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We review published profiles of green tourists and assess the managerial usefulness of this segment using theoretical criteria of segment attractiveness. Results indicate that much is known about the distinctive characteristics of green tourists. Very little, however, has been done to assess whether green tourists are substantial enough to represent a useful target market, whether a customized marketing mix can be designed, whether they can be reached through specific communication channels and whether green tourists can be identified repeatedly. These results provide a clear direction for future research into the green tourist market segment which is essential for a marketing-oriented approach to sustainable tourism to be successful.

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Are Green Tourists a managerially useful target segment?

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Keywords: sustainable tourism, green tourists, a priori segmentation, commonsense segmentation, a posteriori segmentation, data-driven segmentation, profiling

INTRODUCTION

Sustainable tourism is not a new area of research. An extensive body of literature exists investigating the damage tourism does to natural resources (for instance, Driml, 1997; Gössling, 1999; Vail & Hultkrantz, 2000; Chan & Lam, 2002), and measures that can be taken to prevent or reduce the negative environmental impact of tourism (for instance, Hunt & Auster, 1990; Davis & Gartside, 2001; De Burgos-Jiménez, Cano-Guillén & Céspedes-Lorente, 2002; Page & Thorn, 2002). The fact that a special journal exists as an outlet for sustainable tourism studies provides additional empirical evidence of the large body of work and the importance of the issue to tourism.

In the past a number of authors have proposed the use of selective marketing as an approach to sustainable destination management (Middleton, 1998). Such an approach implies the use of a standard marketing technique, market segmentation, to target tourists who behave in an environmentally friendly manner. Market segmentation refers to the "dividing [of] a market into smaller groups of buyers with distinct needs, characteristics or behaviours who might require separate products or marketing mixes" (Kotler & Armstrong, 2006). In the context of tourism, market segmentation can form the basis of specializing in one single segment (eg culture tourists) or a combination of segments (eg families).

A number of criteria have been proposed in the past to help managers assess whether a market segment is useful or not. Kotler (1997) emphasizes that two conditions must be met: (1) the segment has to be attractive and (2) the segment has to fit with the business' (or destination's) objectives and resources. To be attractive, segments must meet five criteria (Kotler & Armstrong, 2006). They have to be measurable, accessible, substantial, differentiable, and actionable.

Measurability means that the "size, purchasing power, and profiles of the segments can be measured" (Kotler and Armstrong, 2006: p. 208). Managers need to be able to identify whether an individual is a member of a specific segment. For example, female travelers represent a target segment that is extremely easy to measure. It would be no problem in the destination choice process to discriminate between female and male travelers and communicate to the female travelers specifically. Morrit (2007) gives a more specific definition of the measurability criterion, specifying it should focus on the ability to calculate numerical estimates of size, frequency, growth rates and profit. For the purposes of this paper we use the original definition suggested by Kotler and Armstrong (2006).

For a segment to be *accessible* it has to be ensured that members of the segment can be reached. This is of fundamental importance because destination or tourism business managers have to be able to select communication channels that will have a high probability of being read by or listened to by segment members. For example, geographic market segments – arguably the most common form of segmentation applied in tourism – make accessibility very easy for a tourism organization as all communications are in one language and a range of communication channels in one country can be used to advertise the destination to the chosen segment.

Whether a segment is large enough and profitable enough (*substantiality*) depends on the size of the tourism destination and its infrastructure. The segment of health tourists may not be substantial enough as a target segment for an entire country; it may well be sustainable enough for a regional spa resort, however.

The criterion of *differentiability* means that segments have to be distinctly different from each other, which implies that it has to be possible to develop a customized marketing mix for them. For instance, adventure tourists differ significantly from culture tourists in their motivations to travel: adventure tourists seek excitement and an adrenaline rush, culture

tourists want to enjoy another country's cultural treasures. Consequently, different benefits have to be communicated to these segments in order to attract them to visit a destination.

