

# How green are visitors at a green wine destination in South Africa?

First submission: 12 September 2011

Acceptance: 11 October 2012

Policies that focus on the protection of the environment are continuously being developed to combat the devastating effects of global warming on, among others, the wine industry. This article segments and analyses wine visitors and their green behaviour at Spier, one of South Africa's first wine farms to implement green initiatives. In 2011, a visitor survey was conducted at the wine farm, when 161 questionnaires were administered. Respondents were clustered according to their 'green' behaviours at home, and two clusters were identified: 'dark green' and 'light green' consumers. These clusters differ significantly in their green behaviour at home, their travel motives, their willingness to pay for green initiatives and their overall travel behaviour. Results also show that a green wine destination does indeed attract visitors who consider themselves to be green, and that the green brand is an attraction or unique motivation for consumers.

## Hoe groen is besoekers by 'n groen wynbestemming in Suid-Afrika?

Beleid wat fokus op die bewaring van die omgewing word deurgaans ontwikkel om die negatiewe invloed van aardverwarming op, onder meer, die wynbedryf te bekamp. Die artikel segmenteer en analiseer die 'groen'gedrag van wynbesoekers by een van Suid-Afrika se eerste wynplase wat omgewingsvriendelike inisiatiewe implementeer, naamlik Spier. 'n Besoekersopname is in 2011 onderneem waartydens 161 vraelyste geadministreer is. Respondente is volgens hul 'groen' gedrag gegroepeer. Twee is geïdentifiseer naamlik 'donker groen'- en 'lig groen'-verbruikers. Die twee segmente verskil statisties betekenisvol in terme van hul groengedrag by die huis, hul reismotivering, hul bereidwilligheid om meer te betaal vir groen inisiatiewe, asook hul algehele reisgedrag. Resultate bevestig dat 'n groen wynbestemming wel besoekers trek wat hulself as meer groen ag en dat die groen handelsmerk 'n unieke motivering vir besoekers is.

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The last decade has witnessed a dramatic increase in environmental consciousness worldwide and, as a result, policies that focus on protecting the environment are continuously being developed. In recent years, green consumerism has led to an upsurge in corporate environmentalism, with consumers demanding protection of the environment and sustainable development (Jain & Kaur 2006: 108; Smith & Perks 2010: 3). This green movement also applies to tourism, since one of the most serious global environmental issues facing industry is that of climate change (Stefik 2006: 1). According to forecasts, tourism's contribution to greenhouse gas emissions will rise from its current 3% to 7% by 2050 (Walker & Walker 2011: 226; Buhalis & Costa 2006: 39). One consequence of global warming is the potential negative effects on tourism and the environments in which it occurs (Page & Connell 2009). The most widely discussed effect is rising sea levels and the impact on small islands, combined with extreme climatic events such as decreases in rainfall in some areas and increases in others (Mason et al. 1999: 255; Walker & Walker 2011: 227; Hall & Higham 2005: 3). Rising temperatures, extreme weather conditions (flooding, sandstorms, droughts, and summer fires), erosion and water shortages are other concerns that are evident in our daily lives.<sup>1</sup>

This situation has prompted the expansion of green tourism, which implies tourism either based on the environment or with environmental values in mind – the term 'green' is typically used interchangeably with 'pro-environmental'.<sup>2</sup> Green practices can include the three Rs of recycling (reuse, reduce and recycle) and practices such as waste-water management, energy-saving measures and purchasing organic products; these practices can be applied to all areas of the tourism industry (Kirk 1995: 4). Tourism operators are beginning to consider the impact they have on the environment, and "[t]his has motivated destination managers towards attracting consumers who are intrinsically interested in protecting the environment and behave in ways that lead to a smaller ecological footprint" (Taylor et al. 2010: 14).

1 See Gosling et al. 2002; Gössling 2002; Gössling & Svensson 2006; Grossling et al. 2005; Walker & Walker 2011: 227.

2 See Barber et al. 2009: 60; McBoyle 1996: 255; Walker & Walker 2011: 227; Taylor 1992: 669; Shrum et al. 1995: 72.

In light of this situation, three questions are worth asking: do green destinations attract visitors who consider themselves to be 'green'; what is the profile of consumers who visit green destinations, and can a distinction be made between different 'green' markets?

In South Africa, wine farms are beginning to pay more attention to environmentally friendly farming and management practices, and more wine farms are marketing themselves as 'green' destinations (Kruger & Saayman 2011; Saayman & Krugell 2010). Located in the heart of the Cape Winelands near Stellenbosch in the Western Cape province, Spier Wine Estate (hereafter referred to as Spier) was one of the first wine farms to implement green initiatives. Spier's purpose is to find innovative ways for business to succeed in balance with the environment and communities. Spier supports a variety of sustainability and community initiatives and with pro-poor tourism support, it focused on increasing its procurement from local small, medium and micro-enterprises (SMMEs) and previously disadvantaged individual suppliers, within a wider context of putting its overall procurement on a more sustainable footing (Ashley & Haysom 2004). In recognition of its sustainability practices in the wine and leisure businesses, Spier was one of the first organisations to receive Fair Trade in Tourism South Africa (FTTSA) certification. FTTSA encourages and publicises fair and responsible business practice by South African establishments. Spier was also awarded the Wilderness Foundation's International Green Leaf Environmental Standard in the accommodation category. In addition, Spier Wines is an accredited member of the Wine Industry Ethical Trade Association (WETA), becoming the first wine business in South Africa to be certified in 2004. In 2010, Spier launched its first organically grown wine, a Sauvignon Blanc, and recently decided to convert its famed Merlot vineyard block to organic and biodynamic production. The decision to go organic flows from Spier's sustainable approach to business, environmental considerations, and the belief that using natural farming methods will improve the quality of its grapes.

To answer the above questions, the purpose of this research is to segment and analyse wine visitors at Spier in order to determine the consumers' profile, their green home behaviour, environmental attitudes, reasons for choosing a green destination, awareness of green management principles, and willingness to pay for green initiatives.

Moreover, this research will determine whether a green destination plays a role in attracting green consumers.

After a review of the relevant literature, the research method and study results are discussed, and the implications of this study considered, followed by conclusions and recommendations.

