Ecological Economics 150 (2018) 251–263

Contents lists available at ScienceDirect

Ecological Economics

journal homepage: www.elsevier.com/locate/ecolecon

Tourists' values and empathic attitude toward sustainable development in tourism

Charles A. Adongo[a,*], Francis Taale[b], Issahaku Adam[a]

[a] Department of Hospitality and Tourism Management, University of Cape Coast, Ghana
[b] Department of Economics, University of Cape Coast, Ghana

ARTICLE INFO

Keywords:
Anthropocentrism
Ecocentrism
Empathy
Economic growth
Sustainability

ABSTRACT

Tourism is one of the key sectors expected to accelerate the global efforts towards sustainable development, and with this, there is a renewed interest in understanding and influencing tourists' attitude and behaviour. Analysis of data from 819 international tourists using structural equation modeling indicates that values are significant antecedents to empathic attitude towards: nature conservation, fellow tourists, and local community development, as implicit facets of sustainable development in tourism (SDT). The results indicate significant variations in these issues across respondents' sex, religion, past visitation to nature reserve (s) and environmental club membership. The study concludes that values are central to ensuring empathic attitude towards SDT.

1. Introduction

Sustainable development and its derivative Sustainable Development in Tourism (SDT) are been embraced as a panacea to threats against nature. The objective of SDT is to create economic opportunities, socio-cultural benefits and ensure environmental conservation (Nickerson et al., 2016). SDT is expected to satisfy multiple stakeholders including tourists, businesses and host communities. For the tourists, SDT ought to provide satisfactory experience; to the entrepreneur, maximization of profit; to host communities, development; and to the environment, conservation (Moeller et al., 2011; Pulido-Fernández et al., 2015; Sher et al., 2015). Implementation of SDT, nevertheless, is fraught with various challenges including variable and unreliable support from stakeholders (Forbes et al., 2004; Das & Chatterjee, 2015).

Whereas some attempts to achieve SDT have come from tourism businesses as well as governmental and non-governmental organisations, support from tourists has not yet been optimised. Santana-Jimenez and Hernandez (2011) established that tourists are generally mindful of their own recreational experience with less to environmental conservation and contribution towards local community development. Additionally, tourists are found to introduce invasive species into alien ecosystems, trample on coral reefs, and collect and transport wild resources as souvenirs (Huang et al., 2008; Xu & Fox, 2014; Jägerbrand & Alatalo, 2015). A majority of tourists do not purchase products and service from local residents (Ferraro & Hanauer, 2011). Consequently, the demand side of tourism has been criticised as being sustainability unfriendly (Wu & Chen, 2016); thus the need to identify strategies to ensure that tourists behave sustainably.

Literature on SDT advances that acceptance of responsibility to be sustainable is dependent on one's state of empathy with, and attachment to the ideals of sustainability (Ericson et al., 2014; Czap et al., 2015; Font et al., 2016), which depends on values. Font et al. (2016: 65) consider sustainability empathy "as one's ability to establish an emotional connection with the surrounding people and environment" (p. 65). This puts into perspective Yilmaz et al. (2016) conceptualization of empathy as mental structures behind moral judgments concerning care for self and others.

Sustainability empathy is regarded as a moral imperative, hence linked to tourism in various ways such as tourism being a moral and ethical encounter, a social justice, and an experiential product (Ericson et al., 2014). As a result, tourism becomes a conduit for understanding tourists' relationships with other stakeholders in the industry and the responsibilities they owe each other, and how to harness these relationships for the benefit of sustainability. However, the concept of empathy has not been accorded the needed attention in tourism studies (Tucker, 2016), and especially in relation to research which links value orientation to sustainability empathy. While sustainability empathy has been widely acknowledged as a topic worth researching into because of its centrality to natural resource governance (Juvan & Dolnicar, 2016; López-Sánchez & Pulido-Fernández, 2016), existing discourse on this concept are largely theoretical. An exclusive empirical study on sustainability empathy is the one by Font et al. (2016). Whereas their findings provide useful insights on sustainability empathy, the study's

* Corresponding author.
E-mail addresses: charles.adongo@ucc.edu.gh (C.A. Adongo), ftaale@ucc.edu.gh (F. Taale), issahaku.adam@ucc.edu.gh (I. Adam).

https://doi.org/10.1016/j.ecolecon.2018.04.013
Received 30 April 2017; Received in revised form 30 September 2017; Accepted 9 April 2018

focus was on tourism enterprises and their motivations for acting sustainably. Moreover, employing Bandura's (1986) social cognitive theory, Font et al. (2016) acknowledged the casual complexity among personal factors, values and sustainability empathy, but could not account for such causal relationships in their analytical model.

Furthering insights of previous studies, this current study employs a co-variance structural equation modelling (SEM) approach to holistically analyse how tourists' value orientation affects their attitudes as to whether or not tourism should satisfy a number of needs such as the needs of conservation, needs of host communities, and needs of the broader economy. Recognising values as criteria "for guiding action and for developing and maintaining attitudes towards relevant objects and situations" (Rokeach, 1968, p. 160), this study chooses the value-based theory (VBT) by Stern and Dietz (1994) as the guiding framework to explain how tourists express empathic attitude towards humans and the environment based on their value orientation. VBT proposes that values, attitudes, environmental factors and personal factors are reciprocal in their causal relationship, even though not all are of the same strength or occur at the same time. Thus, values may not directly influence attitudes because of the moderating role of some factors. VBT further assumes that value orientations are conjoint; or that individuals may hold several orientations to some degree depending on the situation and context (Xu & Fox, 2014).

