traditions but also pristine ecosystems (Hall & Page, 2006), considered to be the core element of ecotourism (Weaver, 2008; Zeppel, 2006). Furthermore, remoteness can make an island more attractive and exotic, especially in the case of small islands (Gössling, 2003; Scheyvens & Momsen, 2008). The physical separation of islands from the mainland also gives rise to a number of special insular aspects that influence ecotourism development. One such factor is the presence of distinguished ecosystems due to endemism. In the ecotourism context, this means that an ecotourist will have to visit that particular place in order to see that particular species.

Although little attention has been given to this in literature, ecotourism venues are influenced by the size of the sites themselves. On some Mediterranean islands, the natural environment is becoming increasingly restricted to small pockets of land due to considerable land use pressures resulting from a growing human population, which has intensified human activity and urban footprints (Cassar et al, 2008). In fact, Weaver (2001) highlights that the western European ecotourism sector is characterised by densely populated areas, which have been extensively modified by human activity, with the result that ecotourism activities tend to take place in relatively small natural areas.

Ecotourists themselves have been regarded as consciously seeking out different and new experiences. For example, some ecotourists, known as 'hard ecotourists', seek deep interaction with nature and have a strong environmental commitment, whereas the so-called 'soft ecotourists' seek shallow interaction with nature and have a superficial environmental commitment (Weaver, 2008). In this regard, the impact of the ecotourism venue on the ecotourism experience deserves to be studied.

Study area

The study area consists of nine islands (three archipelagos and one unitary island), all situated in the central Mediterranean region. These are the Pelagic Islands (comprising Lampedusa and Linosa), the Aegadian Islands (comprising Favignana, Levanzo, and Marettimo), the Maltese archipelago (comprising Malta, Gozo, and Comino), and the island of Pantelleria. Tourism is a major economic activity on all of these islands.

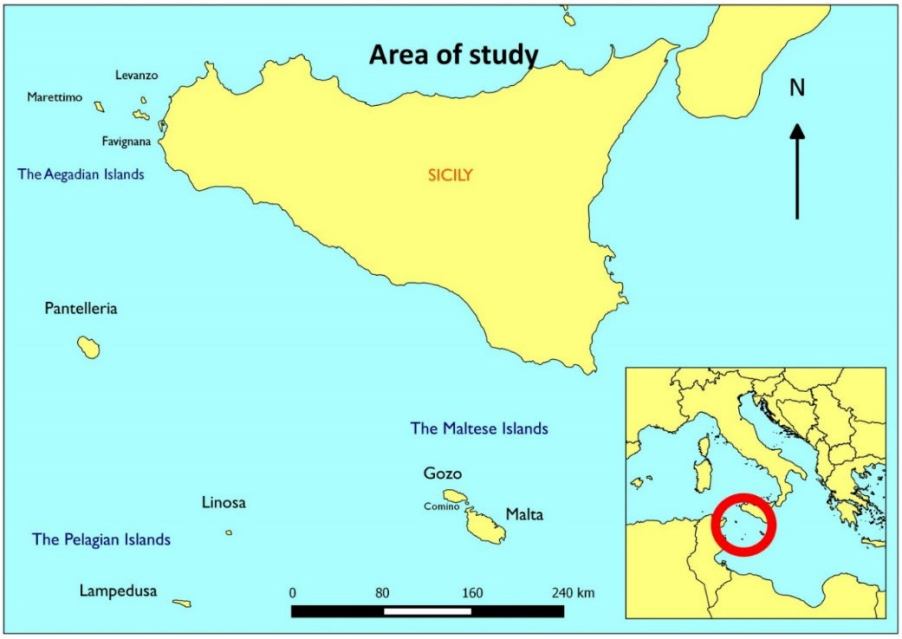

Figure 1: Central Mediterranean islands representing the study area. *Source:* QGIS, 2016.

All of these islands have terrestrial areas that have been granted protection through national and EU legislation and through international conventions, with several sites receiving protection through more than one designation. The Maltese archipelago has several terrestrial protected areas, mostly found in coastal areas, including 34 Natura 2000 sites. In the case of the island of Malta, the dimensions of the 22 terrestrial protected areas range from 0.002 km^2 to 23.17 km^2, whereas in the case of Gozo, the dimensions of the 11 terrestrial Natura 2000 sites range from 0.02 km^2 to 2.96 km^2. Comino and its islets are completely protected and cover an area of 2.9 km^2. In terms of terrestrial terrains, across the Maltese archipelago 30.29% (98 km^2) of the total land area (325 km^2) is protected (MESDC, 2018; Protected Planet, 2018). The unitary island of Pantelleria has two main areas which are protected, a central area of 30.99 km^2 and a coastal area almost surrounding the entire island, amounting to 34.02 km^2. In the case of the Aegadian and Pelagic Islands, the respective islands are almost fully protected, save for their respective confined inhabited areas (EUR-Lex, 2015).