## 1. Literature review

In the past decade, South Africa has made significant progress in environmental management, by implementing laws and strategies that focus on sustainable development and green issues (Engel 2008: 1). Previously, businesses in the country assumed that incorporating 'green' into their business strategy would cost money, but now realise that ignoring negative impacts on the environment will be costly in the future (Van der Zee 2008: 6). If businesses reduce their use of natural resources by turning to alternative sources, the result will be efficient and effective use of scarce natural resources, and at the same time keep the environment free from detrimental products (Dallas 2008: 9). The purpose of going green is to use products and methods that do not have a negative impact on the environment through pollution or depleting natural resources (Robinson 2008: 1). Despite this, most tourism businesses (wineries, in particular) still do not recognise the need to go green (Smith & Perks 2010: 3).

The wine industry in South Africa is geographically more concentrated than in most other wine-producing countries, with 95% of the country's 105.000 hectares of wine grape vineyards concentrated in the Western Cape province (Bruwer 2003: 424). The South African wine industry is a good example of wine and tourism products that are spatially fixed in a radius of between 100 and 200 kilometres from Cape Town City as the centre point in the Western Cape. It is "one of a few national industries that is genuinely concentrated outside metropolitan areas and hence plays a vital role in regional development, employment generation, corporate investment, business growth, and tourism" in the Western Cape (Bruwer 2003: 424).

Growing demand and consumption have led to a significant increase in the number of vineyard acres planted and the number of wineries (Barber et al. 2009: 63). However, these activities are not without environmental, economic and social issues (Taylor et al.

2010: 14). Wineries have increased their environmental footprint and need to limit their use of toxic pesticides, herbicides and fertilisers and to prevent creating a scarcity of water supplies (Barber et al. 2009: 63). The use of sulphur and synthetic fertilisers is widespread in wine grape growing, which can pose serious problems (Marshall et al. 2005: 93). In agricultural and semi-rural areas, where residents depend on wells for drinking water, nitrates can leach into groundwater. Large winery operations need to either treat waste water on-site or send effluent to municipal treatment plants. They should also “reduce the amount of contaminated waste water run-off, organic wastes and non-hazardous packaging materials”, as well as pay attention to habitat destruction and endangered species (Marshall et al. 2005: 93; Barber et al. 2009: 63).

How green initiatives and the green reputation of a destination such as Spier influence the behaviour of visitors has not yet been established. Previous research into tourism environmental concerns has been linked to the holiday leisure travel sector, with few researchers studying the environmental impacts of conventional tourism.<sup>3</sup> Studies on green consumers have focused mainly on profiling green consumers. To determine the type of individual most concerned with the environment, researchers of green marketing have attempted to profile and segment consumers by using a variety of demographic variables including income, education, occupation, number of children, gender, location of residence, age, education, and social class as well as personality measures, such as locus of control, alienation, conservationism, and dogmatism.<sup>4</sup> The influence of these variables on consumers’ green behaviour differs, and the main findings are summarised in Table 1.

3 See Becken 2002; Høyer & Naess 2001; Law 2004; Park & Boo 2010.

4 See Diamantopoulos et al. 2003; Samdahl & Robertson 1995; Guagnano & Markee 1995; Jones & Dunlap 1992; Mohai 1992; Schlegelmich et al. 1996; Balderjahn 1988; Henion & Wilson 1976; Kinnear et al. 1974; Barber et al. 2009; Dolnicar 2004.

Table 1: Variables influencing green consumer knowledge, behaviour and attitudes

Variable	Main findings	Author(s)
Gender	No significant relationship between gender and environmental knowledge.	Arbuthnot 1977; Diamantopoulos et al. 2003; Samdahl & Robertson 1989; Tognacci et al. 1972.
	Males are more environmentally conscious than females.	Chandler 1972; Grunert & Kristensen 1994; Lyons & Breakwell 1994; Meffert & Bruhn 1996.
	Females tend to be more environmentally concerned than males and are more willing to seek environmentally friendly products.	Diamantopoulos et al. 2003; Shrum et al. 1995; Straughan & Roberts 1999; Jain & Kaur 2006.
	Both males and females have lower levels of environmental awareness and knowledge.	Jain & Kaur 2006.
Age	Older consumers tend to be less environmentally conscious and green.  With regard to environmental attitude and behaviour, a negative relationship with age also exists.	Diamantopoulos et al. 2003; Grunert & Kristensen 1994; Anderson et al. 1974; Scott & Willis 1994; Meffert & Bruhn 1996; Zimmer et al. 1994.
	Younger consumers are more inclined to actively search for environmentally friendly products, gather environment-related information and influence others to behave in an environmentally friendly manner.	Jain & Kaur 2006; Straughan & Roberts 1999.
	Older consumers tend to undertake higher levels of recycling activities.	Diamantopoulos et al. 2003.
Level of education	A positive relationship between higher level of education and environmental consciousness, environmental attitudes and environmental behaviour.	Arbuthnot & Lingg 1975; Arcury et al. 1987; Diamantopoulos et al. 2003; Chandler 1972; Grunert 1991; Mahoney & Ward 1973; Roberts 1996; Scott & Willis 1994; Widgren 1998; Jain & Kaur 2006.
	A negative relationship exists between level of education and environmental consciousness, environmental attitudes and environmental behaviour.	Samdahl & Robertson 1989; Arbuthnot & Lingg 1975; Meffert & Bruhn 1996; Baldassare & Katz 1992; Diamantopoulos et al. 2003; Pickett et al. 1993; Schahn & Holzer 1990.

