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ARE MASS TOURISTS SENSITIVE TO SUSTAINABILITY?*

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Abstract:

Transition management to tourism sustainability is fundamental for mature and mass tourism destinations. While the literature has largely focused on residents' evaluations of tourism sustainability, little attention has been devoted to investigate tourists' perceptions and relevance of environmental practices at the destination. This study fills this gap by analyzing tourists' evaluations of environmental sustainability experienced during their holiday at a mass and mature tourism destination, by focusing on both tourism-based and complementary products. Mapping and cluster analysis are carried out on a sample of tourists who have chosen an Italian mass and mature tourism destination for their holidays. Findings show that sustainability is a less relevant factor and provides less satisfaction with respect to other aspects. Tourist expectations on environmental sustainability are not met; different perceptions and priorities on environmental sustainability are detected in the different tourist clusters. Managerial and policy strategies can be derived from these results.

Keywords: Environmental sustainability; mass and mature tourism destination; destination attributes; tourist perceptions; mapping and segmentation

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Introduction

In the last decades, the debate on whether economic growth is compatible with sustainability has dominated the discussions among policymakers and academics. The most advocated solution to this severe problem is a transition management to a sustainable economic growth (Kemp et al., 2007; Markard et al., 2012; Gössling et al., 2012).

The need to move towards sustainable economic development is particularly relevant in the tourism industry, which is widely recognized as one of the fastest growing economic sectors in the world (the third major economic activity in the European Union), in part due to its vital contribution in creating jobs and wealth, bolstering the economy and alleviating poverty (WTTC, 2019). However, the growing economic relevance of the tourism industry is offset by the negative transformations that tourism causes on the environment and on residents' quality of life (Niñerola et al., 2019; Hernández and León, 2013). Well-designed and managed tourism can help preserve the natural and cultural heritage assets underpinning a territory, strengthen and motivate host communities, trigger trade opportunities, and encourage peace and intercultural understanding.

In a more long-run and dynamic perspective, achieving sustainability is a requirement for the competitiveness at the destination level (Ritchie and Crouch, 2003; Cucculelli and Goffi, 2016). In this framework, uncertainty emerges on the policies or initiatives to manage the transition to sustainability, especially in the short-term (Gössling et al, 2012). This issue is particularly relevant in mass and mature destinations, which experience massive tourist floods, often concentrated in small territories, substantial increases of pollution, waste, and water overconsumption, which worsen the pressure on local infrastructures, assets and communities (Weaver, 2012; Weaver, 2014).

As for tourism, a recent literature has investigated the relationships between sustainability, tourism and competitiveness. Selected reviews of the literature (among others, Rodríguez-López et al., 2019; Garrigos-Simon et al. 2018; Niñerola et al., 2019; Ruhanen et al. 2015; Yoopetch and Nimsai, 2019; Bernini and Cerqua, 2019) provide inclusive summaries of the state of the art on sustainable tourism. However, despite the large body of literature on this topic, still in rapid expansion, much research has still to be undertaken (Buckley, 2012; Rodriguez-Lopez et al., 2019).

In particular, the analysis of consumers' sensitivity towards environmental issues is especially relevant in the tourism sector and in coastal mass tourism destinations. It is expected that coastal mass tourism destinations host tourists who are more cost-sensitive and might be less concerned with environmental sustainability. What seems to emerge is a latent and marginal environmental awareness, where ecological concerns and strategies are taken for granted but they do not play a significant role in affecting tourists' selection process of the holiday destination. While many mass tourism destinations see sustainability as a way to regenerate and rejuvenate stagnant or declining tourism flows (Dodds and Butler, 2010), sustainable strategies may be misplaced if tourists pay more attention to affordability issues than to environmental behaviors. Therefore, in a transition management to sustainable tourism, it is critical to know what are the tourists' needs, priorities and satisfaction levels about the tourism local system in terms of environmental sustainability.

Surprisingly, in literature little attention has been devoted to investigating the extent to which tourists either recognize the presence or weight the importance or quality of sustainable tourism initiatives at the destination (Iniesta-Bonillo et al., 2016). Moreover, to the best of our knowledge, none of the studies in the literature analyses sustainability at local tourism system level, defined as a combination of primary tourism

businesses (i.e. accommodation, beach, environment and location) and complementary tourism services (i.e., as restaurants, shopping, nightlife, entertainment and communication facilities) (Enright and Newton, 2004). Assessing tourists' level of awareness about sustainable practices provided by the local system, even if necessary for pure environmental issues, may support strategic planning, marketing and educational campaigns to raise responsiveness and sensitize towards specific critical environmental issues. These aspects are particularly relevant for mass and mature destinations characterized by fragile ecosystems and cultures.

To fill this gap, espousing the sustainability conceptualization proposed by Kuhlman and Farrington (2010), which separates socio-economic aspects (better summarized by the impacts on well-being) from the environmental issues (which include long-run and intergenerational impacts), this analysis aims at evaluating tourists' perception of environmental sustainability at a mature mass tourism destination. In particular, using data collected on a sample of tourists who spent their summer holidays at the District of Rimini, one of the main mass tourism destinations in Italy, we performed a mapping and cluster analysis on a total of 705 tourists interviewed in 2014.

The resulting profiles detail tourists' perceived importance, satisfaction and expectation scores on environmental sustainability items and destination attributes. Our findings highlight a high loyalty level, interest, and satisfaction, but tourists' needs and priorities marginally depend on sustainable actions and initiatives at destination level; moreover, tourists pay limited attention to recognizing environmental practices in place at the destination. Cluster analysis provides useful insights on tourists' characteristics, depicting different ranges of sensitivity to sustainability issues. These results lead to

more informed discussions on managerial and policy implications in terms of sustainability.

This analysis contributes to improve literature on sustainability in tourism. There are four main novelties in the design and findings of this study. First, differently from previous literature, we analyze the tourists' assessment of environmental sustainability during their holiday (i.e., satisfaction, importance and expectation). Second, we focus not only on aspects of accommodation, which have been amply investigated, but also on the whole local tourism system of the destination (i.e., beach, urban, entertainment and communication facilities). Third, our analysis provides novel evidence on the relationships between tourists' perception (in terms of satisfaction, importance and expectation) and environmental sustainability at the destination, segmenting the tourism demand with respect to the intensity of these relationships. Finally, we focus on the impact of sustainable environmental initiatives on tourist perceptions at a mature and mass tourism destination.

The paper is organized as follows: Section 2 briefly reviews the strands of literature on tourism sustainability. Section 3 introduces the data and the methodology used. Section 4 presents the main results of the investigation, linking them back with the theoretical development, policy and managerial implications. Finally, Section 5 draws conclusions, presents the limitations of this study and future directions for research.