This study seeks to contribute more meaningfully to theory by clarifying the causal paths between values, economic growth, and empathic SDT. Empathic SDT is conceptualised as a form of tourism in which stakeholders have strong positive feelings and commitment towards the welfare of local residents, conservation of natural resources and enhancement of tourists' experiences. The present study differs from previous studies because rather than concerning itself with the explicit measurement of the three dimensions of SDT (i.e. economic, social and environmental), it explores tourists' views based on their values; whether tourism should improve the well-being of locals, provide quality visitor experience, and preserve the environment. To better segment visitors and provide precise information towards optimizing pro-sustainable behaviours, the study further characterizes tourists' on the aforementioned issues based on their sex, religion, past visitation to nature reserve (s) and environmental club membership. Such exploration has practical implications for anticipating differences in tourists' responses to sustainability messages based on their value profiles and addressing those variations. Evidence suggests that people's ability to recognize and discern observed experiences of others aids in a multitude of adaptive processes including conflict resolution, favourable relationship outcomes, accommodative behaviour and communication accuracy (Verhofstadt et al., 2008; Ma-Kellams & Lerner, 2016).

2. Literature review

2.1. Operationalisation of concepts

Following the realisation that tourism has positive and negative impacts (Coria & Calfucura, 2012), the efforts of tourist destinations to ensure growth in arrivals and receipts are parallel with the tenets of sustainable development. This is especially so given the documented evidence of growing inappropriate and anti-sustainable behaviour among tourists (Packer et al., 2014). Based on a 25-year bibliometric analysis of trends and patterns in sustainable tourism research, Ruhanen et al. (2015) conclude that since the publication of the Brundtland Report in 1987, SDT has become the concern for not only international and donor agencies, but tourism scholars and futurists. According to Ruhanen et al. (2015), SDT is that type of development where activities result in the efficient use and management of resources to achieve environmental, economic and socio-cultural needs of the present and future generations (World Conservation Union, 1996; Bramwell et al., 2017). This suggests a tourism development whose policy ideals and implementation grants environmentally responsible travel and visitation to natural areas, low visitor impact, and provides for beneficially active socio-economic involvement of local people.

According to World Tourism Organisation (2006), sustainable tourism is a form of tourism that is developed and maintained on a scale that is viable over an indefinite period of time and does not degrade the environment. This definition also includes the following guiding principles in the construction and measurement of sustainable tourism, namely: making prudent use of the earth's resources, alleviating poverty and reducing gender inequalities, enhancing the quality of life, preserving biodiversity and life support systems for all natural habitats, preserving indigenous knowledge and ways of life based on respect for different traditions, encouraging bottom up responsibility for participation and enhancing capabilities for local-level decision-making. The United Nations Environment Programme and World Tourism Organisation (2005) maintain that sustainable tourism is t*ourism that takes full account of the current and future economic, social and environmental impacts by addressing the needs of visitors, the industry, the environment and host communities*. Viewed in this way, sustainable tourism is considered distinct from conventional tourism in that it is expected to benefit local residents, respect local culture, conserve natural resources and maintain a high level of tourists' satisfaction (Ding & Pigram, 1995).

Notably, behaviour communication change research recommends that persuasive communication can be effective in fostering positive empathic feelings among tourists towards the ideals of sustainable development (Kim & Weiler, 2013). Empathy in its broadest sense refers to the response of an individual to the observed experiences of others. This involves the individual having a perspective that allows him or her to assume the position of the observed experience. Simply put, empathy is the power to feel as another person or thing feels. Hoffman (2008) views empathy as a pro-social motive and defines it as the ability of an individual to feel appropriately for the situation of another person, and to understand and share that person's emotional experience. Figuratively, empathy is understood as the capacity to put oneself in another person's shoes and thus to share the feelings or thoughts of that person (Kirman & Teschl, 2010; Czap et al., 2012).

Empathy is a multi-dimensional construct with two main dimensions namely cognitive empathy and emotional empathy (Hogan, 1969; Tam, 2013). Whereas cognitive empathy pertains to the mental consideration of someone else's situation without necessarily having had a previous experience, emotional empathy relates to the emotional arousal one experiences when he/she sees or identifies with someone else's situation (Davis, 1983). The empathizing object can either be animate or inanimate. Evidence suggests that cognitive and emotional empathy reflect distinct neurological responses. Cognitive empathy is regulated in the ventromedial area of the brain, whereas emotional empathy is regulated in the inferior frontal gyrus, insula, amygdala, and anterior cingulate cortex (Shamay-Tsoory et al., 2009). The two strands of empathy also differ by their mode of measurement. Perspective taking, the tendency to spontaneously adopt the emotions and view of others is the main measure of cognitive empathy. In contrast, measures of emotional empathy include social self-confidence, even-temperedness, and sensitivity. Alloway et al. (2016) divided emotional empathy into six dimensions notably empathic suffering, positive sharing, responsive crying, emotional attention, feeling for others, and emotional contagion. For the purpose of this study, empathy is seen as the tendency to experience feelings of warmth, compassion, and concern for others. Nevertheless, elicitation of empathic attitude and behaviours that are amenable to persuasion can be a difficult task if stimuli are not identified (Kim & Weiler, 2013). Therefore, this study leaves room for all other important stimuli that can affect empathy.