If a manager is able to formulate effective programs for attracting and serving a segment, then it is considered to be *actionable*. A small wildlife park may identify that a large proportion of their visitors are independent travelers from Europe, but does not have the resources to be able to develop an appropriate marketing program. On the other hand, the same organisation may also identify that a second large segment are travelers from Asia, who join bus tours run by an Australian company. This segment could be considered more actionable because the organization's resources could be more effectively used in targeting the Asian bus traveler market through the Australian firms operating the bus tours.

A number of authors propose a similar list of criteria. Evans and Berman (1997) propose the following five: (1) differences between customers (*differentiable*), (2) similarities between members of the segment allowing for targeting, (3) ability to measure needs and attitudes (*measurability*), (4) sufficient size to produce sales (*substantiality*), and (5) possibility to reach the segment in an efficient way (*accessibility*). Morrit (2007) includes Kotler and Armstrong's (2006) criteria as well as four more – (1) defensibility from competition, (2) durability (stability over time), (3) homogeneity within segments, and (4) competitiveness (ability to offer a better or unique product which better serves the segments needs). Morrit also includes the criteria of compatibility with other served/targeted segments. Wedel and Kamakura (2000) propose six criteria, four of which are in line with Kotler and Armstrong's (2006) measurability (which Wedel and Kamakura label identifiability), substantiality, actionability and accessibility. Wedel and Kamakura define identifyability as the degree to which distinct groups of customers can be recognised in the marketplace using specific segmentation bases. Substantiality is again defined as the degree to which the segment will ensure profitability. Wedel and Kamakura refer to accessibility as the degree to

which managers are able to reach the segment through promotional or distributional efforts. Lastly, they suggest that a segment can be classified as actionable if their identification can provide guidance for decisions being made about the effectiveness of specific marketing instruments. Wedel and Kamakura also suggest that actionability refers to the consistency between customers in the segment, the marketing mix necessary to satisfy their needs and the goals and competencies of the firm. This seems to address Kotler's (1997) second criteria of managerially useful segments.

The additional two criteria that Wedel and Kamakura propose are *stability* and *responsiveness*. A segment is stable when repeated computations using the same data set lead to the same results. A possible measure for this criterion is the Rand index proposed by Hubert and Arabie (1985) which can also be applied for split sample stability assessment. Stability over time is another interesting aspect. Segments are expected to either be stable in nature, but changing in size or group membership over time, or alternatively, they should be stable in size and membership, but the underlying characteristics of the segments may change.

Responsiveness of a segment implies that the segments have a unique response to marketing mix stimuli. This criterion involves heterogeneity within segments in relation to their responses to marketing communications. As Wedel and Kamakura state, it is not sufficient for segments to respond to changes in marketing communications, they must do so in a way that is different from other segments. For example, adventure tourists may respond to a fast-moving video clip which shows young people engaging in action activities by booking a vacation whereas cultural tourist may not even remember such an advertisement.

In addition to Kotler and Armstrong's (2006) criteria of measurability, accessibility, substantiality, differentiability and actionability, we include Wedel and Kamakura's (2000) stability criterion and, as a subset of the differentiability criterion, responsiveness.

Consequently, for a destination manager to choose to target green tourists as a market segment, three criteria have to be met: (1) a distinct market segment of green tourists, or Biocentric Tourists (Fairweather, Maslin & Simmons, 2005), or environmentally friendly tourists (Dolnicar, Crouch & Long, 2008; Dolnicar & Leisch, forthcoming) has to exist to satisfy the fundamental criterion of differentiability, (2) such a segment has to be in line with a tourism destination's or tourism business' objectives and positioning, and (3) the segment has to be attractive (managerially useful).