With respect to the marine environment, protected areas are found surrounding all islands except Pantelleria, where a debate concerning establishment of an MPA is ongoing (Picchetti et al, 2010; Rampini, 2016). Meanwhile, almost the entire island and the surrounding marine area are protected as an Important Bird Area (Sposimo, 2014). The total marine protected sites in the Maltese archipelago are equivalent to 4138 km^2, an area larger than the country itself, amounting to over 35% of Maltese waters (MESDC, 2018; Protected Planet, 2018). The MPA in the Aegadian Islands encompasses the entire archipelago and covers an area of 542 km^2. This is the largest MPA established in Italy to date (Himes, 2007; Mannino & Balistreri, 2018). A portion of the waters surrounding the Pelagic Islands, with an area comprising 41 km^2, is also an MPA (La Manna et al, 2014; Giardina, 2012).

Methods

The case study approach was used in terms of research design as it provides flexibility as a multiple methodology facilitating use of a combination of both qualitative and quantitate methods (Jennings, 2010; Yin, 2014). Figure 2 shows the various methods employed to address the aims of the study. The multiple case study approach was implemented in such a way as to apply the same research methods to the different islands under study (Yin, 2014).

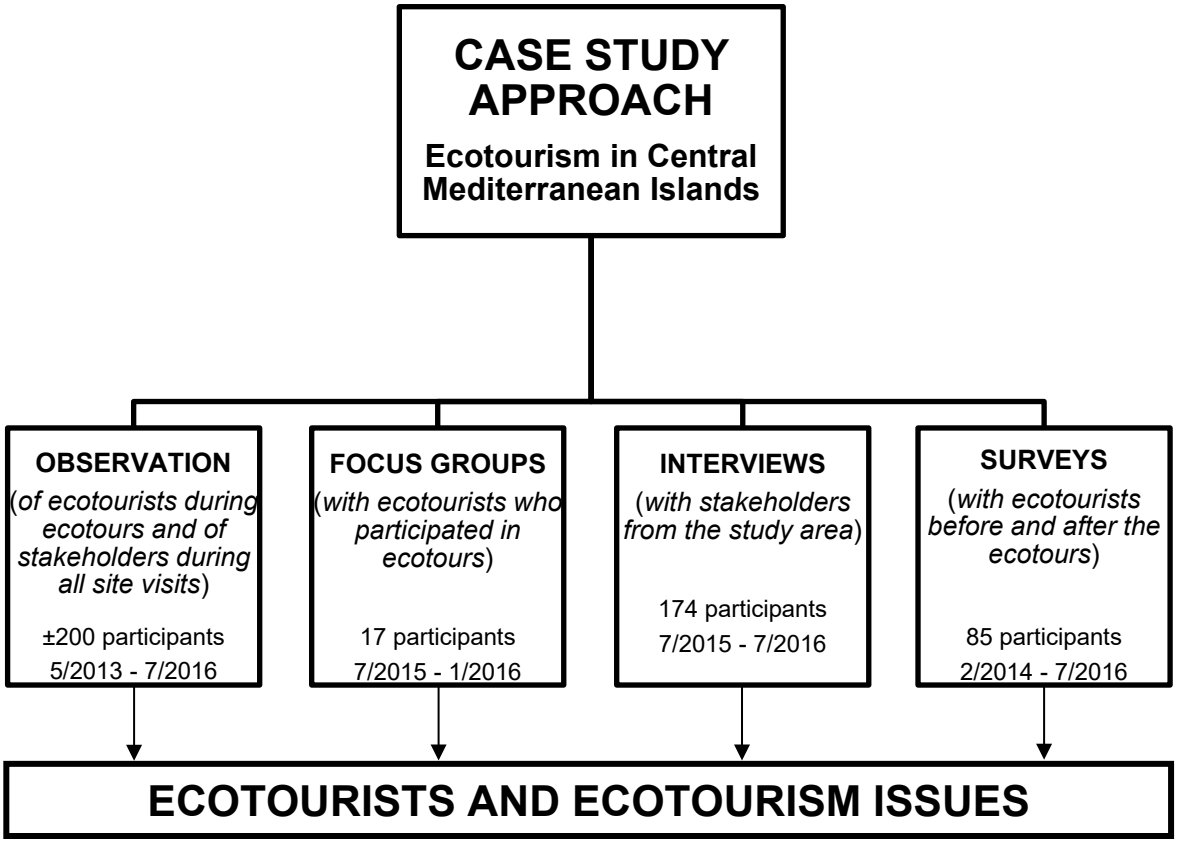

Figure 2: Components of the case study approach adopted throughout the study.