Values have been acknowledged as factors that can significantly determine tourists' commitment to sustainable attitudes. In other words, variations in people's attitudes can be explained from a value orientation perspective. Values, like other psychological concepts, are very difficult to define and measure, and thus have assumed different

conceptualisations. For instance, Pizam and Calantone (1987) define values as the pivotal beliefs that reflect an individual and his/her attitude. Similarly, Rokeach (1973) considers values as the enduring belief that a certain end-state of existence is more desirable than another. This viewpoint has been reinforced by Reser and Bentrupperbäumer (2005) who argue that values are individual and collective investments and judgments about what is important. Regarding values as a subset of culture, Hofstede (1980: 25) considers them as part of "a collective programming of the mind which distinguishes one group from another." It is clear that values are cognitive, lasting and represent the stimuli to attitudinal and behavioural choices in life. However, it is common to find the concept of value used interchangeably with attitude, though the two are technically different in that values function as organised guiding principles and determinants of attitude (Lee, 2013) whereas attitude is the disposition to respond favourably or unfavourably to an object.

Various value profiles have been proposed and employed in social science literature, but the one that has proven useful in explaining sustainability actions in natural reserves is the anthropocentrism and ecocentrism value profile (Packer et al., 2014). Both values influence individuals support for sustainable development; only that the two orientations differ in the rationale (Thompson & Barton, 1994). Anthropocentric value orientation, akin to egocentric and social altruistic value orientations, is based on the utilitarian maxim which emphasizes happiness as the ultimate goal of life. It maintains that individuals are entitled to extract and use natural resources to improve quality of life (de Groot & Steg, 2008). Anthropocentrics also believe that economic growth is essential for human development (Page & Dowling, 2002) and that economic growth can be achieved through the exploitation of natural capital. On the other hand, ecocentrism, also termed biospheric orientation, is regarded as a product of modern environmentalism. It emphasizes that humans are part and parcel of nature and that nature has value in its own right (MacDonald and Hara, 1994; Mackinnon & Fiala, 2007). While ecocentrics admit that humans have the right to have their simple material needs met, they are of the view that all things in nature have the right to exist (Xu & Fox, 2014). The conceptualisation of anthropocentrism and ecocentrism as opposite endpoints of a continuum and as independent traits anchoring separate constructs has been criticized. Wilson et al. (2000) indicate that an individual can hold at least two different views towards the same issue. This is termed value ambivalence – the simultaneous presence of favourable and unfavourable evaluations of the same attitude referent (Costarelli & Colloca, 2004). This suggests that anthropocentrism and ecocentrism are contextual and situation-specific and can both manifest in an individual depending on the circumstance. Despite this drawback, this value profile remains the most used antecedent in analysing attitudes in the context of sustainable development (Kortenkamp & Moore, 2001; Xu & Fox, 2014). Its popularity and strength lies in the fact it provides predictions that mirror possible attitudes that people falling within a certain value profile are likely or unlikely to exhibit.

2.2. Hypotheses development

Following the ensuing discussion, this study proposes and validates a structural model as shown in Fig. 1. The model draws from various disciplines including psychology, environmental economics, and tourism. The proposed model shows that tourists' value orientation affects their support for economic growth which in turn influences their attitudes towards fellow tourists, local community development, and nature conservation. Local community development is conceptualised from a micro-level perspective and is concerned with activities and interventions geared towards improving the welfare of residents of communities surrounding nature reserves while economic growth pertains to macroeconomic growth which involves the contribution of tourism to aggregate GDP. Nature conservation, on the other hand, is defined as careful management and sustainable use of natural resources to ensure the maintenance of biodiversity and protection of wildlife.

Empathic sustainable attitudes are deemed reliant on the values that people hold. Researchers have argued that people with anthropocentric value orientation are more likely to emphasize the economic and material benefits of nature than environmental benefits. Anthropocentrics consider nature as a resource to be exploited for economic progress and improvement of human welfare (Xu & Fox, 2014). In contrast, ecocentrics are pro-environmental because of the existential value of nature itself and not because of the materialistic and utilitarian implications of conservation (Kortenkamp & Moore, 2001). Ecocentrics view a strong connection between human beings and nature, arguing that nature has its own right to exist independent of the welfare of human dwellers. Ecocentrics' less emphasis on economic growth through tourism does not mean total lack of support for it only that it is not their primary motivation for conservation. They will support both economic growth and tourism with minimal negative impacts on nature. For example, Burns et al. (2011) maintain that ecocentrics support wildlife tourism management due to its benefits for both people and wildlife.

H1a. . Tourists with anthropocentric traits have significant positive empathic attitude towards economic growth through tourism.

H1b. . Tourists with ecocentric traits have positive insignificant empathic attitude towards economic growth through tourism.