The first of these three conditions (differentiability) has been studied in the past, intentionally or unintentionally. Intentionally, a number of recent studies have developed empirical profiles of green tourists specifically in view of attempting to identify the characteristics of a potential market segment. Unintentionally, the entire ecotourism research area has contributed to our understanding of tourists who care about environmental preservation. The original interest of the latter papers, however, is in the understanding of a particular subset of green tourists, such as those who wish to spend a vacation in a natural environment or those who wish to learn about the environment, rather than development of profiles of green tourists as a whole.

The second criterion (fit with the strategic orientation of a destination) cannot be investigated at a general level, it can only be assessed on a case-by case basis: like in any case of market segmentation, a tourism business or destination needs to assess which of the available market segments can best be catered for given the specific offer. Even if the green tourist segment is highly attractive in terms of the five criteria discussed above, it may not be suitable for every destination or business. The suitability or strategic fit between segment (demand) and destination (supply) can only be assessed by each destination for their specific situation. For example, if it was determined that green tourists actively seek out less 'luxurious' accommodation, then for a five star hotel this might not be a managerially useful

target segment. Yet for businesses providing cabins and camping facilities, green tourists could be a very useful segment to target and attract.

The aim of this paper is to contribute to our knowledge relating to the third criterion (attractiveness or managerial usefulness as assessed by Kotler's criteria). We review prior work that provides insight into the market segment of green tourists and assess to which extent the information allows the assessment of green tourists along established criteria for segment attractiveness. In doing so, we extend the work of Dolnicar, Crouch and Long (2008) who analysed prior work on the segment of green tourists with respect to differentiability. The central conclusion from their review is that very little is known about environmentally friendly tourists in the general tourism context. Some knowledge about their characteristics exists in the area of ecotourism but the fact that virtually each study uses a different way of operationalizing ecotourists makes it impossible to draw general conclusions, as different operationalizations logically leads to different profiles of these groups.

METHODOLOGY AND RESULTS

The review covered studies published in the Journal of Travel Research, Tourism Management, Annals of Tourism and Journal of Sustainable Tourism from 1990 to 2006. These four outlets were chosen because the Journal of Travel Research, Annals of Tourism Research and Tourism Management are the three highest ranking journals in tourism research internationally and can therefore be assumed to include only studies of highest methodological rigor. The Journal of Sustainable Tourism was included because it is not only the main outlet for research in the area of sustainable tourism but also because it is the highest ranked journal within this niche.

The selection criteria used to determine relevant articles was that they should be empirical studies which included a segmentation or description of green tourists. Green tourists are defined as tourists who behave in an environmentally friendly manner when on vacation in a wide range of tourism contexts, whereas ecotourists behave in an environmentally friendly manner on vacation in the context of nature-based tourism. Ecotourists thus represent a subset of green tourists. Because of the small number of studies which have investigated green tourists empirically to date, many of the reviewed studies are from the area of ecotourism. Ecotourism represents the most mature area in which green tourist have been empirically profiled in the past. In order to broaden the scope of the review from only ecotourism studies, we have also included three additional studies which look at profiling green tourists in a more general context.

Using the inclusion criteria mentioned above a total of 21 studies were reviewed. Each study was coded along the six criteria proposed for the assessment of managerial usefulness of segments: measurability, accessibility, substantiality, differentiability (including responsiveness), actionability and stability. Each paper was examined to determine if they

had or had not included any mention of factors that may indicate they were addressing the six criteria (taken from Kotler & Armstrong, 2006 and Wedel & Kamakura, 2000). For example, if a study asked respondents questions regarding their media viewing or information search habits, it was assessed as having addressed the accessibility criterion. Assessment of the stability criterion was based on the methodology of the study, in particular whether or not cluster analysis was used and if yes, was the analysis conducted more than once. The outcomes of the assessment of each empirical study along all six dimensions were documented in an excel sheet which was subsequently used to compute frequency statistics.

