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Designing ecotourism experiences through co-creation: The case of small central Mediterranean islands

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Small islands in the central Mediterranean region are mostly considered sun, sea, and sand destinations, but many also have untapped ecotourism potential. To explore this, ecotour itineraries were designed with local ecotourism operators and community businesses on a group of islands. Ecotourists were then asked to participate in pre- and post-tour surveys to test the tours and provide key information on the package. Their motivations and expectations, their experiences, and levels of satisfaction with the itineraries developed were examined. Focus groups were held with return ecotourists or those who purchased more than one ecotour to further examine these elements, and to explore their reasons for loyalty. This research demonstrates that developing ecotours using a bottom-up approach, which embraces the specific natural attributes of the islands, can lead to high levels of satisfaction. This approach generated loyalty to the island destinations and to ecotourism in the region. Furthermore, co-creation together with ecotourists provided key information to small operators on how to increase satisfaction and identified improvements that need to be made, such as in the field of interpretation, group size, programme planning, and in terms of sustainability of sites and activities outside of the scope of the ecotours that have an impact on the experience.

Key words

visitor experience design

satisfaction

loyalty

ecotourism
small islands
co-creation

Introduction

Tourism provides significant economic gains for small Mediterranean islands, but its activity concentrated on coastlines in peak summer months also means that islands in the region suffer environmental pressures and other negative consequences of seasonality (Said, 2017). To tackle challenges arising from tourism trends before the COVID-19 pandemic, and to respond to an increasing awareness and demand for sustainable tourism (UNWTO, 2019), small islands in the Mediterranean region are beginning to develop nature-based tourism products. This development is likely to be consolidated by the COVID-19 pandemic, with early market research suggesting that post-COVID-19 people will actively seek out natural spaces and quality experiences (GEF, 2020). This growing interest is corroborated by TripAdvisor, which recently added 'parks' as a category of 'travellers' choice' that had previously included beaches and resorts (TripAdvisor, 2021).

One form of nature-based tourism is ecotourism, a type of tourism that takes place in natural settings, involves interpretation and embraces sustainability (Weaver & Lawton, 2007). Until two decades ago, ecotourism in Mediterranean islands was still in its 'infancy stage' (Diamantis, 2000). Recent studies have shown that ecotourism development on small central Mediterranean islands has great potential, particularly in the more peripheral islands and archipelagos which have the most pristine environments, even if the development of such experiences is still lacking (Agius et al., 2019; Agius et al., 2021a). Darmawan et al. (2018) argue that there is a significant lack of policy direction and guidance to help destination stakeholders, to design effective ecotourism experiences and to optimize their nature-based tourism potential. The development, or consolidation, of nature-based tourism is challenging in terms of being able to continue to offer a sustainable and high-quality visitor experience which meets, or ideally exceeds, visitors' expectations. To achieve this, it is important to take into account core conservation objectives, the unique characteristics of a destination, and the capacity of local operators and communities in its design (McCool, 2006).

The notion of co-creation has started to gain traction in relation to tourism experience design. (Campos et al., 2018; Phi & Dredge 2019). Co-creation involves interaction and collaboration of organizations, groups and individuals in order to jointly generate solutions and to create value (Russo-Spena & Mele, 2012). This approach has been increasingly employed to engage tourists in the design process and to complement the expertise of local communities. Customers have a key role to play in co-creating tourism experiences as they can offer vital information to tourism operators (Hoarau, 2014) helping them to understand travel motivations, tourists' interests and preferences, based on both their past experiences and their latent desires, all contributing to new innovations (Hoarau, 2016; Yachin, 2018). Studies have found that, for small tourism operators in particular, involving customers in the experience design can be hugely beneficial (Komppula & Lassila, 2015). For example, the testing of trips in co-creation studies have provided small operators with useful data in relation to the appeal and functionality of their services and how they can be improved. The operators can learn which activities were enjoyed the most, what the ideal group size is, about the quality of the interpretation provided, and how itineraries can be amended, all with the aim of improving the experience, meeting and exceeding tourists' expectations, and increasing the commercialisation of the tourism offer (Konu, 2015). Despite the obvious benefits, this approach is not much used by small-scale tourism firms, such as ecotourism operators (Yachin, 2017) as they lack time, money and/or expertise to employ these methods (Komppula & Lassila, 2015; Yachin, 2018). Further research into the co-creation of tourism experiences, with the cooperation of external organizations, is vital for small tourism operators (Konu & Komppula, 2016).