Literature review and motivations

Since early 2000s, consumer perceived value of sustainability has been widely investigated from both practitioners and academics to understand consumer product choice and purchase behavior (Kollmuss and Agyeman, 2002; Staats, 2003; Carrington et al., 2012). In particular, the analysis of motivations and reasons that push or inhibit

consumers to make the decisions they do, the recognition of added value implied by sustainability, together with the satisfaction and knowledge about sustainability issues determining purchase behavior, became fundamental (Carrington et al., 2012; Prothero et al., 2011). In this framework, the literature focused on how sustainability enters in the mechanisms driving consumption processes, such as information on the environmental contribution of services and products (Ipsos Public Affairs, 2010), knowledge about quality of “greener” consumptions (Chang, 2011), brand loyalties (Seyfang, 2009), skepticism about the impact of each consumer on overall sustainability (Hanss and Böhm, 2010). Recently, Ihemezie, Ukwuaba and Nnaji (2018) find evidence of mixed and contradictory results on the impacts of sustainable initiatives or eco-label communication on purchasing, due to the adoption of alternative research designs (e.g. different products, different level of economic development, alternative classes of consumers).

In the last decades, the awareness that tourism is becoming less sustainable has increased, primarily as a result of the rapid growth of the tourism industry and the limited progress in implementing more environmentally friendly operations on a global scale (Hall, 2011), boosting the analyses on the role that sustainability has on the long-run development of tourism destinations.

Sustainable initiatives are considered as one of the key factors allowing tourism destinations to survive over the course of time (Rodríguez Díaz and Espino Rodríguez, 2016). A sustainable destination is tasked with maintaining a high degree of tourist satisfaction, to ensure a significant experience, while preserving its natural resources and features. At the same time, a sustainable destination should amplify sustainability awareness and promote sustainable tourism actions (Swarbrooke, 2005), as the unique tourism model in medium-to-long run (Hassan, 2000).

Recently, the literature on sustainability in tourism has rapidly increased, but it has not found a general consensus about definitions and concepts. Different strands of research are devoted to defining sustainability indicators (destination-based indicators, e.g. Roberts and Tribe, 2008; destination-unbiased indicators, e.g. Torres-Delgado and López Palomeque, 2018), to analyze hotel industry green policies (Prud'homme and Raymond, 2013; Chen, 2013) and the effects on guest satisfaction and loyalty (Berezan, Raab, Yoo and Love, 2013), to evaluate local community perception and satisfaction on sustainable tourism (Cotrell, Vaske and Roemer., 2013), to evaluate return on investment and competitiveness (Capacci et al., 2015; Karlsson and Dolnicar, 2016; Cerqua, 2017; Bernini and Cerqua, 2019), to investigate the multidimensionality behavior of the concept (Iniesta-Bonillo et al., 2016).

A large amount of researches focused on suggesting alternative conceptual schemes, such as the prism of Spangenberg (2002), or the three-factor representation employed by Iniesta-Bonillo et al. (2016), until the seven-dimension representation (e.g. used by Yu et al., 2011), referring to economic, cultural, social, environmental, managerial, political and governmental factors of sustainability. At the same time, Kuhlman and Farrington (2010) assert that, in analysing scenarios and impact of policies, it is wrong to separate social from economic dimensions, being part of the same sphere, which leads to well-being (and short-term effects). Moreover, they stress the importance of the environmental dimension (which includes long-run and intergenerational impacts), as originally suggested by Brundtland Report (WCED, 1987). Thus, in line with the Brundtland report, the concept should reflect the implicit trade-off between the efforts in short-run activities for a better life (well-being as the sum of the social and economic dimension) and the deterioration and limitation of natural resources (environmental dimension).

In tourism literature, the environment represents the first aspect of sustainability investigated (Collins and Flynn, 2008; Hunter and Green, 1995), where concepts of renewability of resources and natural capital are the fundamental issues analyzed. Despite the recognition of environmental sustainability as strongly important in tourism, empirical studies analyzing the relation between destination competitiveness and sustainable tourism development through the tourist's perceptions are rare (for a review see Chen, Chen and Lee, 2011).

To our knowledge, only few empirical studies have explored the importance of how sustainable strategies at the destination are perceived and affect the holiday decision making process, including how these strategies impact the overall level of satisfaction (e.g. Rodríguez and San Martín, 2008, from a marketing perspective; Cotrell and Vaske, 2006, focusing on alternative dimensions of sustainability). Recently, Iniesta-Bonillo et al. (2016) adopt a structural equation model approach for two Mediterranean destinations to analyze perceived sustainability, perceived value of trip and holiday satisfaction. Using survey data, the authors analyze and test the invariance across samples of the three dimensions of the sustainability prism (Spangenberg, 2002), identifying sustainability perception as key factor in enhancing competition among destinations and creating new competitive ones.

Starting from this point, this paper aims at analyzing tourists' assessments of a mature mass and multi-product destination (the District of Rimini), in terms of overall satisfaction, importance scores and expectations for different aspects of environmental sustainability in the local tourism system. Following Ritchie and Crouch (2003), we identify attractions, natural and cultural resources, lodging, infrastructure and tourism facilities as the main features of the destinations that lead an individual to choose a destination. Differently from the previous literature, which used the multidimensional

approach in analyzing sustainability at a tourism destination, we examine environmental sustainability across the different macro-components of the local tourism system (i.e., multidimensionality emerges in terms of local tourism system components instead of different dimensions of sustainability). Then, through a tourism market analysis, we identify how the different destination factors and sustainable initiatives affect tourist evaluations and suggest appropriate destination strategies. This approach is particularly relevant for mature and multi-product destinations, which have to compete with new tourism destinations and satisfy new tourism demands; thus, a thorough understanding of tourist needs and perceptions also in term of sustainability becomes strategic.

Research strategy

The case study

The District of Rimini is a seaside destination located on the Adriatic Coast. In addition to its cultural heritage and MICE infrastructures, this area is also one of the greatest mass tourism destinations at European seaside, hosting about 16 million overnight stays per year.

After a rapid growth of domestic and inbound tourist arrivals which crowned Rimini as one of the most important coastal tourism destinations in Europe (1945-1967), its stagnation phase started in 1968, when the competition among coastal tourism destinations came to be tighter, reducing the share of foreign tourists, while preserving the number of overnight stays. Two subsequent rejuvenation phases worth mentioning: in the decade 1978-1988, Rimini invested in entertainment activities and became the district of leisure and entertainment (hosting several amusement arcades, discos, theme parks etc.); in the decade 1990-2001, Rimini invested in the MICE tourism industry to

diversify its tourism targets and attract new tourism segments throughout the year (Battilani, 2009). However, mass seaside tourism remains its main source of overnight stays and arrivals, while globalization makes competition among coastal tourism destinations tighter and tighter, and tourists' needs evolve unceasingly (Bernini and Cagnone, 2014; Figini and Vici, 2012). Thus, new rejuvenation strategies are needed to attract new market segments, while maintaining the loyal tourists and respecting the environment, the local community and its traditions (Brau et al., 2009). This is in line with the new strategic plan and tourism marketing strategies adopted by the destination.