The frequency results of the full review are provided in Table 1. As can be seen, the results vary dramatically across the various criteria of managerial usefulness of segments: with respect to measurability and differentiability a large proportion of studies fulfilled the requirements. With respect to accessibility, actionability, stability and substantially, however, the results of the review are concerning: no more than one fifth of the studies contain information on that criterion. These results suggest past studies fail to address a number of fundamental requirements that would indicate managerial usefulness of a market segment and, as such, the question must be raised as to whether profiles of green tourists developed to date are merely academic exercises of little managerial value?

Table 1: Overview of findings

Criterion	Frequency	Percentage of studies
Differentiability	19	90%
Responsiveness	0	0%

Measurability	20	100%
Level 1	20	100%
Level 2	7	33%
Level 3	13	62%
Actionability	3	14%
Accessibility	4	19%
Substantiality	4	19%
Stability	0	0%
Using cluster analysis	6	

The detailed findings relating to each one of the criteria are discussed below. Details

on the coding of each study are provided in Table 2 in the Appendix.

Differentiability

Differentiability is the one criterion one would expect all profiling studies to perform

well, given that the very aim of profiling and segmentation studies is to identify or create

segments which are different from one another. Differentiability essentially refers to

differences in tourist's segment characteristics with respect to the actual segmentation base. The review results indicate that the most frequently identified point of differentiation of green tourists is their interest in learning about nature. Motivations, activity preferences, benefits sought, trip characteristics (such as group size) and intended behaviour also featured in this dimension. Interestingly, two studies did not identify differentiating criteria of tourist interested in protecting the environment. The reason is that the aim of the studies was to identify constraints that keep people from participating in nature based activities (Nyaupane, Morais & Graefe, 2004; Pennington-Gray & Kerstetter, 2002). While this is a worthwhile aim for the tourism population in general, it would be very interesting to undertake a follow-up study to determine how these constraints differ between environmentally friendly tourists and other tourists.

The reviewed literature suggests a variety of characteristics and variables upon which the green tourist segment can be differentiated. These include their regard/concern for nature (Ballantine & Eagles, 1994; Blamey & Braithwaite, 1997; Fairweather, Maslin & Simmons, 2005; Uysal et al., 1994; Wurzinger & Johansson, 2006), socio-demographics (Dolnicar, 2004; Hong, Kim & Kim, 2003), benefits sought (Palacio & McCool, 1997; Weaver & Lawton, 2002), motivations (Crouch et al., 2005; Diamantis, 1998; Hvengaard & Dearden, 1998; Weaver & Lawton, 2002; Wight, 1996a; Wight, 1996b), interest in learning about nature (Juric, Cornwell & Mather, 2002), intended behaviour (Kerstetter, Hou & Lin, 2004), quality expectations (Khan, 2003) and activity preferences (Meric & Hunt, 1998; Weaver & Lawton, 2002; Wight, 1996a; Wight, 1996b; Wurzinger & Johansson, 2006). These results support those of Dolnicar and Matus (2007), who assessed the current state of knowledge about eco and sustainable tourists and concluded that the many different operationalisations of ecotourism studies have led to inconsistent profiling of this segment. As such, even though the reviewed articles do address the criteria of differentiability, their inconsistent findings

give no clear indication of exactly what characteristics differentiate green tourists from others.

One specific dimension of differentiability is responsiveness (unique response of a market segment to marketing mix stimuli). As can be seen from Table 1, none of the reviewed studies addressed this criterion, either explicitly or implicitly. While other criteria of differentiation may be sufficient to develop a targeted marketing campaign, the managerial usefulness of segmentation solutions would be greatly increased if specific responses to marketing mix stimuli by green tourists were known.

Measurability

The results with respect to the criterion of measurability are very encouraging. All studies contained some indication of measurability of green tourists, recommending a wide variety of variables that could be used to identify members of the green tourist segment. In order to make the review more manageable, the measurability criterion was broken down into three levels: Level 1 indicates that basic demographic variables such as age, gender, education level and profession can be used to measure segment membership. Level 2 represents variables which require additional questioning of tourists but are not sensitive, such as duration of stay, their level of interest in the environment and environmental issues, and their preferences for certain activities. Finally, Level 3 measurability implies that information about more sensitive personal characteristics is required in order to be able to identify whether a random tourists is a member of the green tourist segments. Examples of such information are purchase patterns of environmentally friendly products, stance on controversial environmental and social issues, level of involvement, motivations and level of environmental consciousness.