Designing ecotourism products in a way that meets both the generic and more destination-specific motivations and expectations is vital for success (Scholtz et al., 2015). 'Motivation', defined as 'a state of need, a condition that exerts a push on the individual towards certain types of action that are seen as likely to bring satisfaction' (Decrop, 2006:9). Satisfaction in tourism is generally referred to as an evaluation of pre-travel expectations and post-travel experiences (Chen & Chen, 2010). If expectations are largely fulfilled, tourists will consider their experience as satisfactory (Higham et al., 2008). For this study, satisfaction is evaluated in terms of overall satisfaction (Chen & Tsai, 2007) and as compared with expectations (Kim & Park, 2017). If visitor satisfaction is high, the likelihood of revisiting the destination, commenting positively about it and recommending it to others is also high (Higham & Lück, 2007; Shakoori & Hosseini, 2019). Satisfaction is considered as a significant antecedent for

destination loyalty among tourists (Kim & Park, 2017). Loyal tourists are particularly desirable because they require fewer targeted marketing efforts to encourage them to revisit the destination, they are more interested in a destination's characteristics, and they tend to be more sensitive to the values of the place (Rivera & Croes, 2010; Agius, 2021a). The tourism industry strives to design quality experiences to achieve competitive advantage, and to build relationships with consumers to gain their loyalty (Rickly & McCabe, 2017). Tourism operators are therefore increasingly engaging in co-creation to encourage revisit and repurchase intentions (Assiouras et al., 2019). Co-creation and its potential to develop tourism in a way that meets visitors' expectations can become an important tool for small central Mediterranean islands seeking to offer high quality and sustainable experiences that lead to visitor loyalty.

In recent years, researchers have examined different methods of co-creation (Konu, 2015). While a number of studies have looked at the application of co-creation by small tourism operators, there is still limited research when it comes to testing different types of customer involvement in tourism service development (Komppula & Lassila, 2015), and how this can lead to satisfaction and customer loyalty. Konu (2015) also calls for further research into ethnographic approaches, multi-data sources, and studies involving more than one test group.

Using three cases – two archipelagos and an island destination in the Mediterranean – the aim of this empirical study is to examine how consumers can be effectively engaged in the co-creation of ecotourism experiences. In particular, it aims to explore motivations for participating in ecotours, examine participants' views on tour design, and assess whether participation can lead to satisfaction and loyalty. In this case, loyalty is examined with respect to both the specific ecotour experienced and also the intention to consume similar experiences offered in other islands in the central Mediterranean region. Recommendations are made which will support stakeholders (including ecotourism operators, site managers, Destination Management Organisations, and tourism policy makers) in making decisions about the design and management of sustainable ecotourism products.

Area of study

The study area consists of three tourism destinations which collectively form part of what is known as the Sicilian Archipelago (see Figure 20.1). The two archipelagos are the Pelagian Islands (comprising Lampedusa, Linosa and the uninhabited islet of Lampione) and the Aegadian Islands (comprising Favignana, Levanzo and Marettimo). The third site is the island of Pantelleria (see Table 20.1). The islands' economies are heavily dependent on tourism which is mainly sun, sand, and sea in nature and most popular during the summer months. Lampedusa and Pantelleria have their own airports, but the other islands can only be reached via ferry boat or hydrofoil service (Agius et al., 2021b). The islands have various terrestrial and marine protected areas (MPAs) which have been designated under regional, national or EU legislation (EUR-Lex, 2015) (see Table 20.2). Such protected areas play an important role in the ecotourism experience (Newsome, 2013). Furthermore, these islands are home to several endemic, rare and charismatic species that have conservation value and serve as key attractions for ecotourists (Agius et al., 2019).

Table 20.1: Characteristics of the islands in the area of study

Factor	Aegadian Islands	Pelagian Islands	Pantelleria
Population	5,540	6,141	7,759
Land area (Km ²)	38	44.3	51.5
Inbound Tourists per year	207,843 (2019)	253,710 (2017)	151,917 (2017)

Sources: ENAC, 2018; Gallia, 2012; Himes, 2007; ISTAT, February 6, 2017; Libero Consorzio Comunale di Trapani, 2019; Nicolosi et al., 2018; Peronaci & Luciani, 2015; Serio et al., 2006; Tudisca et al., 2013.