Research was conducted between May 2013 and July 2016, and over 240 people participated in the study. Four study visits (one to each archipelago/island), referred to as preliminary visits, were organised to observe and familiarise oneself with the study area. Eventually, four ecotours were organised (one to each archipelago/island). The third visits to each archipelago/island, referred to as the follow-up visit, were held the researcher alone to conduct a series of interviews with stakeholders.

The ecotours involved organisation of a specific itinerary for 66 ecotourists, who voluntarily chose to participate in the trips, at their own expense. Forty-three ecotourists participated in one ecotour, 23 ecotourists participated in two ecotours, and five ecotourists participated in all three of the organised ecotours, generating a total of 94 ecotourism experiences. The programmes of the ecotours involved established ecotourism excursions in protected areas. Surveys were conducted before and after the ecotours to study ecotourists' motivations, expectations, and satisfaction, a common technique in ecotourism research (Backman & Morais, 2001; Papadimitriou & Gibson, 2008). The survey was pretested and

piloted, making necessary changes before being group administered and completed anonymously by respondents. A non-probability sampling technique was used, whereby individuals who presented themselves to the ecotours were asked to participate. Three focus groups (each with five participants) and a group interview with two ecotourists were also held with specific participants to obtain participants' opinions regarding the ecotourism potential of the islands they visited along with aspects hindering its development. The 17 focus groups/group interview participants either volunteered or were handpicked by the researcher due to their roles in the research, either because they participated in multiple of the organised ecotours or because they revisited the ecodestinations on their own initiative following the ecotour organised as part of the research. 174 interviews were held with stakeholders across the entire study area in order to obtain their views on various issues related to ecotourism, including ideal ecotourism venues, and to learn more about relevant challenges and opportunities. Following Okech (2011) and Orams (1999), ecotourism stakeholders interviewed included locals, resource users (including operators, guides, and tourists), government and official agencies, non-governmental organisations (NGOs), and academics. Whereas distribution of stakeholders interviewed was not equal, as this depended on their availability to participate and their presence on particular islands, precautions were taken to ensure that all stakeholders were fairly represented on each island under study. Two sub-types of strategic informant sampling technique were used to recruit interviewees: expert sampling and snowball sampling. Interviews were held face to face and, because many islands are small, close-knit communities, notes were taken instead of recording to ensure that tangible information could be acquired and that an adequate pool of stakeholders agreed to participate.

Data obtained through interviews and focus groups was analysed manually through coding, sorting, and looking for dominant themes. Data from the questionnaire survey was coded (when necessary) and inserted into the Statistical Package for the Social Sciences (SPSS). The chi-squared test was used to determine whether there exists a significant association between two categorical variables, one being the ecodestination and the other being an ecotourism-related aspect. A 0.05 level of significance was used as a threshold value for statistical significance, where p-values less than 0.05 indicate significant associations between the two variables. Results are presented in Table 1.

Results

The natural environment and protected areas in the study area

Stakeholders across the study area identified numerous protected areas, including Natura 2000 sites and nature reserves, as ideal ecotourism venues. Stakeholders in the Aegadian Islands emphasised the presence of the MPA, which is one of the largest MPAs in the Mediterranean Sea adding, further potential for the island as an ecodestination. In the case of Pantelleria, stakeholders remarked that although there is no MPA, five sites along the coast are protected due to the presence of underwater archaeological artefacts and are thus still of interest to ecotourists. The importance of such sites for attracting ecotourists was confirmed through surveys. The majority of respondents (60%) said that the presence of protected areas influences their choice of travel to a destination. The highest rating was obtained from ecotourists visiting the Maltese archipelago (90%), whereas the lowest rating was obtained for ecotourists visiting

the Pelagic Islands (36%). The fact that the ecotour was predominantly nature based was a major motivation for participants to participate in the ecotours, especially for those on the Maltese islands. This was reconfirmed during focus group meetings, with emphasis being placed on the desire to immerse oneself in nature. Immersion in nature was also among the most popular expectation for respondents participating in the four ecotours. This was especially the case in the Maltese archipelago, with 70% of respondents reporting such an expectation.