One specific example of how measurability is accounted for in an empirical study is provided by Weaver and Lawton (2002) who suggest that in addition to basic demographics, green tourists can be identified on the basis of a combination of Level 2 and Level 3 measurability variables. Level 2 variables include longer than average trip times, being physically active individuals and being interested in specialized trip services. Level 3 variables include having a strong environmental commitment/consciousness, travelling in smaller than average groups, and placing an emphasis on personal experience.

As can be seen from Table 1, all reviewed papers identified some Level 1 characteristics, a further seven articles also identified Level 2 variables, and 13 papers also identified Level 3 variables. This is a very encouraging result as it indicates that green tourists do differ in ways which are easy to measure (Level 1) and which could consequently be used to identify green tourists in their country of origin, which, in turn, would enable active target marketing.

The high proportion of studies providing details about the differentiability and measurability of green tourists as they were operationalized is very encouraging and can be seen as evidence that the segmentation solutions and profiles of green tourist developed in the past represent a good starting point for managers to develop customized marketing mix strategies. Unfortunately, this conclusion cannot be drawn for the remaining criteria of managerial usefulness.

Actionability

Actionability is only discussed in 14 percent of studies. Actionability is critical for target marketing success. If segments are not actionable a customized marketing mix cannot be developed, which fundamentally questions the usefulness of any segment profile. Practically this means that we know that people exist who behave in a highly environmentally

friendly way, but we cannot find a communication message, product and pricing strategy which would specifically attract this segment. Only three of the reviewed studies addressed the actionability criterion, although none of them did so empirically: instead they inferred from the differentiability characteristics that product offerings and promotional activities should highlight the environmental features in order to attract green tourists. Uysal et al. (1994) suggests that in order to attract the green tourist market, the destination must be promoted using flora and fauna, natural attractions and uncrowded facilities, as this is what their study identifies as being the major benefits sought. Similarly Wight (1996b) concludes that given green tourists are seeking a wide range of activities, the product offering should highlight the range of experiences available or develop links with other companies who can offer complimentary experiences. Finally Wurzinger and Johansson (2000) state that advertising declaring the destination/product as environmentally friendly will attract green tourists because of their high level of environmental concern.

While the fact that actionability is largely ignored when green tourists are profiled and described is discouraging and questions the managerial usefulness of such studies, it should be noted that the green tourists as defined by these studies may well be actionable. It may be that the authors merely failed to discuss this aspect in detail. The investigation of actionability of green tourists thus represents an important area of future work which has the potential to significantly strengthen the demand-driven approach (Dolnicar, 2006) of sustainable tourism.

The situation is similar for the criteria of accessibility and substantially. Only 19 percent of articles discuss either how substantial or how accessible the green tourists profiled in the empirical studies are.

Accessibility

Accessibility is addressed by only four studies: Crouch et al. (2005) conclude that Environmentally Caring Tourists pay little attention to traditional media, instead making heavy use of guidebooks. Meric and Hunt (1998) asked respondents to rank the importance of various information sources used when planning a vacation. Their results indicate that the top five sources were personal experience, travel books/guides, word of mouth, tourist bureaus and 1800 information lines. Weaver and Lawton (2002) found that word of mouth and brochures were of equal importance as an information source. Interestingly, their results also indicated that the Internet was not a widely used source among their green tourist segments. In addition, Weaver and Lawton found that some green tourists tend to be affiliated with environmental clubs and organisations which could provide a useful access point. Ryan, Hughes and Chirgwin (2000) found the top three sources of information about destinations to be another person (38%), brochures and other materials collected at information centres (23%), and tour operators (10%). These four studies suggest destination managers seeking to attract green tourists should focus their targeting efforts on word of mouth, travel guides and brochures. However, more studies addressing the importance of various information sources to green tourists are needed to develop deeper knowledge about the most effective way to reach this segment.