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Variable	Main findings	Author(s)
Income	Positive relationship exists between higher and medium income and environmental consciousness, environmental attitudes and environmental behaviour, since higher income consumers can bear additional costs associated with supporting green causes and favouring green products.	Straughan & Roberts 1999; Kinnear et al. 1974; Simon 1992; Tai & Tam 1996; Zimmer et al. 1994; Arbuthnot 1977; Pickett et al. 1993; Jain & Kaur 2006.
	A negative relationship between income and environmental behaviours.	Roberts 1996.
Occupation	No significant relationship between occupation and environmental knowledge.	Buttall & Flinn 1987.
	A significant relationship between occupation and environmental attitudes and behaviour.	Anderson & Cunningham 1972; Balderjahn 1988; Mitchell 1983; Anderson et al. 1974.
	No significant relationship between occupation and environmental attitudes and behaviour.	Kassarjian 1971; Kinnear et al. 1974; Samdahl & Robertson 1989; Van Lier & Dunlap 1981; Webster 1975; Antil 1984; Roberts 1996; Straughan & Roberts 1999; Jain & Kaur 2006.
Internal locus of control	An internal locus of control is positively correlated with intent to purchase ecologically packaged products and post-purchase behaviours such as recycling.	Schwepker & Cornwell 1991; Schrum et al. 1995; Ellen et al. 1991.
Marital status	Married consumers are more concerned about environmental issues and undertake higher levels of green behaviour than singles.	Neuman 1986.
	No clear evidence that married consumers are more environmentally conscious than single individuals in terms of their knowledge, attitudes or behaviours.	Diamantopoulos et al. 2003.
Number of children in household	The more children in the household, the greater the environmental knowledge, the stronger the concern about environmental quality and the higher the level of participation in green activities.	Grunert 1991.
	No significant relationship between the number of children in the household and environmentally friendly knowledge, behaviour and attitudes.	Diamantopoulos et al. 2003.

As is evident from Table 1, socio-demographic variables are mainly used to determine the characteristics that differentiate green consumers from other consumers. However, none of the variables in Table 1 are destination-specific, which indicates a lack of research into this aspect. Traditionally, consumers express their environmental consciousness through not only the products they purchase, but also their behaviour at home (Schlegelmilch et al. 1996: 37). Green consumers are also sufficiently concerned to consider paying more for environment-friendly products (Shrum et al. 1995: 71; Chan & Ho 2006: 303). As Kruger & Saayman (2011) and Saayman & Krugell (2010) found in their studies of the Wacky Wine Festival in Robertson, South Africa, visitors who purchase wine after the festival are willing to pay more if the festival implements environmentally friendly practices. Therefore, a reasonable assumption is that consumers who implement green initiatives at home will choose greener destinations and be willing to pay more to visit these destinations. This information is especially important for destinations that are considering going green or already branding themselves as green. Taylor et al. (2009: 24) point out that knowing the profile of green consumers and their behaviour can lead to cost-effective and sustainable marketing, tailor-made 'green' products, 'green' packaging and labelling solutions, and 'green' positioning.

Like the existence of the green consumer, the existence of the green tourist is also questioned (Swarbrooke & Horner 2007). Despite this doubt, some tourists do indeed have stronger views than others on environmental issues and are also more active in addressing these concerns with regard to how they live their lives (Bergin-Seers & Mair 2009: 1). However, as Swarbrooke & Horner (2007) emphasise, green consumers/tourists should not be regarded as a homogeneous group. Green consumers have been classified in terms of shades of green – from 'very dark green' to 'not green at all' (Bergin-Seers & Mair 2009; Swarbrooke & Horner 2007; McDonald et al. 2006). 'Very dark green' consumers may convert their beliefs into action by buying environmentally friendly products and visiting 'green' destinations. On the other hand, the 'not green at all' tourist is likely to show only a passing interest by, for example, reading about the effects of tourism on the environment. McDonald et al. (2006) also distinguished three



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groups of green consumers, namely translators, exceptors and selectors (see Table 2).

Table 2: Typologies of green tourists/consumers

Translators	Exceptors	Selectors
<p>For this group, awareness usually translates into action:</p> <ul style="list-style-type: none"> <li>• They feel very guilty about not doing it previously.</li> <li>• They gradually include more and more activities.</li> <li>• Their concern is often at the level of products rather than companies or industries.</li> <li>• They are prepared to make some sacrifices and are open to change if they can perceive the impact of their actions.</li> <li>• Their information-seeking is mainly passive.</li> <li>• Word of mouth and opinion leaders are important to this group.</li> <li>• They are uncritical of information sources.</li> </ul>	<p>Sustainability is a priority. This group have a complex understanding of a wide range of interdependent sustainability ideas:</p> <ul style="list-style-type: none"> <li>• They seek change.</li> <li>• Their information-seeking is active, company level and very critical.</li> <li>• They are comfortable with non-mainstream outlets, products and information sources.</li> </ul> <p>But: There is one exception to their green lifestyle. This is usually a conscious exception and a 'small' exception</p> <ul style="list-style-type: none"> <li>• During the purchase process for this item, they will completely ignore their usual green and/or ethical criteria.</li> <li>• They will have a specific justification for this purchase which allows them to be happy with their decision.</li> </ul>	<p>This group are green or ethical in one aspect of sustainability only – Greenpeace or recycling or green energy or organic:</p> <ul style="list-style-type: none"> <li>• Probably the most common group.</li> <li>• This would explain why green marketing fails and green marketing research can give conflicting results.</li> <li>• Could be a starting point for the other groups.</li> <li>• Information-seeking is selective, <i>ad hoc</i> and can be active, depending on the issue.</li> </ul>

Source: adapted from McDonald et al. (2006); Swarbrooke & Horner (2007); Bergin-Seers & Mair (2009)

To date, limited research has been done into green consumers in South Africa or any other developing country, while no research has explored green wine consumers or focused on how green destinations can influence the profile and behaviour of visitors. Therefore, this research will greatly contribute to the knowledge base about green consumers in South Africa, including their profile and green behaviour, as well as their green awareness and willingness to pay more

for green principles. In addition, this research will show if, and to what extent, a green destination influences consumer behaviour. In so doing, the research can provide valuable information for wine farms in the country that are seeking to 'green' their product development and marketing strategies, which is vital for the sustainability of the wine industry amid the global crisis of climate change.

## 2. Methodology

A structured questionnaire was used to collect the data.

### 2.1 The questionnaire

The survey questionnaire was based on the green guidelines provided by the Fair Trade and Tourism website for tourism businesses and consumers who want to become green, as well as on the works of Diamantopoulos et al. (2003), Barber et al. (2009), Kruger & Saayman (2011) and Dolnicar (2004). The questionnaire was divided into two sections. Section A captured demographic details (gender, home language, age, occupation, home province, country of origin, when the decision was made to visit Spier, sources of information, and wine preferences) and spending behaviour (group size, number of persons paid for, length of stay, and expenditure). Section B captured 19 motivational items, 25 green home behaviour items and 17 green wine farm choice items on a five-point Likert scale, where 1 = not important at all; 2 = less important; 3 = important; 4 = very important, and 5 = extremely important. This section also asked for information specific to visitors' behaviour during their visit (activities/facilities visited, repeat visits, and awareness of Spier's green initiatives), as well as the visitors' willingness to pay extra for green initiatives (green accommodation, organic food, and organic wine).