In the last decade, local government and operators in the territory have invested in policies and actions devoted to support sustainability. For instance, the city's strategic masterplan embraces enhancing tourism and destination management in a sustainable way. This also includes improving the supply of water and electricity for the tourism sector and waste collection. The District hosts the well-known Responsible Tourism festival, It.a.cà Festival, which received third prize in 2018 at the UNWTO awards for innovation in sustainable tourism, and along with the Green Booking project represent two examples of initiatives involving tourism operators, municipalities and hotels¹.

A Customer Satisfaction survey was carried out in 2014 in five coastal municipalities in the District of Rimini (Rimini, Riccione, Bellaria - Igea Marina, Cattolica, Misano). The survey aimed at investigating tourist perceptions and evaluations of the destination environmental sustainability.

The questionnaire

¹ For more details, see <https://www.festivalitaca.net/>; <https://www.info-lberghi.com/greenbooking/>; <http://www.riminiventure.it/>.

In the definition of variable measurements, we follow a comprehensive model of tourism destinations as suggested by Enright and Newton (2004), where tourism-specific factors as well as a set of tourism-related factors influence tourists during their trip (Crouch and Ritchie, 1999; Bernini and Cagnone, 2014). Then, in the questionnaire we included not only primary attractions (accommodation, environment and location), but also complementary features (such as restaurants, shopping, nightlife, entertainment and information facilities) organized in six macro-aspects ("Hotel and Accommodation", "Urban environment", "Commerce, Entertainment and Restaurant", "Sun and beach services", "Tourist information", and "Overall Aspects" that summarizes all the aspects of the destination for an overall assessment). A different number of destination attributes make up each macro-aspect (e.g. Room, Hotel restaurants, Hotel services, Additional hotel services, Sports/recreation services, Environmental Sustainability characterize the macro-aspect Hotel and Accommodation). Table 1 lists macro-aspects and their specific items.

In the survey, tourists were invited to evaluate the single items related to each aspect of the destination, in terms of satisfaction and importance, by means of a ten-point scale (ranging from 1 to 10). The respondents were also asked to express whether each specific item in every macro-aspect met their expectations with measures ranging from -1 (*The service is worse than expected*) to 1 (*The service is better than expected*). The value zero represented equality between expectations and findings. Each macro section includes an item related to the environmental sustainability. Thus, we required to evaluate environmental sustainability in the macro-aspects: Hotel and Accommodation, Urban environment, Commerce, Entertainment and Restaurant, Sun and beach services, and Tourist information, with respect to satisfaction, importance and expectation.

A question about the awareness of sustainability initiatives at the destination completed this section of the questionnaire. We asked tourists to state whether they are aware of the main green initiatives implemented in the destination (e.g. waste separation, energy saving, etc.).

The final section covered details related to vacation choice: information on the trip transport, accommodation type, length of stay, with whom the holiday was spent, amount of previous visits, and intention to return. Information on gender, age, occupation, nationality and residence were collected in the personal data section.

The sample

The survey targeted tourists (Italians and foreigners) who spent their holidays during summer of 2014 at the District of Rimini. The sampling plan consists of two steps: at the first step, hotels were clustered by coastal municipality and star rating; at the second step, tourist arrivals in hotels were clustered by month of arrival (August and September) and place of origin (Italy vs Abroad). A total of 705 tourists were interviewed within the different stratum, respecting the population proportion of domestic and inbound tourism flows both in peak season and off season (see Table 3 for sample statistics). Data were collected by in-person interviews, using a randomized approach.

The cluster analysis

We used cluster analysis to segment the sample into homogeneous tourist groups by means of a mixed two-step approach. First, a hierarchical algorithm is applied (i.e., complete linkage) to identify the best partition; the squared Euclidean distance is considered to measure dissimilarities. The solution is identified by the Calinski and Harabasz pseudo-F index and the Duda-Hart test. The stability of the segmentation is

verified randomly splitting the clusters and applying the procedures and tests on the cluster solutions. Second, a non-hierarchical K-means procedure is carried out based on the number of clusters previously identified in the first step. This mixed approach is often recommended as it gives more accurate solutions, while avoiding issues related to outliers and clustering the remaining observations (Hair et al., 2010).

Clusters are then profiled with respect to demographic characteristics and respondents' behavioral aspects that do not enter in the cluster algorithm, improving the readability of results (Amaro, Duarte and Henriques, 2016).

Results

Evaluations on the Rimini District

Overall tourist satisfaction reached a mean rate of 8.5 on a scale 1-10 (Table 1)², confirming that the District of Rimini is largely appreciated by tourists. This result is also supported by the likelihood of returning to the District; over 87% of respondents intended to spend future holidays at the destination.

Tourists assign a high importance rating to the accommodation, urban environment and quality of sea. They rate sustainability as relevant, but assign it lower scores than the average values assigned to the destination itself. In sum, the components for a pleasant stay are holiday, hospitality, city and level of sustainability.

[INSERT TABLE 1]

An assessment of ex-ante expectations and ex-post judgments helps detect the factors that can be improved or other features that can develop the tourism supply. The gap between the percentage of tourists declaring a destination aspect was better than

² All statistical analyses are conducted by using STATA software.

expected and those stating it was worse is presented in the last column of Table 1. The gap for sustainability is negative; in general, the gap is greater for foreigners than for Italians.

These results are also supported by statistical analysis. We can observe that the Cronbach's alphas are higher than 0.70 and, therefore, adequate for quite all constructs (Nunnally, 1970); the amounts of variance explained by the first component also result to be higher than 0.70. These findings confirm the high reliability and validity of the measures.

In line with López-Sánchez and Pulido-Fernández (2017), these preliminary statistics highlight that at this mature and mass tourism destination, tourists consider environmental sustainability as a subordinate feature, both in terms of importance factor of the holiday and driver of satisfaction, with respect to other aspects. Figure 1 clearly shows that all sustainability aspects lay in the third quadrant, where less satisfactory and important factors (in relative terms) are located. They declare their expectations for sustainable behavior at the destination have not been met. While both foreign and domestic tourists assign the same average level of importance to the sustainability aspects, foreign tourists are less satisfied with the solutions adopted by the destination.

Finally, we investigate the knowledge of the sustainable initiatives at the destination. The analysis shows that only the most visible initiatives have been noted. In particular, the creation of infrastructures and events for cycling, the separate waste collection, together with public transport are the most known sustainable initiatives (Table 2). Differently, tourists are marginally aware of energy and water saving initiatives, use of renewable energy, availability of services for people with disability and noise reduction.

[INSERT Table 2]

Satisfaction–Importance and Expectation Maps

An importance/satisfaction map (Ryan, 1995) is built to compare tourists' evaluation of the importance and satisfaction with respect to features and services provided at the destination (Figure 1).