Substantiality

Substantiality was addressed by only four papers (Dolnicar, 2004; Hong, Kim & Kim, 2003; Kerstetter, Hou & Lin, 2004; Palacio & McCool, 1997) and their focus was on identifying expenditure behaviour of green tourist segments. Dolnicar's (2004) study concluded that the sustainable tourist segment in Austria spends approximately 13% more per day than non sustainable tourists. In addition, sustainable tourists spend an average two days longer at the destination. Palacio and McCool (1997) state there is a need to collect data on expenditure and link this data to specific segments of green tourists. Hong, Kim and Kim

(2003) indicate that green tourists do not seem to show preference based on seasonality. Given the tourism industry often faces profitability constraints on the basis of seasonality; this indicates the green segment has the potential to provide profitability benefits. Lastly, Kerstetter, Hou and Lin's (2004) study concluded that green tourists did not strongly agree they would be willing to spend more money in the destination's local area, purchase local souvenirs or environmentally friendly products. This would have serious implications for any assessment of profitability of the segment and ability of the segment to contribute to the economic prosperity of the destination's local area. These contradictory conclusions suggest the need for more detailed investigation into the substantiality of the green tourism segment, and should be extended beyond expenditure patterns to incorporate other variables such as segment size and life value of the segment.

Stability

Finally, the stability criterion was only relevant for a subset of the studies that were reviewed: those six studies that used cluster analysis to identify a segment (Blamey & Braithwaite, 1997; Fairweather, Maslin & Simmons, 2005; Hvengaard & Dearden, 1998; Kerstetter, Hou & Lin, 2004; Palacio & McCool, 1997; Weaver & Lawton, 2002). The other articles used basic frequencies and percentages, factor analysis, logistic regression or conjoint analysis to provide descriptions of green tourists. Specifically it was reviewed whether these six studies conducted replication studies to ensure that the final solution was not merely a random solution. Of the six papers using cluster analysis, four computed a number of segmentation solutions with different numbers of clusters, but none checked the stability of results for the same algorithm and the same number of clusters. The other two only computed one segmentation solution. We can conclude that stability of green tourist segments has not been assessed to date.

CONCLUSIONS, LIMITATIONS AND FUTURE WORK

A wide range of measures have been used in past decades by destination managers to improve the sustainability of their local tourism industry, to reduce the ecological footprint of tourism at a destination. Yet a marketing strategy widely used in tourism marketing, market segmentation, has not been adopted to improve destination sustainability. Market segmentation could be used by destinations to specifically target individuals who are known to behave in an environmentally friendly manner when on vacation (green tourists). One possible reason that such a strategy – although common in tourism (e.g. targeting cultural tourists, targeting adventure tourists etc.) – is not being used to reduce the environmental footprint at the destination may be that there is a distinct lack of knowledge about key characteristics of the segment of green tourists.

The aim of this paper was to assess current knowledge with respect to theoretical criteria for the evaluation of managerial usefulness of segments: whether they are measurable, accessible, substantial, differentiable, and actionable.

To achieve this aim an analysis of empirical studies published in the leading outlets of tourism research in general and sustainable tourism was conducted. The review supports the hypotheses that lack of knowledge about green tourists and consequently the inability of destination managers to assess the potential value of such a segment is likely to contribute significantly to the low uptake of the green tourist segmentation strategy.