Closely related to the issue of value orientation and support for economic growth is support for conservation. Evidence suggests that irrespective of one's value orientation, strong empathy can be shown towards nature. Whereas anthropocentrics may support conservation of nature for the material benefits, ecocentrics would support the same course but for nature-centered motives (Hernández et al., 2000). Moreover, people with anthropocentric inclinations are associated with apathetic environmental attitudes, thus favouring the exploitation of the natural environment to fulfill human needs and desires (Pfattheicher et al., 2015). Xu and Fox (2014) found a significant negative relationship between anthropocentricism and attitudes towards conservation, and a significant positive relationship between ecocentrism and attitudes towards conservation in national parks. On the contrary, Stern et al. (1993) report that the stronger the anthropocentric orientation, the stronger the attitude towards conservation. Some studies (Kollmuss and Agyeman, 2002; Vermeir & Verbeke, 2006) have also found no significant relationship between these value profiles and environmental attitudes. The major conclusion to be gleaned from this is that whether or not a person professes anthropocentric or ecocentric values, positive attitudes can still be expressed towards nature (Lynne, 1999). Following the above arguments, hypotheses H2a and H2b are formulated as:

H2a. . Tourists with anthropocentric traits have significant positive empathic attitude towards nature conservation.

H2b. . Tourists with ecocentric traits have significant positive empathic attitude towards nature conservation.

Worldwide, most deprived communities depend on tourism for economic wellbeing. However, when tourists are only interested in nature amenities, local communities do not get enough positive spillovers from tourism. It is recognised that without local community support, the objective of SDT cannot be guaranteed (Karki & Hubacek, 2015). Given this recognition, SDT must provide local communities with benefits that can encourage and entice them to care for and maintain protected areas (Snyman & Bricker, 2016). In this regard, tourists' activities ought to generate positive externalities to local communities (i.e. purchasing local produce and respecting the traditions and culture of local indigenes). Despite this recognition, tourism in general and tourists' behaviour in particular has been noted to have insignificant positive contributions to local communities. This study argues that since anthropocentrics tend to emphasize economic gains

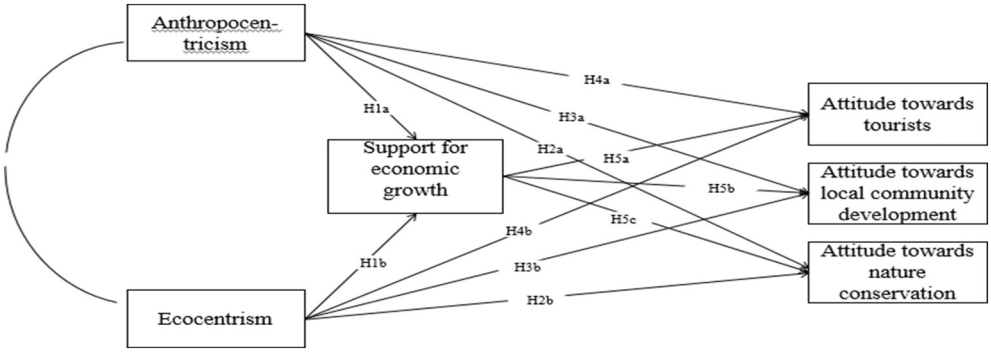

Fig. 1. Proposed empathic attitude towards SDT model.

from natural resources, they may support the development of local communities so that local communities will leave natural resources undisturbed, thus expanding the economic gains of nature to them (Ndivo & Cantoni, 2016; Nunkoo, 2016; Liang & Hui, 2016) compared to ecocentrics. None the less, ecocentrics may also support small scale tourism development that ensures decent wellbeing of locals but with less adverse impacts on the environment. Accordingly, the following hypotheses are proposed:

H3a. . Tourists with anthropocentric traits have significant positive empathic attitude towards local community development through tourism.

H3b. . Tourists with ecocentric traits have insignificant positive empathic attitude towards local community development through tourism.

Literature reveals that people show more empathy towards others with whom they feel closer. Gutsell and Inzlicht (2010) reported that the neural networks involved in empathy are more responsive to actions by in-group members than those by outgroup members. Studies by and Yzerbyt et al. (2003), Tarrant et al. (2009) and Mashuri et al. (2013) established that participants who categorised victims as belonging to their own group reported more empathic emotions than those who viewed them as 'outsiders'. Considering that ecocentrics are akin to collectives who emphasize that individuals benefits should be opportune and subordinated for the common good of society whereas anthropocentrics are egoistic and hence likely to put emphasis on personal benefit, it is proposed that:

H4a. : Tourists with anthropocentric traits have negative empathic attitude towards fellow tourists.

H4b. : Tourists with ecocentric traits have positive empathic attitude towards fellow tourists.

It can be argued that tourists who support economic growth through tourism will exhibit positive empathic attitude toward local community development, fellow tourists and the conservation of nature because tourism thrives largely on symbiotic relationship among these stakeholders. Budowski (1976) argues that without nature, tourism will be limited in scope. Similarly, improved welfare for the inhabitants of local communities is central for the effective maintenance of nature reserves. Pro-poor initiatives in the tourism industry that encourage consumers to patronize goods and services from local community members have been proven to lead to sustainable guardianship of natural resources and additional multiplier effects on increased tourist arrivals, positive memorable experiences and prolonged stays by visitors. Therefore it is proposed that:

H5a. : Tourists who support economic growth through tourism have strong positive empathic attitude towards fellow tourists.