Beach and accommodation are the most highly rated aspects of the District of Rimini (Quadrant I). In particular, room, hotel services and restaurants are the most effective attributes of the accommodation offer in the destination; safety on the beach and in the sea, beach cleanliness and services obtain higher mean rate for both importance and satisfaction. Regarding the urban environment, aspects like the availability of open space and green areas, safety and quiet, pedestrian areas, as well as the noise and air quality, more than encounter tourists' needs.

The only weakness of the destination regards the quality of water and sea (Quadrant II). To improve the quality of the seawater, the destination is investing more than 150 million euro in the so-called Bathing Protection Plan (SPBO), which has been used as case study example by UN and is in line with the "Life Below Water" Sustainable Development Goals (reducing extreme poverty, fighting inequality and injustice, and fixing climate change).

All items related to sustainability at the destination are placed in Quadrant III, with importance and satisfaction scores below the mean. In Quadrant III, tourists also posit aspects associated to infrastructure such as parking, urban transport, road conditions, accessibility for travelers with disabilities, and overcrowding. Hotel services and shopping are found to be of low importance and satisfaction, in addition to conservation of natural and cultural heritage.

Finally, the entertainment and information services are not considered very important by tourists, but they were satisfied with these services during their vacation (Quadrant IV).

[INSERT Figure 1]

We also plot whether tourist expectations were met or were not met for all the destination attributes (Figure 2). Each item is identified by the percentage of positive (*the service is better than expected*) and negative (*the service is worse than expected*) responses expressed; thus, items located over the bisector are destination attributes with a better than ex-ante expectation. Aspects pertaining to the beach (i.e., entertainment, overcrowding and cleanness), accommodation (i.e., restaurant and room services), urban aspects (i.e., safety, pedestrian and green areas, public transport and the care), and entertainment exceed tourists' expectations. Again, all the items related to sustainability at the destinations are located below the bisector, showing that tourists' a priori expectations were not met. Among the attributes rated negatively, a number of urban and infrastructure features (i.e. traffic, silence, air quality, parking overcrowding, and accessibility for disables), information and additional services in the accommodation structures appear. Improving these attributes should enhance competitiveness in the District of Rimini, since they currently do not respond to tourist needs or preferences.

[INSERT Figure 2]

Segmentation with respect to environmental sustainability

Initially, an exploratory factor analysis³ on all the destination attributes (i.e., in term of satisfaction, importance and expectation) has been implemented. Based on a three factors solution (i.e., capturing a half of the total variance), we found that the third factor is based on all tourists' sustainable evaluations. This finding strongly supports the choice to deepen the following analysis on environmental sustainability evaluations. In particular, our purpose is to verify whether different tourists' clusters have different awareness and sensitivity towards specific environmental aspects and which actions should be adopted in order to raise tourists' consciousness towards critical environmental aspects.

Therefore, in the cluster analysis, we use the satisfaction and importance scores as well as the expectations about the environmental sustainability at the destinations for all six macro sections in the questionnaire as active variables (i.e., environmental sustainability in: Hotel and Accommodation, Urban environment, Commerce, Entertainment and Restaurant, Sun and beach services, Tourist information and Overall sustainability) (for the sake of brevity, hereafter we refer to environmental sustainability as sustainability).

The interpretation of both the final clusters and the stability tests (i.e. ANOVA tests, Calinski-Harabasz pseudo-F index and the Duda-Hart test are available on request), led us to choosing the three-cluster solution. As robustness check, we also ran a Linear Discriminant Analysis on the cluster groups to further verify cluster reliability. The average classification error rate equals 4.6%, confirming the robustness of cluster results. We also controlled for possible multicollinearity among items. 16.3% of the pairwise correlations exhibits a value greater than 0.5, and only 2.6% a value slightly higher than 0.7; this finding confirms the validity of cluster results.

³ Results are available on request from the authors.

Demographic differences among the groups were tested with chi-square tests (Table 3). Clusters are homogeneous for education level, while gender, origin, age, profession, size of the origin city, loyalty and intention to return differ significantly among the three segments.

Classification results of the active variables are shown in Figure 3. The reliability of the three-cluster solution is depicted not only by differences between satisfaction and importance levels, but also by the score variability within and between clusters. The three-dimensional plot simultaneously reports the mean values of importance and satisfaction levels and expectation gaps. The plot also provides information on score variability. Specifically, the size (diameter) of the circles is proportionally related to the mean of the standard deviations observed in each cluster for the three plotted measures on each destination. The four circles used to classify response variability indicate the distribution of the standard deviations by quartiles.

[INSERT TABLE 3]

[INSERT Figure 3]

Table 4 and 5 summarize the outcomes of the cluster profiling. Table 4 refers to sustainability items in the different aspects of the destination (i.e., *active variables*) showing mean scores, standard deviations and results about ANOVA tests (all rejecting the null of equal variances) of each variable, for each cluster; Table 5 shows, in the first part, the overall evaluation of the vacation; in the second part we compare the main destination aspects (mean value of the item scores collected for each destination aspect); the third part highlights the single attributes (included the sustainability items) with the highest/lowest scores.

Cluster I (25%): *Satisfied*. Tourists in the first group consider sustainability important in all aspects and depict the highest level of satisfaction for each item (Figure 3). They represent very satisfied tourists, with the highest rate of intention to return (98.3%).

This group focuses equally on two characteristics: Commerce, Entertainment services and Restaurants, and Urban Environment, rating the first set as the most satisfying factor with respect to sustainability⁴. Even though the Satisfied group finds the sustainability level in hotel and accommodations as greater than expected (the gap equals 11.4%), this represents either the least important or least satisfying aspect of the destination.

The Satisfied group declares that sustainability is better than their expectations (with importance-satisfaction gaps ranging from 4% for Information Services to 11% for Hotel and Accommodations); thus, their needs are largely met.

They depict Hospitality, in the overall destination aspects, as the most important and satisfying aspect of their vacation (9.55), while placing less consideration on Services and Infrastructure in the District. Interestingly, Beaches and Sea is the most important but the least satisfying aspect of the destination (second part of Table 5). The analysis of the single items included in the last aspect leads to important managerial suggestions: Satisfied assign higher importance scores to several aspects of Beaches and Sea (e.g. quality of water and sea, 9.61; safety on the beach and in the sea, 9.63; beaches services, 9.60) than to sustainability attributes. However, the quality of water and sea is the least satisfying (7.29) aspect for this cluster and received the most negative expectation value (the gap is -35.80%) of all items.

⁴ As a robustness check, we also estimated classification functions through Linear Discriminant Analysis. Parameter estimates confirm the relevance of items in determining the cluster profiles (i.e., the higher the parameter, the higher the relevance of the corresponding item on the cluster formation).

Even though Beaches and Sea would seem to be the most important destination attribute, restaurants embody an interesting aspect of a vacation, for these tourists. While the Satisfied group does not consider Commerce, Entertainment and Restaurants an overall important destination feature, they assign sustainability in restaurants the highest scores both in terms of importance and satisfaction (9.46 and 9.03, respectively).