Habitat fragmentation and site selectivity

Following their participation in the ecotour, the majority of respondents (79%) claimed to have spent most of their holiday in contact with nature. In contrast to the Aegadian Islands, the Pelagic Islands, and Pantelleria, for which a high proportion of respondents said they had spent most of their time during the ecotour in contact with nature, a significant proportion of respondents who participated in the ecotour held in the Maltese archipelago (40%) said that they had spent little time in contact with nature. Ecotourists participating in the ecotour held in the Maltese archipelago reconfirmed these results during a focus group meeting. While acknowledging that one finds several natural sites spread across the archipelago and that these should not be undervalued, ecotourists emphasised the need for greater proximity to nature and for avoiding built-up areas during these tours. They noted that one had to be selective in choosing ecotourism venues owing to the anthropogenic impact and level of urbanisation experienced by the islands, which is visible from several protected areas. According to ecotourists, this meant that ecotourism venues in the Maltese archipelago, specifically Malta and Gozo, varied from those visited in other regions and that one experienced a "different form of wilderness."

With respect to site selection, one should note that stakeholders from the islands of Malta and Gozo particularly identified MPAs and sites on the periphery of the islands as ideal ecotourism venues. Similar remarks were made by stakeholders from the Pelagic Islands. Once again, though to a smaller extent, stakeholders from Lampedusa identified a number of sites towards the north of the island, including coastal areas and valleys in coastal areas, as ideal ecotourism venues.

However, it was argued that, owing to the limited size of such sites, ecotourists would have to visit multiple sites during the course of an ecotour, introducing logistical issues such as travel, and that this might be quite problematic, given that traffic congestion is a major issue in Malta. This was confirmed from survey respondents, with traffic congestion and the need to use a car to move from one site to another regarded as a major concern for 50% of respondents participating in the Maltese islands ecotour. The need to move from one site to another was also noted as a reason for dissatisfaction for ecotourists visiting Malta and Pantelleria. It was, however, suggested that, owing to their proximity, a network of sites found along the coast and ideal for marine ecotourism could be developed in Malta. This was supported by the argument that Malta also has extensive marine areas surrounding the archipelago, which are protected and could complement such sites.

Reactions to habitat fragmentation

Owing to the limited dimensions of most protected areas, the possible expansion of such sites was raised during various interviews. Stakeholders explained that, in the case of the Maltese

islands, MPAs have been extended through LIFE+ funded projects which identified other sites that merit protection. Nevertheless, coastal areas adjacent to Natura 2000 sites, which also deserve protection, have been earmarked for development. In the case of Pantelleria, various local community members, including farmers, have objected to the extension and development of the nature reserve into a national park. This is due to fear of restrictions, including loss of the possibility to restore or build on abandoned agricultural terrain. Instead, the park was described by some locals as an instrument for the economic benefit of the very few. In the case of Pantelleria, establishment of the MPA has been delayed for over a decade due to fear of restrictions imposed on resource users, including those practicing spearfishing and amateur fishermen.

Size dimension and the ideal ecodestinations

With respect to the aforementioned challenge of urbanisation and anthropogenic impact, ecotourists argued that, from their experience, the islands of Gozo and especially Comino were better suited for most ecotourism activity than was the island of Malta because they were less urban. This resonated with recommendations by local stakeholders, who also suggested that ecotourism revolve around smaller islands and islets found in the Maltese archipelago. Similarly, during focus groups, ecotourists visiting the Pelagic Islands argued that the archipelago's smaller island (Linosa) was better for ecotourism due to its limited human impact, lower urban footprint, and pristine state. Even in the case of the Aegadian Islands, the larger island was deemed least ideal for ecotourism due to human impact whilst Marettimo and Levanzo were considered more suitable as ecotourism destinations. The higher potential of smaller islands as ecodestinations was confirmed by ecotourists' selections of which activities they deemed most enjoyable. In most cases, these took place on the smaller islands. Trekking along cliffs on Gozo and a one-day excursion on Comino were the most-chosen in the case of the Maltese islands. A boat tour with local fishermen on Marettimo, and a visit to a coastal cave on Levanzo were the most chosen activities in the Aegadian Islands. The one-day excursion on Linosa was the most enjoyed activity for respondents participating in the ecotour in the Pelagic Islands. By the same token though, it was argued that the larger islands of the respective archipelagos should not be excluded as ecotourism destination, given that they could support certain niche activities and serve as gateway islands.