### 2.2 Sampling method and survey

This exploratory research consisted of a destination-based survey, which was conducted among visitors at Spier from 19 to 26 February 2011. The 161 visitors who formed part of the survey were selected through simple random sampling. Fieldworkers approached visitors who were picnicking and explained the aim of the survey as well as the

questionnaire. Fieldworkers then collected the questionnaires after the respondents had completed them.

### 2.3 Statistical analysis

The data was captured using Microsoft® Excel® and analysed using SPSS (SPSS Inc 2007).<sup>5</sup> The analysis was done in two stages. First, using an Oblimin rotation with Kaiser normalisation, three principal axis factor analyses were performed on the 19 motivation items, the 25 green home behaviour items and the 17 green wine farm choice items, in order to explain the variance-covariance structure of a set of variables through a few linear combinations of these variables. The Kaiser-Meyer-Olkin measure of sampling adequacy was also used to determine whether the covariance matrix was suitable for each of the factor analyses. Kaiser's criteria for the extraction of all factors with eigenvalues larger than one were used, because they were considered to explain a significant amount of variation in the data. In addition, all items with a factor loading above 0.3 were considered a contributing factor, and all with loadings lower than 0.3 as not correlating significantly with this factor (Steyn 2000). In addition, any item that cross-loaded on two factors with factor loadings greater than 0.3 was categorised in the factor where interpretability was best. Reliability coefficients (Cronbach's *alpha*) were computed for each factor to estimate the internal consistency of each factor. All factors with a reliability coefficient above 0.6 were considered acceptable in this study. As another measure of reliability, the average inter-item correlations, which according to Clark & Watson (1995) lie between 0.15 and 0.55, were also computed.

Secondly, visitors to Spier were segmented by performing a cluster analysis on the green home behaviour scores, using Ward's method with Euclidean distances. A cluster analysis is a multivariate interdependence technique whose primary objective is to classify objects into relatively homogeneous groups based on the set variables considered (Hair et al. 2000: 594).

Lastly, multivariate statistics were used to examine any statistically significant differences between these green behaviour clusters.

5 SPSS Inc 2007 SPSS® 16.0 for Windows, Release 16.0.0, Copyright© by SPSS Inc, Chicago, ILL. <www.spss.com>

Independent *t*-tests, two-way frequency tables and *chi*-square tests were used to profile consumers, to investigate any significant differences between the clusters, and to determine consumers' green behaviour in their selection of wine farms as well as their willingness to pay extra for green initiatives.

### 3. Results

#### 3.1 Results from the factor analysis: travel motives and green wine farm choice behaviour

Four travel motivational and one green wine farm choice behaviour factors were identified and labelled according to similar characteristics (see Tables 3 and 4). The four travel motives accounted for 61.4% and the one green wine farm choice for 78.5% of the total variance. All factors had relatively high reliability coefficients, ranging from 0.68 (the lowest) to 0.88 (the highest) for the travel motives and 0.98 for the green wine farm choice behaviour factor. All five factors had an average inter-item correlation coefficient (between 0.37 and 0.64 for the travel motives and 0.94 for the wine farm choice factor), which implied internal consistency. In addition, the relatively high factor loadings (all items loaded on a factor with loading greater than 0.3) indicate a reasonably high correlation between the delineated factors and their individual items. The Kaiser-Meyer-Olkin measure of sampling adequacy of 0.87 for the motivational and 0.94 for the wine farm choice factors also indicates that patterns of correlation are relatively compact and yield distinct and reliable factors (Field 2005: 640). Barlett's test of sphericity also produced statistical significance in both factor analyses, supporting the factorability of the correlation matrix (Pallant 2007: 197).

Table 3: Factor analysis results of travel motives

Motivation factors and items	Factor loading	Mean value	Reliability coefficient	Average inter-item correlation
Factor 1: wine experience		2.33	0.85	0.49
To increase my knowledge of wine	0.97			
I visit Spier to buy wine	0.65			

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Motivation factors and items	Factor loading	Mean value	Reliability coefficient	Average inter-item correlation
An opportunity to taste wine	0.56			
It is an annual commitment	0.54			
Spier combines wine and entertainment in a useful way	0.44			
To meet new people	0.44			
Factor 2: escape and socialisation		4.19	0.68	0.43
To relax	0.84			
To get away from my routine	0.75			
To spend time with family and friends	0.38			
Factor 3: brand value		3.38	0.76	0.37
Spier is a unique experience.	0.61			
Spier has a reputation of being environmentally friendly.	0.58			
To explore the environment.	0.50			
Spier is value for money.	0.46			
Spier is a well-known brand.	0.37			
It is for the benefit of my children.	0.33			
Factor 4: wine farm attributes		3.23	0.88	0.64
Spier offers a variety of wines.	0.85			
Spier offers quality products.	0.63			
It is a sociable wine farm.	5.50			
Spier is different to other wine farms.	0.48			
Total variance explained	61.41			

Factor scores were calculated as the average of all items contributing to a specific motivational factor in order to interpret them on the original five-point Likert scale of measurement. As Table 3 shows, the following motives were identified: wine experience, escape and socialisation, brand value, and wine farm attributes. Escape and socialisation (Factor 2) obtained the highest mean value (4.19), was considered the most important motive for visiting Spier, and had a reliability coefficient of 0.68 and an average inter-item correlation of 0.43. Brand value (Factor 3) had the second highest mean value (3.38),

followed by wine farm attributes (Factor 4) (3.23). Wine experience (Factor 1) had the lowest mean value (2.33) and was rated as the least important motive.