H5b. : Support for economic growth through tourism has a significant positive influence on empathic attitude towards local community development.

H5c. : Support for economic growth through tourism has a significant positive influence on empathic attitude towards nature conservation.

2.3. Variables for invariance analysis

Sustainability values and attitudes have been found to vary across a number of personal and travel related characteristics. Paramount among such factors include sex, religion, past visitation to a nature reserve and environmental club membership (Thompson & Barton, 1994; Karpiak and Baril, 2008; Font et al., 2016). Regarding sex, females are acknowledged to have ecocentric values while males tend to possess anthropocentric values (Karpiak & Baril, 2008; Blok et al., 2015), and that women are more likely than men to hold attitudes which are consistent with sustainable development goals (Kim & Weiler, 2013; Tam, 2013). Consistent with this proposition, empirical studies (Rosalino & Rosalino, 2012; Tam, 2013; Font et al., 2016) on attitudes towards nature conservation show that females have more positive attitudes towards nature than males. Similarly, other studies (Borrie et al., 2002; Hedlund et al., 2012) have shown that when all other variables are controlled for, females are more prone to reveal pro-conservation attitudes than males. A study on the environmental attitudes of visitors to the US Virgin Islands National Park by Uysal, Jurowski, Noe and McDonald (1994) found that females were more likely than men to report that the balance of nature was in crisis. That having been said, some studies have also found no significant relationship between sex and sustainable consumption (Oom do Valle et al., 2004; Ek & Soderholm, 2008), whereas other studies also confirmed that men are more ecocentric than women (MacDonald & Hara, 1994).

Though religion has been shown to affect attitudes towards an array of prosocial issues, empirical findings on the relationship between religion and SDT are mixed ad inconclusive. For example, White Jr (1967) indicates that Christianity is strongly rooted in the Biblical literal view that man is to have dominion over the earth and its resources; and consequently that human needs are paramount to nature regardless of the consequences. Of all religions, White Jr (1967) argues that Judeo-Christianity is the most anthropocentric religion that the world has ever witnessed. Similarly, a comparative study on the environmental attitudes of Mormons and the general American population showed that while Mormons tend to express greater levels of environmental

concern, they are equally less likely to undertaken specific behaviours reflective of such concerns (Hunter & Toney, 2005). Also, Arbuckle and Konisky (2015) have found that members of the Judeo-Christian tradition are less concerned about environmental protection compared to their non-religious peers. While results of the study support the argument that religion depresses concern about the environment, they also revealed considerable variations across and within religious traditions. Moreover, Atheists, Muslims, Traditional African believers and adherents of eastern religious beliefs have been found to show greater concern for sustainability and nature conservation than Christians (Rice, 2006; Awuah-Nyamekye, 2014). Never the less, Kanagy and Willits (1993) posit that religiosity is not related to support for SDT. Studies also show that an empathically mediated, kin-specific and altruistic impulse is part and parcel of human genetic heritage, and that one of the functions of religion is to extend the range of this impulse beyond the kinship circle to other domains (Batson, 1983; Duriez, 2004). For instance, both Batson (1983) and Duriez (2004) found significant relationship between religion and general prosocial attitudes including perspective taking and empathic concern.

Past experience about nature is shown to influence major mental processes and increase people's skills and behaviour in multiple domains. Literature highlights that direct and concrete experiences with nature are an effective means to promote positive sustainability attitudes (Kaffashi et al., 2015; Geng et al., 2015). Zhang et al. (2014) found past experiences of natural places to be the most significant variable explaining variations in sustainability attitudes. Also, Collado et al. (2015) found significant positive influence of frequency of contact with nature on self-reported sustainability behaviour among young people, and suggested that people who had more contact with natural places in their earlier life are more likely to internalize and appreciate nature and hence will take up interest in sustainability issues. Moreover, Kaffashi et al. (2015) and Nisbet et al. (2009) found that people who had an intimate relationship with nature and have had more positive memorable experiences of natural places in the past were more committed to sustainability and took interest in protecting the environment.

Membership in environmental organizations has been found to be important in explaining attitudes towards SDT. In particular, studies indicate that people who belong to environmental clubs tend to have greater support for issues bothering on sustainability and donating for local community development compared to non-members. Specifically, Thompson and Barton (1994) found significant positive relationship between membership in environmental organizations and ecocentrism; significant negative association between membership in environmental organizations and anthropocentrism, and negative relationship between membership in environmental organizations and apathy.

H6. : The empathic attitude towards SDT model varies significantly by sex, religion, past experience, and environmental club membership.

3. Materials and methods

3.1. Study setting

The study was conducted at the Mole National Park (MNP) in Ghana. Established in 1971, MNP is Ghana's largest and most prestigious protected natural reserve (Akyeampong, 2008). It is located in the northern part of Ghana between 9°12′N and 10°06′N and longitudes 1°25′W and 2°17′W and stretches over five administrative districts including the West Gonja, North Gonja, Sawla-Tuna-Kalba and the West Mamprusi Districts in the Northern Region and the Wa East District in the Upper West Region (Fig. 2). MNP covers an area of approximately 4577 km^2 (Ghana Museums and Monuments Board, 2000). It is a natural reserve with the highest possibilities and priorities for the conservation of biological diversity.