Quality of ecotourism venue and impact on satisfaction of ecotourists

83% of respondents who participated in the ecotours organised as part of the research said that their expectations, as identified prior to the ecotour, had been fulfilled. High proportions of satisfaction were expressed by participants of the ecotours taking place in the Pelagic Islands (100%), the Aegadian Islands (95%), and Pantelleria (70%). In contrast, a sense of dissatisfaction was expressed by respondents visiting the Maltese islands. In fact, 44% of respondents said that their expectations were either partially fulfilled or unfulfilled. A quarter of respondents visiting Pantelleria said that their expectations were not fulfilled at all. Reasons given for such dissatisfaction included lack of time in contact with nature, discomfort when moving from one site to another, and distance travelled. In the case of the Maltese archipelago, ecotourists further commented that the area was more geared for mass tourism, was too urbanised, and that more wilderness had been expected.

Whereas most participants gave a positive overall rating of the ecotours held in the Pelagic Islands (100%), Aegadian Islands (85.2%) and Pantelleria (97.2%), just 40% of participants on the Maltese archipelago ecotour rated the overall experience as positive.

Almost all respondents were willing to go on holiday to an ecodestination, and almost all respondents (95.2%) were likewise willing to visit a central Mediterranean island as their next ecodestination, save for a small fraction of participants from the Maltese islands (10%) and Pantelleria (12%) ecotours. The majority of respondents (95%) said they would recommend the ecodestination they had visited to their friends for their next holiday.

One should note that positive experience in previous ecotours held in the study area was also chosen as a motivating factor for successive ecotours. In fact, owing to the positive experience, some ecotourists participated in two or three of the ecotours organised in the study area. The relatively high satisfaction ratings recorded through surveys were also confirmed through focus groups and group interviews, in which respondents claimed to have made recommendations and showed a willingness to participate in future ecotours or revisit the ecodestination. Others claimed to have revisited the islands on their own accord to further appreciate the natural environment. One divergent result is that 30% of respondents who participated in the ecotour held in the Maltese islands said they were unwilling to recommend this ecodestination to their friends for their next holiday. In the case of Pantelleria, 4% of participants said the same.

Table 1: Analysis of results obtained through the surveys held before and after the ecotours comparing the ecotourists' evaluations of different ecodestinations, n=85.

Question	**Degrees of freedom**	**Chi-Squared**	**P value**
Presence of protected areas and influence on choice of travel to a destination	3	6.54	0.088
Time spent in contact with nature	9	34.05	0.001
Activities enjoyed most	48	127.42	0.001
Motivating factors	57	78.63	0.3
Expectations	42	74.28	0.002
Level of satisfaction	6	19.87	0.003
Reasons for lack of satisfaction	22	34.753	0.041
Overall rating	9	38.03	0.001
Willingness to participate in another ecotour	3	2.174	0.537
Willingness to visit other central Mediterranean islands	3	5.64	0.131
Willingness to recommend the ecodestination to friends	3	16.70	0.001

With respect to ecotourists' satisfaction, one should bear in mind that all ecotours were held in the off-season or shoulder season but never in this midst of the peak tourism season, which on these islands tends to encompass the end of July, all of August, and the first half of September. Meanwhile, weather factors did not feature in stakeholders' responses in terms of

the overall satisfaction rating. Yet this deserves further attention as the data obtained is insufficient from which to make inferences, even if consultation has identified the off season and mild weather conditions as ideal for ecotourism.

Discussion

The natural environment and protected areas are crucial for ecotourism development

The presence of numerous protected areas in the study area confirms the availability of ecotourism venues. The fact that the presence of such sites influences the choice of the destination and that immersion in nature was among the most frequent expectations among respondents participating in the four ecotours confirms that these visitors were ecotourists, especially those participating in the ecotour held in the Maltese islands, owing to the strong expressions of expectations (Beaumont, 2011; Perkins & Grace, 2009; Rogerson, 2006). In fact, on the basis of other data obtained, it was concluded that participants on the Maltese islands ecotour were 'hard ecotourists'.

The possibility of immersion in different habitats and environments on different islands is a major opportunity offered by the central Mediterranean region. Even if it is currently overlooked, this opportunity is further strengthened by the rich biodiversity found in the study area and the presence of numerous endemic species, making ecotourism activities such as observation of wildlife on such islands unique. Furthermore, one can practice various ecotourism activities both in coastal and marine environments at sites that are relatively close to one another, increasing the competitiveness of the ecotourism product and the satisfaction of ecotourists.