The motives of wine visitors are an important aspect in the overall understanding of their needs and expectations (Hall et al. 2002; Bruwer 2002; Charters & Ali-Knight 2002). It has been found that primary motivators for visitors who attend a wine farm or region are factors relating to “the attributes of the wine region” and “tasting and buying wine” (Hall et al. 2002: 127). While sampling and buying wine are primary motives, secondary or peripheral motives include socialising, learning about wine, and entertainment (Bruwer 2002). A study of visitors to the Wacky Wine Festival in 2009 identified four motivating factors (in order of importance: inimitable festival attributes, socialisation and escape, wine edification, and intrinsic attributes) (Kruger et al. 2011). Verifying these results in 2010, visitors’ motivating factors for attending the festival were found to be escape, inimitable festival attributes, and wine edification (Kruger & Saayman 2011).

For the first time, this study determines the travel motives of visitors to a green wine farm, which compare favourably with those identified by other authors.<sup>6</sup>

As shown in Table 4, green wine farm choice behaviour obtained a mean value of 3.73, indicating that visitors consider the application of green management principles important, especially when choosing to visit a wine farm.

6 See Hall et al. 2002; Bruwer 2002; Kruger et al. 2011; Kruger & Saayman 2011.

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Table 4: Factor analysis results of green wine farm choice behaviour

Green wine farm choice behaviour factors and items	Factor loading	Mean value	Reliability coefficient	Average inter-item correlation
Factor 1: Green wine farm choice	0.91	3.73	0.98	0.79
If available, I would choose a wine farm that makes use of energy-efficient appliances.	0.91			
If available, I would choose a wine farm that has a low carbon emission footprint.	0.91			
If available, I would choose a wine farm that recycles water and implements it in irrigation.	0.90			
If available, I would choose a wine farm where they support an environmental NGO, for example WWF (World Wildlife Foundation).	0.89			
If available, I would choose a wine farm that organises or sponsors environmental protection activities.	0.89			
If available, I would choose wine farms that encourage their staff to be environmentally friendly.	0.89			
If available, I would choose wine farms that implement environmentally friendly farming practices.	0.89			
If available, I would choose a wine farm where guests are encouraged to be eco-friendly.	0.88			
If available I would choose wine farms that use recycled glass as crockery in restaurants and at wine-tasting events.	0.87			
If available, I would consider a green wine farm that would enable me to protect the environment when travelling.	0.87			
If available, I would choose wine farms that sell organic wine which is less harmful to the environment.	0.86			

Green wine farm choice behaviour factors and items	Factor loading	Mean value	Reliability coefficient	Average inter-item correlation
If available, I would choose a wine farm that uses ecological arguments in its marketing campaign.	0.86			
If available, I would choose a wine farm that uses recycled paper products.	0.86			
If available, I would choose a wine farm that uses energy-saving light bulbs.	0.86			
If available, I would consider a green wine farm in terms of convenience (for example, easily accessible, well known).	0.84			
If available, I would choose a wine farm with recycling programmes.				
If available, I would consider a wine farm that offers organic, fresh and healthy foods to their guests.				
Total variance explained	78.45%			

### 3.2 Results from the cluster analysis: green consumers at Spier

Visitors to Spier were clustered based on their green home behaviour. The six factors identified were labelled according to similar characteristics (see Table 5). These six factors accounted for 61.9% of the total variance and all had relatively high reliability coefficients, ranging from 0.63 (lowest) to 0.80 (highest). All factors had average inter-item correlation coefficients of between 0.21 and 0.53, which also implied internal consistency. In addition, the relatively high factor loadings (all items loaded on a factor with loading greater than 0.3) indicate a reasonably high correlation between the delineated factors and their individual items. The Kaiser-Meyer-Olkin measure of sampling adequacy of 0.81 also indicates that patterns of correlation are relatively compact and yield distinct and reliable factors (Field 2005: 640). Bartlett's test of sphericity also produced statistical significance ( $p < 0.001$ ), supporting the factorability of the correlation matrix (Pallant 2007: 197).



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Table 5: Factor analysis results of green home behaviour

Green home behaviour factors and items	Factor loading	Mean value	Reliability coefficient	Average inter-item correlation
Factor 1: Green product use		3.43	0.80	0.36
I use environmentally friendly washing powders, dishwashing soaps, and so on.	0.80			
I use ozone-friendly aerosols, for example hair spray, deodorants, air fresheners, and so on.	0.79			
At home, I prefer to use eco-friendly cleaning products.	0.53			
At home, I encourage my kids/wife/husband/partner to be more eco-friendly and save energy.	0.37			
When at home, I tend to buy bulk products to reduce packaging.	0.33			
I prefer low carbon emission vehicles or green vehicles.	0.30			
Factor 2: Energy saving		4.09	0.77	0.42
When at home, I switch off the lights in rooms that are unoccupied.	0.64			
To reduce water use, I prefer to take showers.	0.64			
To save energy, I lower the temperature of my hot-water geyser.	0.64			
I wash my laundry in cold instead of hot water.	0.53			
At home, I switch off and unplug unused electronic equipment and appliances.	0.48			
Factor 3: Practical green solutions		2.83	0.64	0.21
At home, I collect rain water that forms part of recycling.	0.65			

Green home behaviour factors and items	Factor loading	Mean value	Reliability coefficient	Average inter-item correlation
At home, I make use of a solar-panel geyser to reduce the use of electricity.	0.63			
At home, I make use of low-flow showerheads and toilets.	0.48			
I plant indigenous plants in my garden.	0.35			
I support conservation efforts, for example owning a Nedbank Green Affinity credit card.	0.27			
<b>Factor 4: Recycle</b>		3.50	0.71	0.38
At home, I recycle waste products such as cans, bottles and papers.	0.89			
At home, I use recycled paper products.	0.51			
At home, I recycle food waste products to create compost for gardening or other purposes.	0.41			
I have proper insulation and reflective roof coverings.	0.26			
<b>Factor 5: Green commitment</b>		3.50	0.63	0.39
I take bags from home when I go shopping.	0.61			
I switch off my geyser during the day, to save energy.	0.39			
I consider myself environmentally friendly.	0.26			
<b>Factor 6: Light and energy sensitivity</b>		4.13	0.69	0.53
At home, I use energy-saving light bulbs.	0.73			
At home, I maximise the use of natural light and open windows to reduce the use of energy.	0.54			
Total variance explained	61.9%			

Factor scores were calculated as the average of all items contributing to a specific factor in order to interpret them on the original five-point Likert scale of measurement. As Table 5 shows, the following green home behaviours were identified: green product use, energy saving, practical green solutions, recycle, green commitment, and light and energy sensitivity. Light and energy sensitivity (Factor 6) obtained the highest mean value (4.13), was considered the green home principle applied the most, and had a reliability coefficient of 0.69 and an average inter-item correlation of 0.53. Energy saving (Factor 2) had the second highest mean value (4.09), followed by recycling (Factor 4), green commitment (Factor 5) (3.50 each), and green product use (3.43). Practical green solutions (Factor 3) had the lowest mean value (2.83) and was rated as the green home principle that respondents applied the least. An explanation for this result is that implementing practical green solutions costs money. The high mean values of the other factors suggest that visitors at Spier opt for less expensive green initiatives at home.