Characterized by the Guinea Savannah Woodland ecosystem, MNP houses over 93 species of mammals that are at risk of extinction, 500 elephants, 400 species of birds, 9 species of amphibians, 33 species of reptiles and several insectivores and butterflies. MNP receives an average of 1061 visitors every month (Ghana Tourism Authority, 2014). Facilities in MNP include a car park, a visitors' centre, staff residential quarters, a motel and Eco-lodges. MNP is surrounded by about 33 peasant communities (Agyeman, 2012). Like most parts of Ghana, these communities are characterized by lack of economic opportunities. They also suffer from highly unpredictable rainfall patterns which generate drought conditions with consequences on crop yield and food security. These, and many other factors, compel young people from nearby communities to migrate to urban areas in the southern part of the country for better economic opportunities (Tufeiru, 2014).

3.2. Research instrument

A questionnaire was used to collect data. The first and second sections of the questionnaire contained questions on respondents' socio-demographic and travel characteristics respectively. The third section measured their value orientation, support for economic growth and empathic attitude. In all, the items measuring these constructs were 24 in number and were sourced from past studies (notably Thompson & Barton, 1994; Page & Dowling, 2002; Dunlap, 2008; Xu & Fox, 2014). For example, items measuring ecocentrism and anthropocentrism were drawn from Thompson and Barton (1994). The selection, adaption and refinement of the items measuring empathic attitude were guided by Alloway et al. (2016) multidimensional emotional empathy scale. The scale consists of six dimensions: suffering, positive sharing, responsive crying, emotional attention, feel for others and emotional contagion. Respondents were asked to respond to a set of statements on a scale from 1 to 5 measuring the extent of disagreement or agreement with the statements.

Both procedural methods and empirical assessments (Podsakoff et al., 2003; Patterson et al., 2016) were used to minimise potential issues of common method bias. From a procedural standpoint, the surveys were anonymous and a variety of scale endpoints were employed. Scale points were intermixed so as to avoid consistency motif. In addition, the items were subjected to series of pretests and expert querying to ensure clarity. Statistical measures were also used to ascertain whether common method variance biased the results. The study conducted a Harman's single-factor test (Harman, 1960) and a confirmatory factor analysis based on a one-factor test. Both estimations showed that a single factor did not sufficiently capture the covariance of the items. Thus, method bias does not pose a significant risk to the conclusion drawn from the study.

3.3. Data collection, sampling and sample characteristics

Data for the study were collected in two stages. The first set of data was collected between February and April, 2015 from 216 students of the University of Cape Coast using a convenience sampling technique. The data collected from the students were used to explore the parsimony of the measurement items using an exploratory factor analysis (see Table 1). The majority in the sample were male (66.67%), unmarried (96.76%) and Christian (96.76%). Those reading non-science based programmes dominated the study (89.81%). About 73% (72.69%) of the respondents had visited a nature reserve while the remaining proportion had never visited one. According to Xu and Fox (2014), the very act of choosing to visit a nature reserve suggests a particular view of natural places. So non-visitors were included in the item generation process to improve the content validity. It is also worth highlighting that only 11.57% of the respondents belonged to an environmental club.