Findings indicate that a significant amount of knowledge is available in the areas of differentiability and measurability: many studies report that green tourists are distinctly different from other tourists groups, both with respect to criteria relating to environmental concern and friendliness (differentiation) as well as other personal characteristics which can be used to identify green tourists (measurability). The analysis also revealed, however, that

the body of knowledge in this area is the cumulative result of the findings of many empirical studies that chose to define and operationalize green tourists in very different ways. Consequently it has to be concluded that - while a significant amount of knowledge exists about the characteristics of green tourists – a lot of information on the profile of green tourists is not very reliable: different studies come to different conclusions about the nature of differences. Future empirical work is urgently needed in this area. Optimally, future research would use the broadest possible definition of green tourists (behaviour in an environmentally friendly manner irrespective of the vacation context) and use representative samples of tourists. This approach would enable conclusions to be drawn which could be generalized and even replicated across countries to develop a cumulative body of knowledge based on the same operationalization of green tourists.

A second finding resulting from the present study is that very little is known about the substantiality, accessibility, actionability and stability of green tourists. The absence of knowledge about green tourists regarding these criteria makes it highly risky for a destination manager at this point in time to choose green tourists as a market segment because these criteria are essential to the assessment of the managerial usefulness of a market segment to a destination. While future research work related to the criteria of differentiability and measurability can contribute most by adopting a broad and consistent definition and operationalization of green tourists, it can be concluded that any future work that will provide insight into the substantially, accessibility, actionability and stability of green tourists is needed. For instance, a study including a representative sample of tourists visiting a certain destination would enable researchers to assess the approximate size of the green tourism market segment. It would furthermore enable additional investigation of possible sub-segments of green tourists, one of which could be hypothesized as being ecotourists.

The main limitation of the current study is the small proportion of studies investigating green tourists beyond the context of ecotourists. Green tourists as a market segment should not be viewed automatically as nature-based tourists. Segment profiles of green tourists in the more general tourism contexts are only slowly emerging (Dolnicar, 2004; Crouch et al., 2005; Fairweather, Maslin & Simmons, 2005). As the number of studies of such nature increase, it will be interesting to assess whether these studies provide more comprehensive assessments of the managerial value of the green tourism segment.

It can be concluded from this research study that – despite significant interest in the area of sustainable tourism – little is known about tourists who could best contribute to a small ecological footprint of the tourism industry: green tourists. While the concept of targeting green tourists is a promising strategy, it appears that adoption by tourism destinations is prevented because little empirical knowledge is available about the true managerial value of such a segment. Only if the managerial value is clear to destination managers will they consider adopting a segmentation approach. Future research will show whether targeting green tourists has the potential of reducing the ecological footprint of tourism at a destination without a sacrifice in tourism revenues.