Tourists in this cluster are over 44 years old (Table 3), earn slightly over the mean income and live in big cities. About 20% are inbound tourists and overall the Satisfied group have already visited the District 4.8 times.

In sum, this cluster represents the group of exacting but satisfied tourists who are sensitive to issues of sustainability in tourism. Their vacations focused on two factors: beaches and sea, and restaurants. Managers and local policy makers should improve the quality of beaches and sea (Mycoo, 2014) if they want to focus on this market segment, given this group exhibits low satisfaction and high importance for these aspects.

[INSERT TABLE 4]

[INSERT TABLE 5]

Cluster II (20%): *Critics*. Even though tourists classified in this cluster state importance and satisfaction levels higher than 6, they represent the segment with the lowest levels of both importance and satisfaction and have the highest variability of scores within and between each attribute (Figure 3). About half these tourists (50.6%) were visiting the District of Rimini for the first time, and their intention to return is lower than the first group at 82.6%.

In general, these tourists are interested in a good holiday experience rather than sustainability of the location. They see information services as the relevant destination attribute in terms of sustainability, even though it does not completely meet their expectations. Conversely, they rate sustainability with accommodation and the urban

environment as irrelevant (i.e., not important or satisfying). Compared to the other two clusters, tourists in this group consider sustainability issues as either superfluous or unsatisfactory to having an overall good vacation. All the expectation gaps present negative values (from -17.4% to -23.2%), highlighting a non-negligible distance between their need for sustainability and level of contentment. Sustainability in Hotel and Accommodations (Table 4) represents the least important aspect even compared to all the other attributes of the local system; sustainability in the urban environment is the least satisfying item to this group.

Similar to the destination aspects, the Critic group mainly appreciates the commercial and leisure offers and places importance on beaches and sea, which earned higher scores than any other items, in terms of satisfaction, at the destination. When ranking importance, Critics place hotel room and hotel sustainability in first and last place (i.e. most and least important), respectively.

Among sustainability variables, Critics consider the Information Services promoting green initiatives in the destination as the most important but also unsatisfactory sustainable aspect (Table 4).

This mostly unsatisfied cluster is mainly composed of young tourists, who are male, first time visitors to the District, and either southern Italians (8.7%) or foreigners (23.2%), yet turn out to be generally more sensitive to sustainable issues. This group also contains the highest share of managers and students (8.0 and 12.3), which is evidence of a high education level.

In sum, Critics do not consider sustainability an important factor for a good vacation, and do not seem interested in sustainability. However, they identify information dissemination of green initiatives as one of the main pillars of sustainability (Doe, 1997). These results could lead policy makers towards enriching campaigns on

sustainability with pre-arrival information making the guests aware of local sustainability initiatives; they should also update marketing plans for the destination to include sustainability issues (Font and Tribe, 2001).

Cluster III (55%): *Loyal*. The cluster procedure identified a second group of satisfied tourists that exhibit a slightly lower overall level of importance and degree of satisfaction than the Satisfied group (Figure 3). Cluster III represents the quite satisfied tourists who find the tourism services in line with their expectations (neither better nor worse than expected); their intention to return is slightly lower than the first group at 92.9% (Satisfied at 98.3% and Critics 82.6%). They are tourists who have already visited the District for many times (5.40 vs 4.80 for Satisfied and 3.70 for Critics). Loyal tourists are the most interested in a good holiday experience and are largely satisfied by the hospitality at the destination (Table 5); however, they place less attention on sustainability.

Overall, everything revolves around the beaches and sea. The sustainability and the care for environment in this cluster are strongly focused on the core of the District supply, judging environmental attention and operations as the most important and satisfying sustainable aspects (8.36 and 7.87). Differently from the first cluster, the gaps between satisfaction and importance levels of all the sustainable attributes are lower, indicating the lesser demanding nature of the Loyal cluster. They find that Information services that promote sustainable initiatives are the least satisfactory elements at the destination, and the sustainability of this attribute is the worst among expectations (-5.3%). The needs of this group generally seem fulfilled, especially considering the most important factor at the destination, the quality of services connected to beaches and sea.

This group is primarily workers, who are female, over 25 years old. These Loyal tourists are repeat visitors: 6.1% indicate having taken a holiday in the District for more than 10 times.

In sum, Loyal tourists are focused on beaches and the sea. They have visited the District for more years than the other groups; they appreciate the efforts at the destination to improve water quality, implicitly recognizing the Bathing Protection Plan of Rimini. Policies on quality of water and sea and their results dissemination should be increased to improve satisfaction (and hopefully revenues and loyalty) for tourists in this segment.

Results and policy implications

Despite the strongly recognized positive relationship between pro-environmental operations and tourism (e.g. Chen, 2015; Iniesta-Bonillo et al., 2016; Ramkissoon, Smith and Weiler, 2019), the analysis reveals a mixed effect of different aspects of a destination on tourists. As Sörensson (2010) points out, Rimini is a tourism destination with a “declining brand”, which may be renewed by sustainable policies and investments.

To define specific environmental sustainability policies for a destination, stakeholders and (national and local) government should work together (Pike and Page, 2014), synergically analyzing different emerging issues with different complementary perspectives. Local policy makers holds essential roles in creating a sustainable tourism destination: however, this governance needs support in interpreting and coordinating the recommendations (to resolve ambiguity or lack of relevance at a local level) by the central policy makers and combining strategies that link activities addressed at enhancing tourist satisfaction based on perceived level of importance (from a point of view of sustainability and for a good vacation experience) and the image of the destination itself (Waligo, Clarke and Hawkins, 2015). Several mass and mature tourism destinations host excessive numbers of visitors and view sustainability as a solution for regenerating and rejuvenating stagnant or declining tourism (Dodds and Butler, 2010).

However, from an economic perspective, this strategy may be misplaced if acquired or new tourists do not prioritize destinations adopting a sustainable development approach.

The antithesis of the local government effort in this ongoing process of sustainable destination are defined by economic and political priorities being placed over social and environmental concerns (Mellon and Bramwell, 2018).

Given these considerations and the results from our analysis, identifying policies able to ensure regeneration and rejuvenation of the whole local tourism system in terms of sustainability appears to be a four-sided endeavor.

First, our analysis adds novel insights about priorities for sustainable actions to local managers. Previous literature identified sustainable hotel practices as one of the main drivers of sustainable tourism (among others, Prud'homme and Raymond, 2013). Tourists in every cluster, to differing extents, do not consider this element relevant to the local tourism system compared to other destination attributes. This emerges as a new and more ample perspective of tourists to be used when considering sustainable practices at the destination.