Table 20.2: Protected areas in the area of study

Island/ Archipelago	Protected Area Category	Hectares (ha)
Pantelleria	Natura 2000: Isola di Pantelleria: Montagna Grande e Monte Gibebe	3 099
Pantelleria	Natura 2000: Isola di Pantelleria — Area Costiera, Falesie e Bagno dell'Acqua	3 402
Pantelleria	National Park	6 560

Aegadian Islands	Natura 2000: Fondali dell'Arcipelago delle Isole Egadi	54 281
Aegadian Islands	MPA	53 992
Favignana	Natura 2000: Isola di Favignana	1 832
Levanzo	Natura 2000: Isola di Levanzo	552
Marettimo	Natura 2000: Isola di Marettimo	1 111
Lampedusa and Lampione	Natura 2000: Isola di Lampedusa e Lampione	1 406
Lampedusa	Reserve: Isola di Lampedusa - Isola dei Conigli	370
Linosa	Natura 2000: Isola di Linosa	435
Linosa and Lampione	Reserve: Isola di Linosa e Lampione	267
Pelagian Islands	MPA	4 136

Source: EUR-Lex, 2015; Federparchi, 2021.

Figure 20.1: Map showing islands under study. Drawn by Andrea Pace for the authors

Primary research

This study involved three consecutive phases of research, comprising ethnography, surveys, and focus groups (see Figure 20.2). The use of different methods in different phases of research allowed for data to be collected before, during, and after the ecotourism experience, in what Ingram et al. (2017) refer to as the prospective, active and reflective phases. This combination of methods to study the design of nature-based tourism experiences has also been adopted by Konu (2015) and Yachin (2018). Applying multiple methods in a way that closely connects to the actual experience is considered ideal for obtaining information about tourists' needs (Komppula & Lassila, 2015) and in gaining a more comprehensive picture of the phenomenon under examination (Konu, 2015).

The first data collection phase involved participant observation, allowing the researcher to get to know the islands as tourism destinations, and, more specifically, as ecotourism destinations. As part of this phase, informal meetings and conversations were held with ecotourism operators, those managing the MPAs, relevant nongovernmental organisations (NGOs), and members of the local communities to hear their views on tourism in the islands and, more specifically, to identify distinctive ecotourism sites and activities. The

ethnographic phase also served as an opportunity to experience existing nature-based tours first-hand and to discuss with fellow ecotourists. This phase concluded in the design of three ecotours, one in each study site, which were then used as the basis for the following data collection phases. Similar to Komppula & Lassila (2015) and Konu (2015), the tours included accommodation, transportation, meals and activities. Each itinerary included a variety of nature-based activities such as wildlife watching, trekking, boat trips with local fishermen, snorkelling, horse-riding, and cycling. The tours offered locally owned, traditional accommodation, and there were opportunities to eat local dishes, buy locally produced goods, and visit cultural sites. Educational activities included guided tours on the botany and geology of the island, and visits to nature-related interpretation centres and sea turtle rescue centres. Priority was given to suppliers explicitly offering sustainable ecotourism products and services and those actively working towards conservation objectives.

Figure 20.2: Method adopted to design the ecotourism experience together with tourists

The second phase of data collection involved joining each of the ecotours organised to carry out further participant observation. The ecotour participants were from Malta and recruited through the support of an eNGO. They all paid fully for the tour, thus avoiding preferential bias (Konu, 2015). All participants were aware that research was taking place. It is acknowledged that this may have influenced participants' behaviours and responses and could be considered a limitation of the study. There were 53 participants in total, with 23 'loyal' ecotourists who participated in two out of the three ecotours, and five who participated in all three, generating a total of 81 ecotourism experiences. The first ecotour was from Malta to the Aegadian islands, the second was to Pantelleria, and the third was to the Pelagian islands.

During this phase of research participants were invited to anonymously complete pre- and post-tour questionnaires to note their expectations, levels of satisfaction with the ecotour experience(s), and loyalty. This method of conducting surveys before and after a trip has been regularly used in the field of tourism (Papadimitriou & Gibson, 2008), ecotourism (Jacobs & Harms, 2014) and co-creation research to test experiences (Konu, 2015). The questionnaire was group-administered, also known as the captive group survey (Veal, 2006), and achieved a high response rate (see Table 20.3).

Table 20.3: Actual number of attendees and respondents for the ecotours organised.