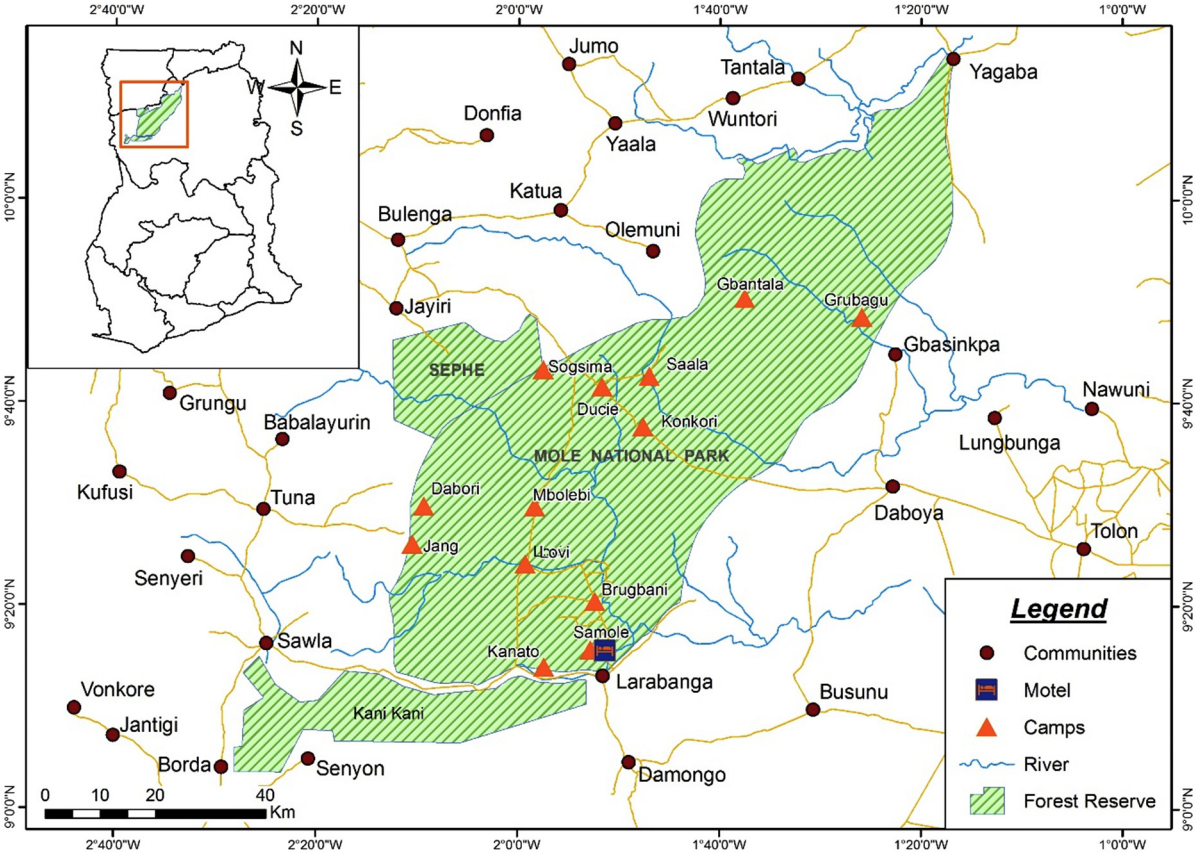

Fig. 2. A map of Mole National Park.

Table 1
Background characteristics of exploratory sample.

Characteristics	Categories	Frequency	Percent
Sex	Male	144	66.67
	Female	72	33.33
Marital status	Married	7	3.24
	Unmarried	209	96.76
Age	< 20	61	28.24
	20–29	145	67.13
	≥30–39	10	4.63
Religion	Christianity	209	96.76
	Islam	6	2.78
	Other	1	0.46
Level	First year	91	42.13
	Second year	62	28.70
	Third year	41	18.98
	Fourth year	22	10.19
Programme of study	Non-science	194	89.81
	Science	22	10.19
Cultural background	Akan	140	64.81
	Ewe	28	12.96
	Mole-Dagbani	22	10.19
	Ga	21	9.72
	Guan	5	2.31
Visitation to a natural reserve	Yes	157	72.69
	No	59	27.31
Environmental club membership	Member	25	11.57
	Non-member	191	88.43

Table 2
Background characteristics of respondents.

Characteristics	Categories	Frequency	Percent
Sex	Male	293	35.78
	Female	526	64.22
Marital status	Married	242	29.55
	Unmarried	577	70.45
Age	< 20	143	17.46
	20–29	362	44.20
	30–39	276	33.70
	≥40	38	4.64
Religion	Christianity	326	39.80
	Islam	269	32.84
	Buddhism	114	13.92
	Atheism	110	13.43
Education	High school	285	34.80
	First degree	376	45.19
	Post graduate	158	19.29
Continent of origin	Europe	244	29.79
	America	205	25.03
	Asia	199	24.30
	Africa	171	20.88
Travel history	First timers	578	70.57
	Repeat visitors	241	29.43
Travel party	Alone	240	29.30
	Group	579	70.70
Environmental club membership	Member	103	12.58
	Non-member	716	87.42

The second set of data, which was collected to confirm the exploratory factor structure, was drawn from 819 international tourists who visited Mole National Park (MNP) between May and September 2016. Potential respondents were approached at random at the visitor waiting area of the park prior to receiving on-site orientations. This was to guard against any temporary heightened levels of positive empathic attitude towards SDT. For those who visited the park in groups, two people on average were selected to complete the questionnaire. This too was envisaged to minimize potential group bias. More than half (64.22%) of the international tourists sampled were females (Table 2). A greater proportion of them were unmarried (70.45%). A little over 44% (44.20%) of the respondents were within the age cohort of

Table 3
Assessments of measures.

			Exploratory		Confirmatory			
Construct	Items	FL	EV (%VE)	α	SRW	AVE	CR	Mean
Anthropocentricism			5.77 (24.15)	0.73		0.57	0.84	
	Human innovation will ensure that the earth always remains replenished.	0.77			0.80			3.13
	People can always repair damage to the environment.	0.75			0.78			4.51
	Nature should benefit the economy	0.75			0.79			4.35
	God gave people control over nature.	0.67			0.63			3.56
Ecocentrism			3.86 (20.19)	0.70		0.61	0.82	
	People, animals and plants have a need to be in a natural environment.	0.76			0.75			4.35
	Conserving nature now is important for future generations.	0.76			0.81			4.59
	People are a part of nature.	0.75			0.78			4.48
Economic growth			2.17 (14.60)	0.87		0.64	0.78	
	Economic growth should be pursued by exploiting nature through tourism.	0.81			0.82			4.31
	The economic benefits of tourism are more important than the existence value of nature.	0.76			0.78			2.38
Nature conservation			1.31 (10.19)	0.79		0.58	0.85	
	Nature conservation should be carried out in national parks.	0.70			0.80			3.10
	Wildlife conservation should be carried out in national parks.	0.69			0.79			3.41
	Tourists should not litter at national parks.	0.80			0.75			3.21
	Poaching in national parks should be discouraged.	0.79			0.70			3.24
Attitude towards fellow tourists			1.30 (9.44)	0.76		0.56	0.86	
	Education/interpretation activities should be provided to visitors at natural reserves.	0.59			0.89			3.59
	Leisure and tourism activities should be carried out in natural reserves.	0.62			0.72			3.74
	Visitors should be allowed to conduct scientific research in natural reserves.	0.56			0.76			3.70
	Conservation activities in national parks should enhance tourist experiences.	0.53			0.73			4.23
	It is unlawful for local residents around national parks to attack visitors.				0.60			3.81
Attitude towards local community development			1.10 (8.34)	0.80		0.55	0.83	
	Local community development should be carried out in national parks.	0.63			0.83			4.21
	Tourists should contribute voluntarily towards alleviating poverty in local communities around parks.	0.86			0.79			4.01
	Local communities should be directly involved in the management of revenue from National parks.	0.83			0.57			4.45
	Decent alternative livelihoods should be provided to local residents around national parks.	0.73			0.76			2.98