Second, policy makers have to provide short and long-term programs as incentives for sustainable practices and discourage activities that could damage the environmental aspects of the final sustainability objective. These programs may take the form of general business and tourist taxes, enterprises contract grants, or sustainable infrastructure projects. This strategy may be well received by tourists who acknowledge that sustainability is not limited to the tourism industry (i.e., the accommodation sector), but comprises several aspects of the local tourism system as a whole.

Third, local policy makers need to involve stakeholders, community and tourists in sustainable practices, providing education and monitoring activities. Actions should

be devoted to constructing a shared system of indicators able to monitor and benchmark sustainable performance at the destination level (e.g. Torres-Delgado and Lopez Palomeque, 2014; 2018); to establish a tourism observatory to monitor not only volume, but also the impacts of tourism; and to report, reward and promote good practices. It is fundamental that tourist satisfaction is continuously monitored and matched with expectations, marketing results and project developments. As for the local community and tourists, strategic practices should begin with educational projects, which include learning about tourism sustainability, readily available information, and recognizing best practices.

Tourists' knowledge of sustainable initiatives at the destination can become a key driver of managerial planning. Tourists should be informed about environmental sustainable practices and initiatives developed at the destination. In this sense, the strategic agenda on sustainability of the destination could be defined also through the demand-side, by setting some priorities based of insights on where maximal effects can be generated in terms of reduction to the ecological footprint.

Last, communication is essential to sustain best practices. As highlighted in our results on information services, tourists need pre-arrival information aimed at making them aware of local sustainability initiatives from an environmental and social point of view (linking sustainability objectives to strategic marketing; ensuring effective local information delivery and interpretation; using educational programs). This strategy may encourage tourists' sensitivity towards sustainability at the destination and affect their destination and holiday selection process.

From a managerial perspective, the first and second sets of recommendations could be able to guarantee a long-term effectiveness of sustainability initiatives in tourism. An analysis of our results reveals an urgency in implementing the third and

fourth phases, with particular attention to the core of the destination supply: the beaches and the sea.

Conclusions

Our study sheds light on how important environmental sustainability is to tourists at a mature mass tourism destination and how much it influences tourists' satisfaction, in order to develop future strategies.

The customer satisfaction analysis on the District of Rimini shows a very high average score for the overall satisfaction of the local tourism system; this result clearly highlights that this destination is able to meet tourists' needs. Overall, tourists exhibit high loyalty levels, interest, and satisfaction with the District, while, they have difficulties recognizing more than a few environmental practices in line with a sustainable development and in place at the destination.

The general insight from our preliminary analysis is that using and promoting environmental sustainability factors for relaunching and rejuvenating a mature destination might not be an effective solution without an in-depth analysis of both the acquired and potential tourism demand. This is particularly true in a mature and mass tourism destination where many new initiatives are ignored by loyal tourists who are set in their ways and already know what to expect from a holiday at that destination. Rejuvenating the destination utilizing new factors, including pro-environmental initiatives, should begin with ambitious marketing and dissemination activities to inform tourists of practices that are crucial for long-term sustainable development.

Cluster analysis provides useful insights on tourists' characteristics, depicting different ranges of sensitivity to environmental sustainability issues. The first cluster (Satisfied) consists of demanding, but satisfied tourists in all the destination features

analyzed. On the contrary, the second group (Critics) are tourists who appreciate specific information about the services related to sustainability but they consider sustainability as the least relevant and satisfactory aspect. The third cluster (Loyal) is composed of tourists who focus on the beaches and the sea, not only from a vacation point of view, but also in light of environmental sustainability.

Tourists and local stakeholders are getting aware that sustainable tourism is necessary. Our findings provide useful tools to local governments, industry players, communities to plan medium-to-long term policies. Through this perspective, local tourism management should support sustainable practices, by improving the balance between an increasing attention to environmental practices, the preservation of natural, social and cultural integrity and the economic development.

This research has some limitations. First, in order to analyze tourists' assessments of environmental initiatives and aspects (in terms of importance, satisfaction and expectation), we focus only on a unique mass tourism destination. Moreover, in examining tourism demand, we focus the attention only on the environmental facet of sustainability. However, the research is just at the beginning. This research will be repeated aiming to monitor and evaluate the effects of medium and long-term projects implemented in the past and hopefully in the near future. It should also be useful to carry out similar analysis in other tourism destinations, preferable in different stages of their tourism life-cycle in order to investigate where the suitable actions and practices may play a different role and have a different impact on both tourists and the local tourism system. Finally, in line with Kuhlman and Farrington (2010), this analysis should be extended to include the socio-economic side of sustainability, by assessing tourists and stakeholders' awareness and sensitivity toward well-being initiatives or policies.

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Table 1. Satisfaction, importance and expectation

	Importance	Satisfaction	$\Delta = \% \text{Better-Worse}$
<i>Hotel and accommodation</i>			
Room	9.30	8.50	6%
Hotel restaurants	9.00	8.40	10%
Hotel services	9.00	8.20	1%
Additional hotel services	8.40	7.80	-2%
Sports/recreation services	8.40	7.80	-6%
Environmental sustainability	8.20	7.70	-3%
Cronbach's α	0.81	0.81	0.65
Variance proportion	0.78	0.79	0.69
<i>Urban environment</i>			
Safety / peace and quiet in the city	9.00	8.30	5%
Air quality	8.80	8.10	-2%
Open space. street furniture	8.80	8.10	3%
Pedestrian areas and cycle paths	8.70	8.20	5%
Noise level	8.80	8.10	-1%
Road conditions and traffic	8.70	7.90	-1%
Parking	8.60	7.70	-7%
Public transport	8.50	7.90	2%
Heritage conservation	8.50	8.00	4%
Overcrowding	8.50	8.00	-2%
Environmental sustainability	8.30	7.70	-3%
Accessibility for disables	8.30	7.70	-4%
Cronbach's α	0.91	0.91	0.71
Variance proportion	0.72	0.70	0.43
<i>Commerce, entertainment and restaurant</i>			
Dining out	8.70	8.50	20%
Entertainment	8.60	8.30	18%
Environmental sustainability	8.30	7.80	-3%
Shopping	8.20	7.90	15%
Cronbach's α	0.70	0.74	0.50
Variance proportion	0.80	0.84	0.80
<i>Sun and beach services</i>			
Quality of water and sea	9.30	7.20	-39%
Safety on the beach and in the sea	9.10	8.10	-10%
Beach services	9.10	8.60	16%
Beach cleanliness	9.00	8.30	7%
Entertainment amenities	8.80	8.40	20%
Overcrowding on the beach	8.70	8.10	4%
Environmental sustainability	8.40	7.80	-4%
Accessibility for tourists with disabilities	8.40	7.80	-6%