Ecodestination	Actual number of attendees		Actual number of respondents pre-trip		Actual number of respondents post-trip	
	Count	Percentage	Count	Percentage	Count	Percentage
Aegadian Islands	43	53	35	48	37	49
Pantelleria	27	33	27	37	27	36
Pelagian Islands	11	14	11	15	11	15
Total	81	100	73	88	75	90

The questionnaire consisted of a combination of pre-coded (closed-ended) and open-ended questions for richer data. A range of techniques were used, including single and multiple response checklists, ranking, scaling and 4- and 5-point Likert scales. The pre-tour questionnaire was used to primarily investigate (Agius, 2021a) the level of environmental awareness and ethical concerns and (Agius, 2021b) their motivations for participating in the ecotour as well as their expectations of it. The post-tour questionnaire examined (Agius, 2021a) the organisation and programming of the ecotour (Agius, 2021b), levels of enjoyment, fulfilment and satisfaction with the experience and (Agius et al., 2021a) willingness to participate in future, similarly designed ecotours in other Mediterranean island destinations. The scales used were adapted from previous studies on ecotourism satisfaction and loyalty (e.g. see Nepal, 2007; Rivera & Croes, 2010). The questionnaire was piloted with six participants in an earlier ecotour organised on the Maltese Islands and some minor changes were made to increase the clarity of the questions being asked. The closed questions in the questionnaire were pre-coded and the data from the open-ended questions were coded into categories using quantitative content analysis techniques (Veal, 2006).

The third phase of data collection involved three focus groups. An approach widely adopted in ecotourism research (Backman & Morais, 2001). The aim was to further examine answers provided in the pre- and post-tour questionnaires (Veal, 2006), to learn more about participants' ecotour motivations, expectations, experiences, and levels of satisfaction, and to explore the reasons for destination and ecotour loyalties. Three focus groups were held with 12 participants in total, with 11 out of the 12 participants having taken part in either two or three of the ecotours organised. During the focus groups, the researcher took field notes, rather than using a recording device, allowing for a more informal approach and encouraging

participants to talk openly (Gorman & Clayton, 2005). Data from the focus groups were analysed manually following the approach adopted by Stoffelen (2019).

Study findings

This section integrates the findings from all three phases of research to present a comprehensive understanding of ecotourists' motivations, expectations, and their levels of satisfaction with the co-created ecotour experiences, all of which can provide useful insights and guidance to ecotourism operators.

Ecotourist motivations

A number of motivations for joining the ecotours were identified. More than half of the respondents indicated that the presence of protected areas, nature reserves, and conservation initiatives in ecotour destinations were the main factors that motivated them to join the ecotours. More broadly, the ecotourists' motivations included the opportunity to immerse themselves in nature, to experience pristine environments, to be in more remote and less crowded islands, to learn about wildlife, and to contribute to conservation efforts. A curiosity to visit new destinations and to experience something different to their usual holidays – 'to have an adventure' – were also cited as motivations, though proximity of the ecotour destination to the point of departure was considered important. These motivations identified in the survey were confirmed in the focus groups, but the focus groups revealed an additional motivation to do 'island hopping', particularly in the case of the Pelagian and Aegadian archipelagos.

35 respondents (94.6%) in the first organised ecotour, in the Aegadian Islands, felt that their expectations had been met. This clearly motivated their further participation, with 23 ecotourists (53.5%) joining the second ecotour, in Pantelleria, and 5 (18.5%) of those who participated in the second ecotour also participated in the third ecotour, in the Pelagian Islands. It was revealed in the focus groups that word-of-mouth recommendations from friends, who had taken part in earlier ecotours, had also influenced participation in later tours. A particularly interesting finding was that there was a strong preference amongst respondents to join future ecotours in smaller groups.

In addition to the ecotours organised as part of this research, some respondents revisited the Aegadian Islands on their own initiative, explaining that they were motivated by the sense of tranquillity and fresh air. They were very keen on the almost complete absence of cars and boats, and even aircraft in the off-season. A safe environment, a simple lifestyle, and a sense of local community were other key aspects that motivated their return. These motivations are summarised in Figure 20.3.