To enhance the understanding of the factor structure, an exploratory cluster analysis based on all cases in the data set was performed on the identified green home behaviour factors. A hierarchical cluster analysis was used to determine the clusters' structures based on the green home behaviour factors, using Ward's method and Euclidean distances. A two- and four-cluster solution was examined, and the two-cluster solution was selected as the most easily discriminatory. The results of multivariate statistics were used to identify the two clusters and to indicate that significant differences existed between them ( $p < 0.05$ ).

### 3.3 Identification of segmented clusters

Independent *t*-tests on the two factors indicate statistically significant differences (Wilk's Lambda =  $p$ ,  $p < 0.001$ ), and that all six factors contributed to differences between the two green consumer clusters ( $p < 0.05$ ). Table 6 shows differences in means between the two clusters and reveals the importance of each of the green home behaviour factors for the members of each cluster. Cluster one contained 65 respondents and obtained the highest mean values across all six green home behaviour factors. Cluster two was the largest cluster

(containing 75 respondents) and obtained lower mean values for all six green home behaviour factors. Based on the typologies of green consumers/tourists by McDonald et al. (2006), Swarbrooke & Horner (2007) and Bergin-Seers & Mair (2009) as shown in Table 6, Cluster one is labelled 'dark green' or 'exceptors' and Cluster two 'light green' or 'selectors'.

Table 6: *T*-test results for two green consumer clusters at Spier

Variables	Dark green (exceptors)			Light green (selectors)			t-value	p
	Mean	Standard deviation	N	Mean	Standard deviation	N		
Green home behaviour								
Green product use	4.04	0.64	65	2.88	0.86	75	8.96	0.001*
Energy saving	4.42	0.50	65	3.73	0.94	75	5.33	0.001*
Practical green solutions	3.44	0.86	65	2.17	0.73	75	9.23	0.001*
Recycle	4.10	0.67	65	2.92	0.96	75	8.29	0.001*
Green commitment	4.17	0.73	65	2.89	0.90	75	9.17	0.001*
Light and energy sensitivity	4.61	0.55	65	3.69	1.02	75	6.50	0.001*

\* indicates significance at a 5% level

Independent *t*-tests were also done to determine whether there are significant differences between the two clusters.

Table 7: *T*-test results

Variables	Dark green (exceptors)			Light green (selectors)			t-value	p
	Mean	Standard deviation	N	Mean	Standard deviation	N		
Socio-demographics								
Age	38.33	11.16	63	37.25	13.08	72	0.51	0.608
Group size	3.88	2.30	65	4.07	2.57	75	0.458	0.648
Number of people paid for	3.24	2.09	62	3.22	2.25	72	0.052	0.958
Nights in Stellenbosch	1.93	6.43	44	1.17	2.58	54	0.800	0.426

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Variables	Dark green (exceptors)			Light green (selectors)			t-value	p
	Mean	Standard deviation	N	Mean	Standard deviation	N		
Number of times at Spier	4.77	5.62	56	5.81	8.34	72	0.800	0.425
Spending per person	R1623.58	7795.48	63	R1169.28	3382.06	70	0.64	0.524
Green hotel choice behaviour	4.14	0.84	58	3.37	1.02	68	4.57	0.001*
Travel motives								
Wine experience	2.65	1.19	58	2.10	0.85	70	3.07	0.003*
Escape and socialisation	4.28	0.81	60	4.11	0.72	73	1.29	0.199
Brand value	3.69	0.92	61	3.16	0.86	72	3.41	0.001*
Wine farm attributes	3.45	1.04	55	3.07	1.11	71	1.95	0.054**
Willingness to pay extra								
Pay extra for green accommodation per night	R108.15	247.19	65	R78.68	235.41	75	0.722	0.471
Pay extra for organic food per meal	R61.08	251.39	65	R18.47	63.02	75	1.418	0.158
Pay extra for organic wine per bottle	R13.92	28.65	65	R6.80	20.35	75	1.712	0.089**

\* indicates significance at a 5% level and \*\* indicates significance at a 10% level

As shown in Table 7, the ‘dark green’ and ‘light green’ consumers possess significant differences based on the travel motives ‘wine experience’ ( $p = 0.003$ ) and ‘brand value’ ( $p = 0.001$ ) and green hotel choice behaviour ( $p = 0.001$ ). The travel motive ‘wine farm attributes’ ( $p = 0.054$ ) and willingness to pay extra for organic wine per bottle ( $p = 0.089$ ) also indicated significant differences at a 10% level of significance. ‘Dark green’ consumers regard the travel motive ‘wine’ as important whereas ‘light green’ consumers regard this motive as less important. The travel motives ‘brand value’ and ‘wine farm attributes’

are considered very important by 'dark green', but only important by 'light green' consumers. It is not surprising that 'dark green' consumers also regard green and environmentally friendly practices to be very important when choosing a wine farm, whereas they are only important for 'light green' consumers. In addition, 'dark green' consumers are willing to pay significantly more for organic wine per bottle (R13.92 compared to R6.80) and spend more than 'light green' consumers during their visit to Spier (R1623.58 compared to R1169.28).

No statistically significant differences were found based on other socio-demographic and behavioural characteristics. Both 'dark green' and 'light green' consumers are in their late thirties (average age of 38 and 37 years, respectively), travel in groups of four persons, are financially responsible for three persons, stay between one and two nights in Stellenbosch, and have previously visited Spier an average of five or six times.