Cronbach's α	0.87	0.84	0.65
Variance proportion	0.75	0.75	0.51
<i>Tourist information</i>			
Information about the city	8.60	8.10	-3%
Info on envir. sustainability	8.40	7.90	-5%
Cronbach's α	0.85	0.83	0.51
Variance proportion	1.00	1.00	1.00
<i>Overall aspects</i>			
Holiday	9.10	8.40	6%
Hospitality	9.00	8.70	19%
City's services and infrastructure	8.90	8.20	-1%
Environmental sustainability	8.60	8.00	-2%
Cronbach's α	0.86	0.81	0.65
Variance proportion	0.96	0.86	0.92

Table 2. Sustainability initiatives

	Percentage
Cycling	28.51
Waste separation	27.09
Public transport	13.33
Energy saving	7.09
Renewable energy (i.e. solar hot water and PV panels)	6.38
Services for travellers with disabilities	5.11
Quality of sea water	4.68
Typical local/traditional products	4.40
Noise reduction	1.84
Water saving	1.56
Total	100

Table 3. Cluster's demographic characteristics

	sample size	Satisfied N = 176	Critics N = 138	Loyal N = 380	Chi-square test	p-value
<i>Gender</i>						
			(%)	(%)	(%)	
	Male	46.0	60.9	42.6	chi2(2) = 13.628	0.001
	Female	54.0	39.1	57.4		
<i>Age</i>						
	18-24	8.0	15.2	11.8	chi2(4) = 10.226	0.037
	25-44	39.8	49.3	44.7		
	45 and over	52.3	35.5	43.4		
<i>Nationality</i>						
	Italian - Nord	50.0	37.7	51.8	chi2(2) = 1.455	0.006
	Italian - Middle	27.8	30.4	26.6		
	Italian - South	2.3	8.7	2.4		
	Foreigners	19.9	23.2	19.2		
<i>Education</i>						
	No qual./primary school	0.0	1.4	0.5		> 0.1
	Middle school	18.2	10.9	16.8		
	High school	62.5	63.8	62.1		
	Degree	19.3	23.9	20.5		
<i>Occupation</i>						
	Manager	2.3	8.0	2.6	chi2(10)=17.286	0.068
	Worker and Employed	45.5	43.5	46.3		
	Entrepreneur	4.0	2.9	1.6		
	Freelancer and Self empl.	18.2	19.6	19.5		
	Student	8.5	12.3	8.7		
	Other	21.6	13.8	21.3		
<i>Origin population</i>						
	Rural	3.4	3.6	2.4	chi2(6) = 26.259	0.000
	<50 thousand	14.2	12.3	9.7		
	50 - 200 thousand	35.8	55.1	58.2		
	> 200 thousand	46.6	29.0	29.7		
<i>Loyalty</i>						
	First time	36.4	50.7	39.2	chi2(6) = 17.672	0.007
	1-5 years	47.2	45.7	44.5		
	6-10 years	10.8	2.2	10.3		
	Over 10 years	5.7	1.4	6.1		
<i>Intention to return</i>						
	No	1.7	17.4	7.1	chi2(2) = 27.061	0.000
	Yes	98.3	82.6	92.9		

Table 4. Clusters profile - Active variables

	Satisfied		Critics		Loyal		Anova	
	Mean	sd	Mean	sd	Mean	Sd	$\chi^2(2)$	pvalue
<i>Hotel and accommodation</i>								
importance	9.313	0.841	6.638	1.139	8.155	0.904	16.681	0.000
satisfaction	8.784	1.025	6.210	1.043	7.655	0.871	9.938	0.007
expectation	0.114	0.522	-0.203	0.529	-0.037	0.409	21.371	0.000
<i>Urban environment</i>								
importance	9.460	0.700	6.891	1.079	8.184	0.912	29.071	0.002
satisfaction	8.932	0.892	6.167	1.071	7.697	0.841	12.632	0.000
expectation	0.063	0.480	-0.217	0.550	-0.013	0.367	41.113	0.000
<i>Commerce, entertainment and restaurant</i>								
importance	9.460	0.692	6.971	1.133	8.182	0.742	52.066	0.000
satisfaction	9.028	0.851	6.406	1.092	7.771	0.794	22.506	0.000
expectation	0.051	0.418	-0.232	0.517	0.008	0.359	29.301	0.000
<i>Sun and beach services</i>								
importance	9.415	0.720	6.906	1.334	8.363	0.853	70.489	0.001
satisfaction	8.909	0.940	6.362	1.120	7.874	0.872	13.564	0.000
expectation	0.063	0.443	-0.217	0.537	-0.021	0.363	35.300	0.000
<i>Tourist information</i>								
importance	9.438	0.714	7.312	1.408	8.250	0.821	94.342	0.001
satisfaction	8.960	0.964	6.848	1.377	7.847	0.959	32.376	0.000
expectation	0.040	0.376	-0.174	0.497	-0.053	0.344	30.152	0.001
<i>Overall sustainability</i>								
importance	9.477	0.725	7.587	1.151	8.479	0.937	32.874	0.000
satisfaction	9.063	0.870	6.949	1.109	7.953	0.879	13.382	0.001
expectation	0.114	0.398	-0.159	0.516	-0.032	0.331	44.272	0.000

Table 5. Clusters profile – Supplementary variables

	Satisfied		Critics		Loyal	
<i>Overall aspects (aspects that present the highest/lowest scores)</i>						
Most important	Hospitality	9.55	Holiday	8.90	Holiday	8.93
Most satisfying	Hospitality	9.30	Hospitality	8.37	Hospitality	8.58
Least important	City's services and infrastructures	9.47	Sustainability	7.59	Sustainability	8.48
Least satisfying	City's services and infrastructures	8.98	Sustainability	6.95	Sustainability	7.95
<i>Destination aspects (mean value of the item' scores in each section)</i>						
Most important	Beaches and sea	9.44	Beaches and sea	8.30	Beaches and sea	8.74
Most satisfying	Information services	8.98	Comm. entert. and Restaurants	7.49	Beaches and sea	8.03
Least important	Comm. entert. and restaurants	9.22	Information services	7.64	Comm. entert. and restaurants	8.26
Least satisfying	Beaches and sea	8.62	Information services	7.03	Information services	7.90
<i>Destination Attributes, included sustainability (item scores)</i>						
Most important	Hotel rooms	9.73	Hotel rooms	9.12	Quality of water and sea	9.17
Most satisfying	Restaurants	9.09	Beaches services	8.33	Beaches services	8.41
Least important	Sports/recreation services (hotel)	8.82	Sustainability in hotel and acc.	6.64	Shopping	8.02
Least satisfying	Quality of water and sea	7.29	Sustainability in urban environment	6.17	Quality of water and sea	7.45
<i>Environmental practices (% of tourists in the cluster)</i>						
Recognized (1st)	Recycle	37.5	Cycle lanes	31.9	Cycle lanes	28.4
(2nd)	Cycle lanes	26.1	Recycle	19.6	Recycle	27.2
Not Recognized 1st)	Water saving	1.14	Sea quality/water saving/noise reduc.	2.90	Water saving	1.59
(2nd)	Typical local prod./ noise reduction	1.70	Typical local prod.	5.07	Noise reduction	1.87