Figure 20.3: Key considerations for ecotour development

Ecotourists' satisfaction with ecotour experiences

After the tours, all respondents claimed high satisfaction rates. Immersing in nature was a key motivation for them and they felt that the ecotour provided them with the opportunity to do this. Conservation efforts were also deemed an important factor in choosing the ecotour destination and these expectations were met, with participants making donations to eNGOs managing reserves and turtle rescue centres, and also wanting to learn about how their participation in the ecotour would support conservation initiatives. It is worth highlighting here that most participants (77%) considered themselves either 'fairly' or 'very' environmentally conscious, and 40% claimed to be affiliated to an eNGO. The importance of environmental sustainability was discussed by participants and they impressed the importance for them that ecotours are organised and delivered in an environmentally conscious manner. They were pleased with the efforts made to, for instance, recycle waste and to stick to designated pathways to avoid trampling of sensitive ground.

The preferred activities undertaken as part of the ecotours were varied, but particular favourites were trekking, excursions relating to geology, and boat tours. The participants also enjoyed horse-riding, visits to cultural sites and cycling activities. In the Aegadian Islands, trekking and boat trips were most enjoyed. Trekking was similarly enjoyed in Levanzo, as well as a cultural excursion to a natural feature, La Grotta del Genovese. In Favignana, it was cycling, and in Marettimo it was a boat trip with local fishermen to the coastal caves which were the activities enjoyed the most. For Pantelleria, in addition to trekking, horse-riding, and an excursion to visit volcanic phenomena, participants cited their stay in a remote *dammuso* (traditional dwelling) as a particularly enjoyable and memorable element of the ecotour. A

one-day excursion on the island of Linosa (which involved cycling, snorkelling and buying local and organic products) along with a boat tour off Lampedusa (which involved snorkelling) were the activities most enjoyed by respondents participating in the ecotour taking place in the Pelagian Islands. A visit to the turtle rehabilitation centres on both Lampedusa and Linosa was mentioned as a particular highlight of the tour. This wide range of ecotourism activities which were identified as contributing most significantly to the participants' satisfaction with the trip were enjoyed within and across the island archipelagos visited. This reflects the notion of 'island hopping' as a main motivator and as a key contributor to trip satisfaction; being able to take part in a variety of activities in several different locations was something that significantly and positively impacted on the ecotourists' experiences.

Some ecotourism activities were considered less enjoyable. For instance, there were a lot of jellyfish off the coast of Pantelleria which negatively impacted the snorkelling activities, and the very warm temperatures experienced during the trip made the trekking activities fairly challenging. Some ecotourists complained of a lack of adequate interpretation in the MPA centre on Lampedusa, and at the heritage sites situated within the nature reserve on Pantelleria.

Operational issues also negatively impacted levels of satisfaction with the ecotours. Some commented that the duration of the ecotours were not long enough to fully experience the islands' natural environment. During the development phase, local operators had recommended extending the length of the tours, but a decision was made to keep most of the trips to 3 or 4 days to make them more convenient and to fit in with standard holiday periods. However, the highest level of satisfaction with the length of trip was expressed by the participants of the ecotour to Pantelleria which was 7 days long, and most other participants considered 7 days to be the ideal length for an ecotour.

For future trips, in addition to extending the length of trip to 7 days, participants explained that they would prefer to travel in smaller groups. Furthermore, they called for more interaction with members of the local communities at the ecotour destinations, through specifically designed activities which would support this. In fact, the ecotourists that chose to return to the Aegadian Islands outside of the scope of this research project, said that they made a point of increasing their interactions with the locals throughout their stay. For the

trips carried out as part of the research, most interaction was limited to that with locals involved in the hospitality sector and those providing ecotourism excursions. It is true that the ecotour schedules were very busy with several planned activities which left very little free time for the participants to engage with other services and to interact with the local community. Where interactions were possible, for instance with local boat trip operators, language was a barrier as the ecotourists were Maltese who also spoke English, but most operators did not.

Some elements of the tours which were reported to have negatively impacted the overall experience were very much out of the control of the organisers. Participants raised concerns about what were evidently illegal developments on Favignana and also within the nature reserve on Lampedusa. They also witnessed the use of trawlers and sponge fishing taking place on Lampedusa, which caused disappointment. These sentiments are unsurprising given the nature of many of participants, who declared themselves to be concerned about environmental sustainability. Another element of the trip mentioned, which is again out of the control of the trip organiser, is the issues associated with accessibility to the islands; ferry trips between islands can be unpleasant (or cancelled) in bad weather conditions.