### 3.4 Cross-tabulations and *chi*-square test results

As Table 8 shows, 'dark green' and 'light green' consumers were statistically significantly different in their awareness of the green management principles applied by Spier (recycling,  $p = 0.006$ ; water-saving methods,  $p = 0.038$ ; mainly indigenous plants in gardens,  $p = 0.001$ ) and their willingness to pay extra (green accommodation,  $p = 0.001$ ). Other aspects that indicated significant differences at a 10% level of significance were the green principles applied by Spier (conservation projects,  $p = 0.059$ , and environmentally friendly farming,  $p = 0.075$ ), willingness to pay for organic wines ( $p = 0.086$ ), province of origin ( $p = 0.086$ ) as well as word-of-mouth as information source ( $p = 0.090$ ).

- Awareness of green management principles at Spier. It is not surprising that, compared to 'light green' consumers, 'dark green' consumers are more aware of Spier's green management principles, which include recycling, water-saving methods, conservation projects, environmentally friendly farming, and gardens containing mainly indigenous plants.
- Willingness to pay extra. Significantly more 'dark green' consumers are willing to pay extra for green accommodation and organic wines.

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- Province of origin. Both ‘dark green’ and ‘light green’ consumers originate from the Western Cape province; however, a significant percentage of ‘dark green’ consumers are foreign visitors.
- Sources of information. More ‘light green’ consumers had heard about Spier through word-of-mouth recommendations compared to ‘dark green’ consumers who gathered their information from magazines.

No statistically significant differences were found for the other socio-demographic and behavioural characteristics. Both ‘dark green’ and ‘light green’ consumers were female, English-speaking, in a professional line of occupation, and decided spontaneously to visit Spier. Their preferred wines are Sauvignon Blanc, Cabernet Sauvignon, Merlot and Rosé. Both consumer segments are willing to pay extra for organic food in restaurants and will visit Spier again in the future.

Table 8: *Chi*-square test results of visitor characteristics

Characteristics	Green consumers		<i>Chi</i> -square value	Df	Sig Level	<i>Phi</i> -value
	Dark green (exceptors)	Light green (selectors)				
Gender			0.440	1	0.507	0.056
Male	39%	44%				
Female	61%	56%				
Home Language			0.997	2	0.607	0.084
Afrikaans	30%	29%				
English	62%	67%				
Other	8%	4%				
Occupation			10.305	7	0.172	0.272
Professional	41%	49%				
Self-employed	31%	20%				
Technical	0%	5%				
Sales	13%	5%				
Civil service	2%	1%				
Housewife	6%	4%				
Pensioner	3%	3%				
Student	5%	12%				

Characteristics	Green consumers		<i>Chi-square</i> value	Df	Sig Level	<i>P</i> hi-value
	Dark green (exceptors)	Light green (selectors)				
Province			11.064	6	0.086**	0.281
Western Cape	51%	65%				
Gauteng	5%	8%				
Eastern Cape	2%	5%				
Northern Cape	3%	0%				
KwaZulu-Natal	6%	1%				
Free State	2%	0%				
Outside RSA borders	32%	20%				
Stellenbosch resident	Yes=15%; No=85%	Yes=16%; No=84%	2.030	3	0.566	0.120
Decision to visit Spier			3.220	3	0.359	0.152
Spontaneous decision	79%	76%				
A month ago	6%	11%				
More than a month ago	12%	14%				
Other	3%	0%				
Preferred wines						
Riesling	Yes=6%; No=94%	Yes=4%; No=96%	0.340	1	0.560	0.049
Chenin Blanc	Yes=23%; No=77%	Yes=21%; No=79%	0.061	1	0.804	0.021
Chardonnay	Yes=29%; No=71%	Yes=20%; No=80%	1.614	1	0.204	0.107
Rosé	Yes=31%; No=69%	Yes=27%; No=73%	0.287	1	0.592	0.045
Shiraz	Yes=23%; No=77%	Yes=21%; No=79%	0.061	1	0.804	0.021
Pinotage	Yes=31%; No=69%	Yes=24%; No=76%	0.807	1	0.369	0.076
Sauvignon Blanc	Yes=46%; No=54%	Yes=39%; No=61%	0.801	1	0.371	0.076
Merlot	Yes=34%; No=66%	Yes=35%; No=65%	0.010	1	0.919	0.009
Cabernet Sauvignon	Yes=39%; No=61%	Yes=36%; No=64%	0.090	1	0.764	0.025
Port	Yes=15%; No=75%	Yes=16%; No=84%	0.010	1	0.921	0.008



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Characteristics	Green consumers		Chi-square value	Df	Sig Level	Phi-value
	Dark green (exceptors)	Light green (selectors)				
Main sources of information						
Television	Yes=3%; No=97%	Yes=1%; No=99%	0.505	1	0.477	0.060
Radio	Yes=1%; No=99%	Yes=0%; No=100%	0.062	1	0.281	0.091
Website	Yes=6%; No=94%	Yes=11%; No=89%	0.905	1	0.341	0.080
Magazines	Yes=12%; No=88%	Yes=7%; No=93%	1.315	1	0.251	0.097
Newspapers	Yes=2%; No=98%	Yes=3%; No=97%	0.211	1	0.646	0.039
Word-of-mouth	Yes=74%; No=26%	Yes=85%; No=15%	2.872	1	0.090**	0.143
Visit Spier again?	Yes=87%; No=13%	Yes=90%; No=10%	0.380	1	0.538	0.053
Awareness of green management principles at Spier	Yes=71%; No=29%	Yes=48%; No=51%	7.440	1	0.006*	0.231
Recycling	Yes=49%; No=51%	Yes=32%; No=68%	4.308	1	0.038*	0.175
Water-saving methods	Yes=37%; No=63%	Yes=27%; No=74%	1.700	1	0.192	0.110
Energy-saving methods	Yes=57%; No=43%	Yes=48%; No=52%	1.111	1	0.292	0.089
Community projects	Yes=68%; No=32%	Yes=52%; No=48%	3.552	1	0.059**	0.159
Conservation projects	Yes=31%; No=69%	Yes=20%; No=80%	2.154	1	0.142	0.124
Low carbon emission footprint	Yes=52%; No=48%	Yes=37%; No=63%	3.165	1	0.075**	0.150
Environmentally friendly farming	Yes=60%; No=40%	Yes=52%; No=48%	0.903	1	0.342	0.080
On-site recycling messages	Yes=39%; No=61%	Yes=31%; No=69%	0.939	1	0.333	0.082
Fair Trade and Tourism South Africa certification	Yes=43%; No=57%	Yes=33%; No=67%	1.405	1	0.236	0.100