Habitat fragmentation necessitates site selectivity

All things considered, most participants in the ecotours claimed to have spent most of their time during the tour in contact with nature, and this can be taken as a confirmation that the ecotourism venues across the study area were generally adequate for ecotourists' needs and desires. However, anomalous results were obtained for the Maltese archipelago, with all data sources flagging a general concern regarding Malta's ecotourism venues and a sense that little time had been spent in contact with nature. The main reasons mentioned were visual and anthropogenic impacts and the high level of urbanisation, which rendered the level of 'wilderness' different from that found in the other ecodestinations. This reflects concerns raised by the local population on the state of protected areas (Caruana Dingli & Galea, 2016). This has also been explained by Cassar et al (2008, p.318):

> In view of the significant human impact, there is hardly a location within the Maltese Islands that does not bear evidence of human presence over the last seven millennia. The Maltese landscape can best be described as cultural rather than natural.

Most tour activities in Malta were held at ecotourism sites, including protected areas such as Natura 2000 sites. Whereas there is room for improvement in the package, as expressed by ecotourists, the programme was based on principles associated with ecotourism and not with the general nature-based tours. It is therefore the intense and landscape-altering human impact,

alongside more recent illegal activities and lack of action from authorities, that is limiting the potential for ecotourism in the Maltese archipelago.

As reported in the literature, habitat fragmentation on islands has been linked with human activity (Deidun, 2010). Relevant anthropogenic impacts identified in the study area include development, agricultural activity, quarrying, and tourism. Habitat fragmentation was found to be a major limitation on larger islands, especially on the densely populated island of Malta. Malta is one of the world's most densely populated countries, with limited land resources (Markwick, 2000), making the use of open spaces a highly contested issue (Grima, 1997). Furthermore, various policies adopted by authorities, including those favouring over-development, have aggravated the situation.

Habitat fragmentation has led to a situation in which the remaining patches of wild areas that have the potential to serve as ecotourism venues are dispersed across the archipelago. In fact, in contrast to what occurred on most other islands in the study, stakeholders from Malta and Gozo felt the need to identify several distinct, small areas, located at a relatively far distance from one another, which could serve as ecotourism venues. The dispersion of protected areas and the visibility of human impact even within such sites explains why emphasis has been placed on the need for site selectivity. One should also note that studies on the ecotourism potential of Malta (Salerno, 2009) and Gozo (Ronsisvalle, 2006) have focused on the potential for ecotourism within specific pockets.

In the case of Malta, most such sites are found in coastal areas, as outlined by stakeholders. Yet one should note that, in most cases, such areas are also close to sites that have been heavily impacted by tourism-related development, due to the high economic importance of coastal tourism on islands (Deidun, 2010). Other sites have been heavily impacted by quarrying activity in coastal areas (Mallia et al, 2002), thereby casting doubt on their potential as ecotourism venues.

In the case of Lampedusa, on which anthropogenic impact is also evident, the island has suffered less habitat fragmentation than has Malta or Gozo due to its much lower population density. As a result, one still finds extensive wild or rehabilitated areas, which can serve as ecotourism venues. Nevertheless, as in the case of Malta and Gozo, Lampedusa stakeholders felt the need to identify pockets on the island that are ideal for ecotourism. In the case of Favignana, due to illegal development and extensive anthropogenic activities such as quarrying in coastal areas, habitat fragmentation has been recorded.

A related concern raised by various stakeholders, including ecotourists and academics, is the limited size of venues earmarked for ecotourism as a result of habitat fragmentation. For example, although the Maltese archipelago has the largest total area of Natura 2000 sites (245 km^2) and a 95.1 km^2 of protected area in total, the average size of terrestrial protected areas is 1.75 km^2 on Malta and 0.86 km^2 on Gozo, figures that are much lower than the average size of protected areas on the other islands in the study, even if these other islands have less protected land in total (EUR-Lex, 2015).

Habitat fragmentation and limited venue size necessitates travel between numerous sites during an ecotour, and although distances are short, travelling from one area to another introduces logistical difficulties, experiences of traffic, and a higher carbon footprint, which do not reflect ecotourism principles. Such problems become more pronounced on larger islands

such as Malta and Pantelleria, on which the ecotours in this study resulted in participants complaining about the need to constantly use transport and move from one place to another.

Habitat fragmentation in the context of ecotourism is of concern on such small islands. Whereas ecotourism has been regarded as a vehicle to support ecological conservation and local communities (Shoo & Songorwa, 2013), there have been concerns that the potential arrival of more tourists to such small sites, which are already under intense pressure, will aggravate the situation or worsen the ecotourism potential. This is because ecotourism does not thrive in destinations that become so popular that they end up destroying the very environment that should be protected on the basis of the ecotourism principles (Goeldner & Brent Ritchie, 2009).