Taking into consideration the overall experience, almost all survey respondents rated their tour as either positive (50.6%) or very positive (42.7%). They indicated that their expectations of the trip had been successfully met, with 100% satisfaction rates for tour elements for the Pelagian islands, 95% for the Aegadian Islands, and 70% for the island of Pantelleria. Following the ecotours organised as part of this research project, all but one respondent expressed a willingness to participate in a future ecotour and said that they were very likely to recommend the tours to their friends and family. In fact, word-of-mouth recommendations had already been made for the second and third ecotours planned as part of the research, and some participants had even collected the contact details of tourism operators, such as those offering accommodation, due to their interest to return with family members. Participants that had taken part in all three tours expressed interest in taking part in future ecotours, similar to those experienced as part of the research project, in neighbouring islands and archipelagos in the region, such as the Aeolian islands, north of Sicily.

Recommendations for ecotourism development in Mediterranean islands

Results show that the 'nature' dimension is the most significant predictor of satisfaction and loyalty in island ecotourism destinations, supporting studies by Carvache-Franco et al. (2021). The islands used in this study still have pristine environments owing to their peripheral location, they have experienced only limited tourism development, and they benefit from extensive nature reserves and MPAs, all of which contributes to their attractiveness to, and satisfaction of, visiting ecotourists. These islands have an opportunity to develop or consolidate their nature-based tourism offer, but this will only be successful if illegal development and environmentally unsustainable practices in protected areas, which can impact their potential, are addressed by governmental authorities.

The fact that ecotourists enjoyed different activities on different islands reflects Baldacchino's (2015) 'nature of differentiation' as a key characteristic of islands in archipelagos. Distinct island characteristics were highlighted by local community members when designing the ecotour itineraries and supports the argument for needing to include all islands, including peripheral ones, in ecotour programmes. For islands in archipelagos, each island's distinctiveness can serve as a unique selling point. This differentiation promotes island hopping, which was considered as a major motivator for participating in the tour and as an activity that contributed greatly to satisfaction. This supports Weaver's (2017) assertion that the experience of island hopping is proving to be a favourite activity for ecotourism on islands and Baldacchino's (2015) argument that archipelago tourism requires further attention. Tourism is a major economic activity for many islands (Butler, 2017) and tourism operators from different islands of the same archipelago are often in fierce competition with each other to attract tourists, with those at the main, more easily accessible, islands usually benefiting most (Chaperon & Bramwell, 2013). Planned visits to all islands in an archipelago ensures that the benefits of ecotourism reach the more peripheral islands too.

Less crowded and more remote destinations were identified as motivating factors for participating in the ecotours. While peripherality is normally considered a limitation in destination accessibility terms, the associated remoteness has been identified as an opportunity for creating destination distinctiveness (Chaperon & Theuma, 2015). As a result,

the negative connotations associated with the periphery are challenged and the periphery becomes an experiential core and a centre for tourism based on ecological and cultural distinctiveness (Weaver, 2017).

The proximity of the ecotour destination, identified as a key motivation, could be influenced by a desire to be environmentally friendly since the carbon footprint associated with air transport is considered to have a hugely significant negative impact (Lenzen et al., 2018). Furthermore, the reduced travelling time allows for more time at the destination to immerse in nature. In addition, 'proximity tourism' is playing a key role in revitalising the tourism industry post COVID-19, and this includes sustainable travel such as ecotourism, as visitors prefer to travel closer to home in times of crisis and in their aftermath (Romagosa, 2020). To take advantage of this trend, Mediterranean islands should focus on attracting ecotourists from neighbouring countries and islands, and those with the most environmentally sustainable travel options.

Ecotour itineraries, co-created together with local operators and community members, have proved successful in terms of achieving high levels of satisfaction and loyalty. However, there are some key considerations for ecotour planners which could lead to increased satisfaction amongst ecotourists (see Figure 20.3). Operators should take into consideration the time of year that the tour is taking place and alter the programme of activities to best suit the weather conditions. For example, intense trekking in very hot weather could be replaced with more marine-based activities. The length of the tour also needs to be considered. There should be more leisure time in the schedule to allow for ecotourists to interact freely with the local community, outside of the ecotour context. Furthermore, programmes that involve island hopping need to take into account the extra time needed for travel, inter-island travel and allocate time for interaction with locals. The group size of the ecotour needs to be considered and large groups should be avoided. A group of less than 25 people is considered optimal, as was indicated by the ecotourists in the Pelagian Islands and in Pantelleria. Interpretation at sites visited also needs attention. One of the expectations for ecotourists was the learning experience, and this supports the findings of Balantine and Eagles (1994) who identified the educational element as one of the pillars of ecotourism. Without appropriate interpretation of heritage and natural sites, this is not possible to achieve. This issue is often related to the lack of expertise of the eco-guides on small islands, and is further compounded by a lack of language competencies needed to cater for international visitors (Agius, 2021b).