Characteristics	Green consumers		Chi-square value	Df	Sig Level	Phi-value
	Dark green (exceptors)	Light green (selectors)				
Accredited member of Wine Industry Ethical Trade Association	Yes=40%; No=60%	Yes=29%; No=70%	1.758	1	0.185	0.112
Wilderness Foundation's International Green Leaf Environmental Standard for accommodation	Yes=48%; No=52%	Yes=36%; No=64%	1.962	1	0.161	0.118
Mainly indigenous plants in gardens	Yes=78%; No=22%	Yes=44%; No=56%	14.146	1	0.001*	0.335
Willingness to pay extra						
Green accommodation	Yes=78%; No=22%	Yes=44%; No=56%	14.146	1	0.001*	0.335
Organic food in restaurants	Yes=79%; No=21%	Yes=67%; No=33%	2.208	1	0.137	0.131
Organic wines	Yes=67%; No=33%	Yes=52%; No=48%	2.939	1	0.086**	0.153

\* indicates significance at a 5% level and \*\* indicates significance at a 10% level.

#### 4. Findings and implications

This research attempted to provide answers to the questions proposed earlier in the article, namely do green destinations attract visitors who consider themselves to be green; what is the profile of consumers who visit green destinations, and can a distinction be made between different 'green' markets?

First, a green wine destination does indeed attract visitors who consider themselves to be green, as shown in their travel motives and green wine farm choice behaviour. In addition, different green markets can be distinguished, and two visitor or consumer segments were identified, namely 'dark green' (exceptor) and 'light green' (selector). These segments differ in their green home behaviour, travel motives, willingness to pay for green initiatives, and overall travel behaviour.

Secondly, supporting findings by Schlegelmilch et al. (1996), profiling green visitors to Spier based on socio-demographic variables, was not successful, as no significant differences between the two green clusters were found for these variables. However, the following demographic factors play a role in the green behaviour of consumers:

- No significant relationship exists between gender and green behaviour, which corresponds with the results obtained by other authors.<sup>7</sup> However, the majority of ‘dark green’ consumers were female, implying that females are more environmentally concerned than males and more willing to seek environmentally friendly products. This supports the findings by other authors.<sup>8</sup>
- Occupation also showed no significant influence on consumers’ green knowledge and behaviour at Spier. This supports the findings by other authors.<sup>9</sup>
- Older visitors tend to apply higher levels of recycling and, therefore, seem to be more conscientious about recycling. This supports the findings by Diamantopoulos et al. (2003), but contradicts research findings that older consumers tend to be less environmentally concerned than younger consumers.<sup>10</sup>

This result also contradicts the finding by Swarbrooke & Horner (2007) that green consumers/tourists should not be regarded as homogeneous.

Thirdly, the travel motives of visitors reveal a new and surprising motive. For the first time, ‘brand value’ was identified as a travel motive for wine tourists, indicating that the overall brand (including green principles) plays a role in the decision of visitors to attend a wine farm. Therefore, tourism establishments can successfully use

7 See Arbuthnot 1977; Diamantopoulos et al. 2003; Samdahl & Robertson 1989; Tognacci et al. 1972.

8 See Davidson & Freudenburg 1996; Diamantopoulos et al. 2003; Shrum et al. 1995; Straughan & Roberts 1999; Yam-Tang & Chan 1998; Jain & Kaur 2006; Levin 1990.

9 See Buttell & Flinn 1987; Kassarjian 1971; Kinnear et al. 1974; Samdahl & Robertson 1989; Van Liere & Dunlap 1981; Webster 1975; Antil 1984; Roberts 1996; Straughan & Roberts 1999; Jain & Kaur 2006.

10 See Grunert & Kristensen 1994; Anderson et al. 1974; Zimmer et al. 1994; Levin 1990; Scott & Willis 1994; Meffert & Bruhn 1996; Jain & Kaur 2006; Straughan & Roberts 1999.

the green brand when they are applying the principles as indicated in the literature review. In addition, this finding is supported by the green wine farm choice behaviour (see Table 4), with consumers rating environmental aspects as very important in their decision to visit an attraction or establishment. As green tourism is clearly becoming more important from the visitor's point of view, the tourism industry should consider awarding establishments who adopt innovative green approaches.

Fourthly, green visitors at Spier are willing to pay more for environment-friendly practices such as green accommodation and organic food and wine. This supports the findings by other authors.<sup>11</sup> Moreover, 'green' visitors are not only willing to pay more for a green product, but their general expenditure is also higher than other visitors, implying that this is a lucrative market to target. More research on this topic is required to determine the relationship between being green and expenditure patterns.

Lastly, the most common forms of green behaviour are saving energy, buying green products, and recycling. For the tourism industry and government agencies responsible for creating greater green awareness, the importance of this finding is that one way in which to grow green tourism and environmental awareness could be to educate managers and owners of tourism products and services as well as visitors. Therefore, it is recommended that product owners have an awareness campaign that addresses the aspects raised earlier. Green behaviour could also lead to savings, thus making financial sense.

## 5. Conclusion

The purpose of this research was to segment and analyse wine visitors at Spier, a well-known green establishment, in order to determine whether visitors to the attraction consider themselves 'green', and whether it is possible to distinguish different green markets. The results produced two distinct markets ('dark green' and 'light green'), which differ most in their environmental approach or lifestyle and have no significant socio-demographic differences. In addition, for the first

11 See Shrum et al. 1995; Kruger & Saayman 2011; Saayman & Krugell 2010; Chan & Ho 2006.

time in this type of research, the green brand of the establishment emerged as an important attraction or unique motive. It was also found that green visitors are not only willing to spend more money for green products, but in general they are higher spenders.

This research contributes to the discourse on green tourism and whether green tourists really exist. It is the first time that this type of research has been conducted in South Africa, especially at a wine establishment, and the first time that visitors' green behaviour at home was determined. This research was exploratory, and a great deal more research on this topic is required. One research limitation is the small sample size, as Spier does not generate huge numbers of visitors out of season.

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