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APPENDIX: REVIEWED ARTICLES

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Authors	Differentiability	Responsive-ness	Measurability	Action-ability	Accessibility	Substantiality	Stability
Ballantine & Eagles (1994)	Yes – trip length and interest in learning about nature	Not discussed	Level 1/2 – basic demographics, learning about environment, how long they will spend travelling	Not discussed	Not discussed	Not discussed	No cluster analysis
Blamey & Braithwaite (1997)	Yes – regard for nature	Not discussed	Level 1/3 – basic demographics, knowledge about nature, purchase of env. friendly products, reaction to controversial issues	Not discussed	Not discussed	Not discussed	Cluster analysis, but no repetitions
Crouch et al. (2005)	Yes - activity preferences and expenditure patterns	Not discussed	Level 1/3 – basic demographics, interest in nature and local lifestyle/culture	Not discussed	Yes – information sources used in trip planning	Not discussed	No cluster analysis
Diamantis (1998)	Yes – involvement and motivation	Not discussed	Level 1/ 3 – basic demographics, levels of involvement and knowledge structure	Not discussed	Not discussed	Not discussed	No cluster analysis
Dolnicar (2004)	Yes – socio demographics, travel behaviour	Not discussed	Level 1 – basic demographics	Not discussed	Not discussed	Yes – higher average daily expenditure, longer trip length	No cluster analysis
Fairweather, Maslin & Simmons (2005)	Yes – environmental concern/ awareness	Not discussed	Level 1/3 – basic demographics, awareness of ecotourism labels, willingness to pay for labelled accommodation, environmental concern	Not discussed	Not discussed	Not discussed	Cluster analysis, but no repetitions
Hong, Kim & Kim (2003)	Yes – socio-demographic characteristics	Not discussed	Level 1/2 - basic demographics plus interest in environment and conservation	Not discussed	Not discussed	Yes -respondents did not show usual link to seasonality and trip preference	No cluster analysis
Hvengaard & Dearden (1998)	Yes – motivation for travel and willingness to spend money	Not discussed	Level 1 – basic demographics	Not discussed	Not discussed	Not discussed	Cluster analysis, but no repetitions
Juric, Cornwell & Mather (2002)	Yes – interest in learning about and experiencing nature	Not discussed	Level 1/2 – basic demographics, learning about nature and wanting to experience nature	Not discussed	Not discussed	Not discussed	No cluster analysis
Kerstetter, Hou & Lin (2004)	Yes – intended behaviour	Not discussed	Level 1/3 – basic demographics, motivational and behavioural intentions	Not discussed	Not discussed	Yes – no strong willingness to spend more in local area.	Cluster analysis, but no repetitions
Khan (2003)	Yes – quality expectations	Not discussed	Level 1/3 – basic demographics, willing to spend more, high environmental concern, seeking more active and participatory experiences	Not discussed	Not discussed	Not discussed	No cluster analysis
Meric & Hunt (1998)	Yes – activity preferences, travel attractions, inform. sources	Not discussed	Level 1/2/3 – basic demographics, interest in nature oriented activities plus physical activity	Not discussed	Yes - Information source used in trip planing	Not discussed	No cluster analysis
Nyaupane, Morais & Graefe (2004)	No – constraints study	Not discussed	Level 1/3 – basic demographics, motivated by need to escape pressure of daily life and want to enjoy undisturbed nature	Not discussed	Not discussed	Not discussed	No cluster analysis
Palacio & McCool (1997)	Yes – benefits sought, socio-demographics and trip characteristics (time, group size)	Not discussed	Level 1/3 – basic demographics, motivated by need to escape pressure of daily life and engage in activities which are educational and ecologically responsible	Not discussed	Not discussed	Yes – recommend collecting data on expenditure patterns and linking these to segments	Cluster analysis, but no repetitions
Pennington-Gray & Kerstetter (2002)	No – constraints study	Not discussed	Level 1/2 – basic demographics, interest in experiencing nature, being physically active, socially and env. conscious	Not discussed	Not discussed	Not discussed	No cluster analysis
Ryan, Hughes & Chirgwin (2000)	Yes – motivations and behaviour	Not discussed	Level 1 – basic demographics,	Not discussed	Yes – information sources used in trip planning	Not discussed	No cluster analysis
Uysal, Jurowski, Noe & McDonald (1994)	Yes – environmental concern	Not discussed	Level 1/3 – basic demographics, trip behaviour	Yes – promote native flora and fauna, natural attr., uncrowded facilities	Not discussed	Not discussed	No cluster analysis
Weaver & Lawton (2002)	Yes – trip motivation, benefits and activities sought	Not discussed	Level 1/2/3 –basic demographics, activity preferences, motivations	Not discussed	Yes – information sources used in trip planning	Not discussed	Cluster analysis, but no repetitions
Wight (1996a&b)	Yes – activity preferences and motivations	Not discussed	Level 1/2/3 – basic demographics, activity preferences plus motivations	Yes – highlight wide range of experiences or links with companies with compl. offers	Not discussed	Not discussed	No cluster analysis
Wurzinger & Johansson (2000)	Yes – environmental concern, activity preferences	Not discussed	Level 1/3 – basic demographics, environmental concern	Yes – declaring as env. friendly	Not discussed	Not discussed	No cluster analysis