This needs to be addressed through education and training opportunities for the local tourism stakeholders.

Ecotourists visiting the islands in this study commented very positively about their experiences, and for most this led to loyalty to the ecotourism experience in the region. This was confirmed by visitors who participated in more than one ecotour, who revisited a destination on their own initiative with friends, who expressed willingness to make or made a positive word of mouth or who asked for contacts/information related to the designed ecotours. Aside from destination loyalty, ecotours like those designed in this study, with high levels of community involvement in their design, can generate their own product-based loyalty. The development of similarly designed tours in neighbouring destinations has the potential to attract loyal tourists, and lead a loyalty to the wider region. At the very least, these ecotours can complement the existing 3S provision in Mediterranean islands, and overcome some of the issues associated with seasonality if encouraged in the off-peak months. This calls for better transport connections all year round and regional promotional efforts which focuses on the distinctive nature-based elements of the smaller islands.

Ecotourism taking place on small islands is predominantly run by small-scale operators (often referred to as micro-enterprises) (Romagosa, 2020) with limited resources for research and development of tourism products. Hence, co-creation with the support of a research institution has offered such operators key information that can help to add further value to their services facilitating development/consolidation of ecotourism experience on central Mediterranean islands that meet expectations of a new segment of tourists that the islands have potential to target. Lessons learnt can be applied by regional tourism organisations, especially in the light of initiatives aiming to market central Mediterranean islands and an ecotourism hub (Agius, 2021a). This research approach has led to the identification of a series of services based on the local service system run by micro-operators. The range of services can then be used as part of a tourism package, but they can also be purchased individually for interested customers willing to organise their travel independently. In line with Komppula and Lassila (2015), this study points out that that co-creation of new ecotourism experiences with the involvement of customers, but also other stakeholders including research institutes and small operators, can lead to the development of packages with high value and innovation leading to satisfaction and loyalty towards island destinations in the region.

Conclusion

Results show that small islands in the central Mediterranean region can serve as ecotourism destinations. Nature-based experiences designed with local stakeholders and taking into account the rich natural and cultural heritage within protected areas can give rise to satisfactory visitor experiences on small islands and generate loyalty towards a destination or ecotourism experience in a region among visitors.

Feedback from tourists shows that such experiences must ensure maximum contact with nature but at the same time facilitate interaction with local communities. Duration of the tour needs to take into account the number of islands and inter-island travel to ensure that ecotourists have a comprehensive experience of the island or archipelago in question. Excursions in the programme must be well spaced and take into account weather conditions as well as the different characteristics of the islands. Adequate interpretation in English should be made available to increase satisfaction of ecotourists. This further confirms the need to involve stakeholders from all islands in the design process.

Group size must not be greater than 25 and sustainability in the wider sense needs to be given more attention. Visitor management is key to keep both the protected areas' system and tourism development sustainable (Petrić and Mandić, 2014). Taking this into account, managers and policy makers need to take visitor management initiatives to keep the islands attractive to ecotourists who prefer to be away from the crowds and consider the pristine state of the environment as vital elements of their experience. Therefore, enforcement of existing regulations in MPAs, limiting activities and operations need to be seriously adhered to.

Findings also confirm an opportunity to use nature-based tourism to relaunch tourism - an important economic sector on small islands – following the pandemic as visitors seek nature-based experiences with limited risk. In this regard, proximity tourism and close markets must be targeted by small ecotourism operators, further contributing to the sustainability dimension. Additionally, this study shows that these islands can attract another form of loyal tourists, apart from those who revisit islands annually for 3S, which can help to address seasonality, a major challenge for operators on small islands.

This study contributes to nature-based tourism management literature by providing an empirical example of how both consumers and service providers can get involved in designing ecotourism experiences. The study which adopted an ethnographic approach generating multiple-data sets in 3 cases run in parallel confirms that that co-creation can generate key considerations (see Figure 20.3) for the design process of nature-based tourism experiences in novel destinations.

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