Site management, supported through income from related ecotourism activities, is thus crucial. Site management should involve the establishment of zoning (limiting activities depending on the zone), the introduction of entrance fees, and implementation of carrying capacities, measures that are already implemented or currently being considered on some islands in the study area, including in MPAs and coastal areas, as a means of limiting the number of tourists and controlling possible negative impacts.

Extension of protected areas is needed to mitigate habitat fragmentation

In the case of larger islands with fragmented ecotourism venues, such as Pantelleria and Malta, the addition and extension of protected areas has been proposed, yet this has raised concerns about negative socioeconomic impacts. It is interesting to note that, once faced with the option between extension of the protected areas and the *status quo*, authorities in Pantelleria opted to create a National Park, despite resistance from the local community, especially from viticulturists who feared that the introduction of restrictions would limit restoration of abandoned land and impact their trade. This is unsurprising, given that viticulture is a major – even if declining – economic activity on the islands. Such resistance to protection reflects a general response to any increase in protected areas on islands under Italian jurisdiction. In fact, this issue has also been faced in the Aegadian Islands, where the decision to establish a reserve had to be reversed by the regional tribunal following appeals by the local community. This was accepted on the grounds that the responsible authorities had failed to take into account locals' interests (Giambrone, 2003). There has also been resistance to the institution of the MPA on account of the importance of inshore fishing in the Aegadian Islands, with fishermen and other resource users being concerned about the impact of possible restrictions on their hobbies and livelihoods.

Unlike the situation on Pantelleria, authorities in Malta opted to designate land that is regarded as derelict as development and regeneration zones, including land adjacent to existent protected areas. Environmental conflicts due to development are quite common in Malta (Briguglio, 2015; Boissevain & Gatt, 2011), where the drive has been to extend marine sites rather than terrestrial sites. Government commitments have been made to increase MPAs in order to protect important habitats (Muscat, 2017), and additional protected areas were designated in May 2018 (MESDC, 2018). This focus of preservation of the marine environment is likely because Malta's land area is quite limited whereas its marine area is relatively extensive. Furthermore, interests in marine areas tend to be lower compared to terrestrial areas, regarding which the construction lobby plays a crucial role in shaping the policies of successive governments.

The success of ecotourism in the study area also faces challenges in gaining acceptance from the local community. This is because ecotourism has the potential to negatively impact

aspects of local cultural, social, and economic life. If it were convincingly shown that ecotourism can improve the situation for local communities, ecotourism's popularity would probably rise.

Smaller islands as more ideal ecodestinations

A general trend has been observed in each island archipelago, in which the smaller and more peripheral islands (Levanzo and Marettimo for the Aegadian Islands, Linosa for the Pelagic Islands, and Comino for the Maltese archipelago) were considered more ideal as ecotourism venues than was the main (gateway) island of the respective archipelago. In fact, activities undertaken on the smaller islands within an archipelago were the activities that ecotour participants reported as enjoying the most. This resonates with the concept of the pleasure periphery.

The issue of habitat fragmentation or size of ecotourism venues was never raised for the smaller islands. Furthermore, stakeholders did not feel the need to identify specific sites as ecotourism venues but instead regarded the entire islands as ideal ecotourism venues. This is because, on such islands, development and the residential areas tend to be located in one specific site, with the rest of the terrain mainly being given over to wild or protected areas, in part thanks to strict regulations. The identification of smaller islands such as Comino to serve as ecodestinations in their entirety has also been reported (Muscat, 2007). This contrasts with other studies held in the Maltese archipelago referred to above, which revolved around specific sites as ecotourism venues.

Absence or lower level of habitat fragmentation is linked with partial absence or limited dimension of mass tourism. Smaller urban footprint or anthropogenic impact due to lower population density and double insularity has also contributed to more pristine environments. This confirms the arguments that insularity and remoteness can also serve as an attraction for ecotourists because they ensure a pristine environment (Garrod & Wilson, 2004; Weaver, 2008; Zeppel, 2006).

Quality of ecotourism venue impacts ecotourist satisfaction

Overall, the level of satisfaction of the ecotours was deemed high, the expectations arrived at before the ecotour were fulfilled, and many participants expressed a high degree of willingness to recommend the ecodestinations. The fact that some ecotourists participated in two or three of the organised ecotours and that others claimed to have revisited the ecodestinations or recommended that others visit them confirms visitor satisfaction. In fact, satisfaction in ecotourism has been associated with repurchase of the ecotourism product (Higham & Lück, 2007), recommendations (Murphy et al, 2000), and repeat visitors (Bardolet & Sheldon, 2008). The high level of satisfaction registered among respondents accords with the general trends of high satisfaction among ecotourists reported in the literature (Fletcher & Fletcher, 2003). Studies have attributed ecotourist satisfaction to the quality of venues and attractions (Fletcher & Fletcher, 2003). Results obtained from different data sources all confirmed overall satisfaction, and quantitative data was found to be statistically significant. All these factors confirm that, generally speaking, these islands and sites have the potential to serve as ecodestinations and ecotourism venues as well as to host ecotourists.