Figure 1. Map of destination attributes

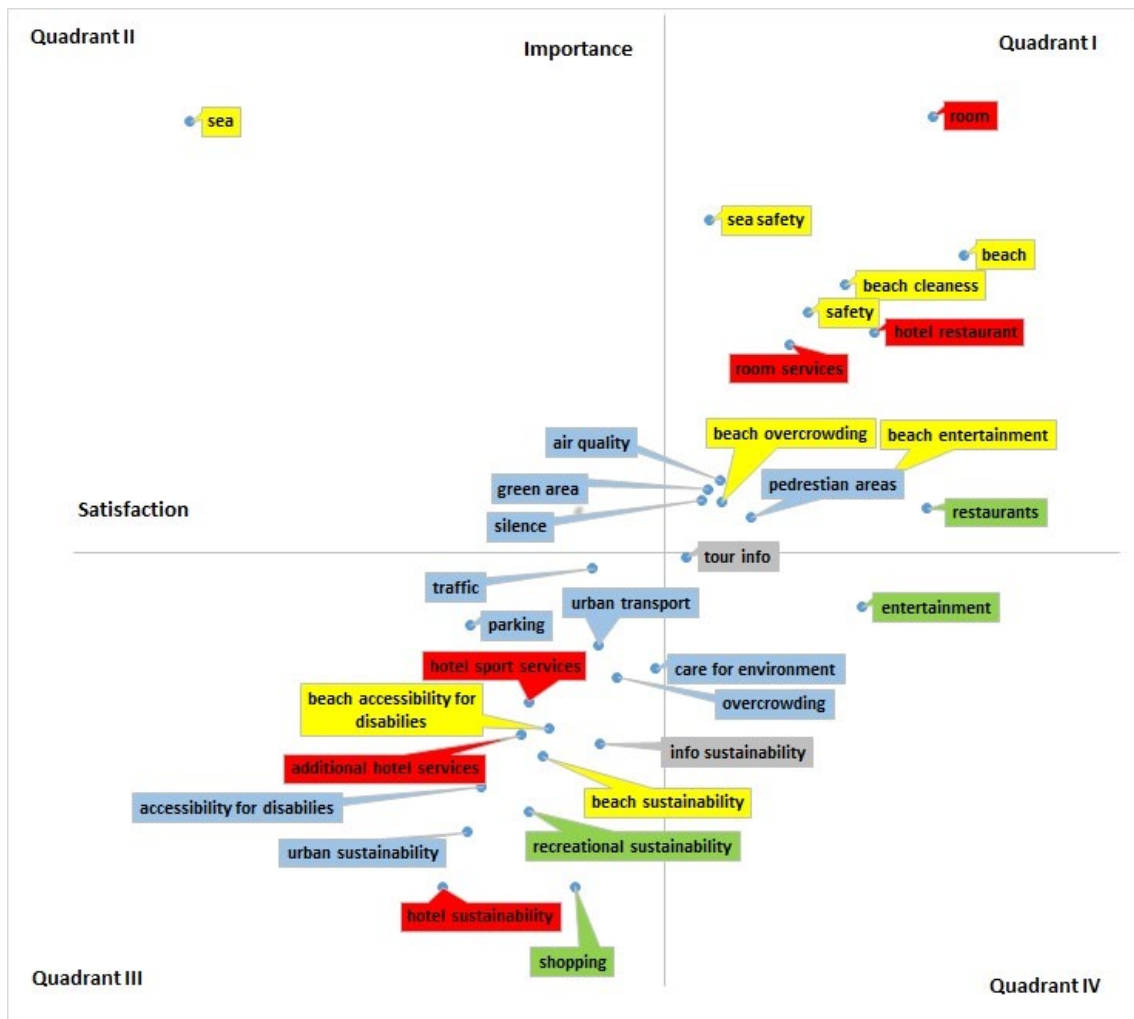


Figure 2. Map of expectation gaps

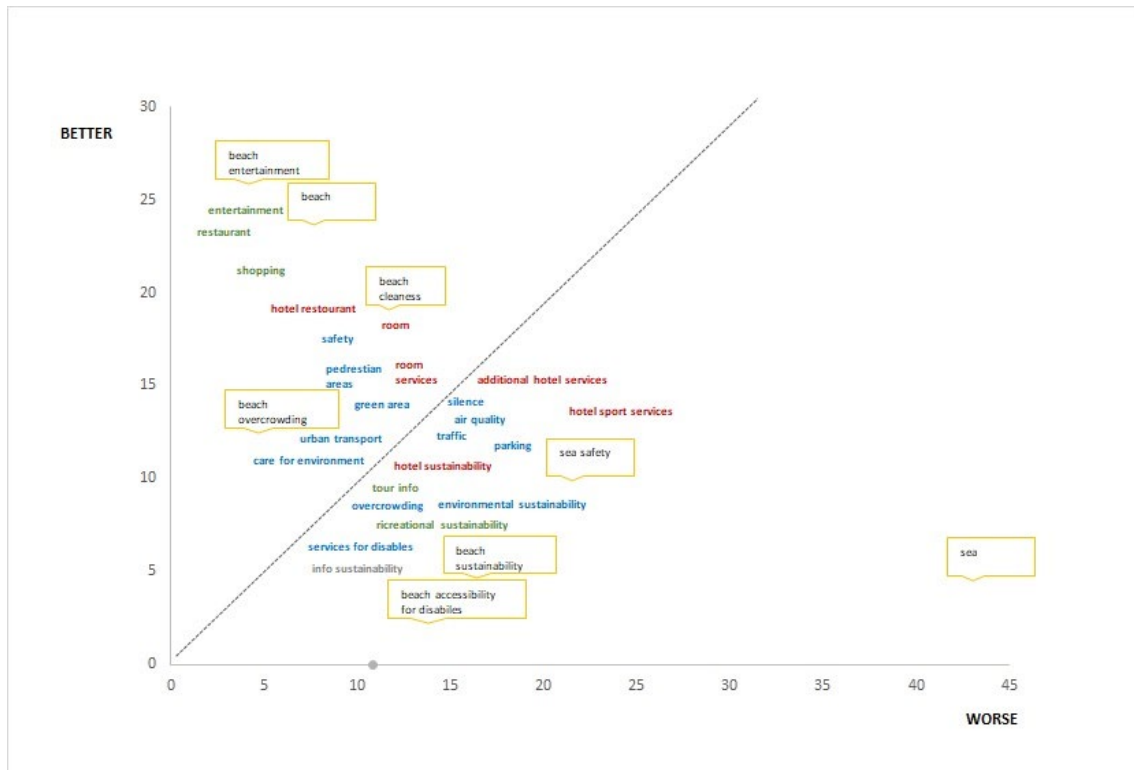


Figure 3. The cluster mapping with respect to sustainability