In the case of archipelagos, results show that larger islands such as Favignana and Lampedusa and Malta in particular have less ecotourism potential and are unlikely to fulfil

ecotourist expectations. For the largest islands (Malta and Pantelleria), a level of dissatisfaction was expressed, lower satisfaction was reported, and ecotourists were less willing to visit another central Mediterranean island following the ecotours on these islands. These patterns have been associated with aforementioned problems arising from island size and habitat fragmentation. The unwillingness of some ecotourists to recommend a visit to the Maltese archipelago and Pantelleria indicates the experience failed to meet their expectations (Murphy et al, 2000). The problem seems to be the destination itself rather than the concept, as nearly an absolute majority of respondents expressed a willingness to visit other ecodestinations on holiday, and only a small percentage of respondents visiting the Maltese archipelago and Pantelleria did not express an interest in visiting another ecotourism destination, such as a central Mediterranean island, in the future. All these results confirm that such islands are less ideal as ecotourism destinations.

These trends become more visible when considering the 'true specialists', such as the participants on the ecotour held in the Maltese archipelago, also known as 'hard ecotourists'. The anomalous results obtained for the Maltese archipelago when it comes to the overall rating of the experience reflect warnings made by academics interviewed to the point that Malta is not ideal as an ecotourism destination for hard ecotourists. This resonates with the remarks of the ecotourists themselves. However, the results do not support remarks made in the literature that argue that Malta can never serve as an ecodestination (Lockhart, 2002). Some stakeholders, including ecotourists, regarded larger islands as vital for supporting the ecotourism experience by serving as gateway islands. If anything, the results indicate that 'soft ecotourists' might be the ideal target in the case of such islands.

Conclusions

Owing to their remoteness, limited or lower tourism activity, small population, and limited human impact, smaller islands are generally still in a pristine state. They are thus regarded as better suited to serve as an ecotourism venue in their entirety than are larger (gateway) islands of the same archipelago. This accords with the fact that small islands have been associated with a narrative of great potential as 'small is beautiful', rather than with negative conceptualisations (Scheyvens & Momsen, 2008).

In contrast, larger islands that have experienced anthropogenic impacts and intense activity due to their popularity with mass tourists and bigger populations have undergone habitat fragmentation. As a result, specific sites have been earmarked as ecotourism venues. Whereas islands *per se* are considered to be peripheral, most stakeholders (including ecotourists) visiting densely populated islands or islands with high levels of anthropogenic impact have identified peripheral areas on these islands as the ideal sites for ecotourism. Such sites include cliffs, beaches, and valleys ending in the sea—land for which there is less demand from local communities, given their relative inaccessibility and with a relatively lower level of anthropogenic impact. On Malta and Gozo (which have experienced more negative anthropogenic impacts than the other islands studies here), most protected areas that can serve as ecotourism venues are found in peripheral areas. This implies that such larger islands are more ideal for marine ecotourism, which involves ecotourism activities held in coastal and marine settings. Furthermore, such islands tend to have relatively small terrestrial protected areas and much larger marine protected areas when compared to other islands.

It has been confirmed that the quality of the ecotourism venue has an impact on the level of ecotourist satisfaction. In some cases, the human impact has been so great as to jeopardise the level of wilderness expected by ecotourists even at distinct sites identified as appropriate for ecotourism. This suggests that such large islands are not ideal for hard ecotourists. Policymakers involved in ecotourism development in such destinations should thus work to identify high-quality sites and focus promotion and ecotourism products on such venues, especially those with limited human impacts. Management is also necessary to limit human impact and restore affected areas within such sites. Furthermore, extension of terrestrial protected areas in the Maltese archipelago and marine sites on Pantelleria should be seriously considered following socioeconomic studies and in conjunction with awareness campaigns. As described by Rampini (2016), genuine involvement of the local community in the setting up an MPA on Pantelleria is necessary. Meanwhile, decisions to repurchase of ecotourism products, repeat visitation, intention to revisit the islands, and positive recommendations all confirm the potential of such islands to serve as ecotourism destinations. The results additionally confirm that even if they are small and are at times characterised by anthropogenic impacts, such islands have strong natural elements that are sought after by ecotourists, giving them the opportunity to immerse themselves in nature and fulfil their expectations.

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