CFI = 0.974; IFI = 0.975; NNFI = 0.978; RMSEA = 0.042.
KMO = 0.834, Bartlett's Test of Sphericity (Approx. χ^2) = 3082.672, P = 0.000.
EFL: Exploratory factor loading; % of variance explained; α: Cronbach alpha; SRW: standardized regression weights; CR: composite reliability; AVE: average variance extracted.

20–29 years and 33.70% within 30–39 years. The sample was dominated by Christians (39.80%), and those who completed a first degree (45.91%). Respondents who did not belong to any environmental club were the majority (87.42%).

4. Results

4.1. Exploratory analysis of measurement items

The suitability of the data for exploratory factor analysis was reached based on two recommended criteria: Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity. The estimate of Bartlett's test of Sphericity was found to be significant at $P < 0.01$ and was further confirmed by a KMO coefficient of 0.834 (Kaiser, 1974).The maximum likelihood analysis using Promax rotation was used to assess the scale structure. Eigen values ≥1 were used as the criterion for extracting factors, and the threshold for inclusion of a variable was ≥0.5 loading and communality of ≥0.6 (Hair et al., 2010). Six factor solutions including ecocentrism, anthropocentrism, and economic growth, empathy towards fellow tourists, empathy towards local community residents, and empathy towards nature were retained for further analysis. The Cronbach's alpha scores for the latent variables ranged from 0.70 to 0.87 (Table 3), suggesting a good level of internal consistency of the factors extracted. Two variables were dropped due to their inability to meet the set threshold (Lankford & Howard, 1994; Pallant, 2007).

4.2. Assessment of the confirmatory structure

Confirmatory Factor Analysis (CFA) was used to confirm the scale dimensionality and its parsimony. Using the formula proposed by Westland (2012), with 6 latent constructs and 22 observed variables in the model, an anticipated effect size and power of 0.95 and a Hoelter's statistic of 0.01 probability levels, the sample size of 819 was deemed adequate and reliable for performing the SEM analysis. To increase the reliability and robustness of the results, the study used thresholds that were higher than conventional thresholds. For example, Fisher (1925) recommends a probability of 0.05 while Cohen (1988) suggests a statistical power value of 0.8.

Fitness of the model was evaluated using the comparative fit index (CFI), incremental fit index (IFI), non-normed fit index (NNFI) and the root mean square error of approximation (RMSEA). For the CFI and IFI, values of ≥0.95 were employed as the rule of thumb for an acceptable fit while an RMSEA value of ≤0.08 was considered necessary for a good

Table 4
Inter-construct correlations and square root of the average variance extract (AVE).

Observed variables	1	2	3	4	5	6
1.Anthropocentrism	**0.75**					
2. Ecocentrism	0.61	**0.78**				
3. Economic growth	−0.08	−0.19	**0.80**			
4. Attitude towards nature conservation	0.12	0.09	0.08	**0.76**		
5. Attitude toward fellow tourists	0.36	0.02	0.02	0.28	**0.74**	
6. Attitude towards local community development	0.05	0.01	0.12	0.41	0.28	**0.74**

Note: Diagonals represent square roots of AVE whereas off-diagonal represent correlation coefficients

fit (Hu & Bentler, 1999; Kim 2014). The results (CFI = 0.974; IFI = 0.975 & RMSEA = 0.042) indicate that the CFA model fitted the data well. Other things being equal, sufficient evidence exists that the data fitted well with the six (6) constructs initially proposed by the EFA model. Table 3 also suggests that convergent validity of the measurement items was attained given that all the loadings exceeded the recommended threshold of 0.50 (Kim et al., 2015).

Moreover, discriminant validity was attained as none of the constructs, as shown in Table 4, correlated higher than the square root of its Average Variance Extract (Fornell & Larcker, 1981). The implication here is that each latent construct shared more variance with its items than it did with items of other constructs. (See Table 5.)

4.3. Structural model and hypotheses testing

The measurement model was then turned into a configural structural model according to the theoretical proposition (Fig. 3).The model summary indicates that the proposed model conforms well to the sampled data. A significant inverse relationship is established between ecocentrism and support for economic growth through tourism ($\lambda = -0.222$; $p = 0.000$), and between anthropocentrism and support for economic growth through tourism though the relationship is not marked ($\lambda = 0.061$; $p = 0.163$).

The study further established a significant positive relationship between anthropocentrism and empathy towards nature ($\lambda = 0.101$; $p = 0.021$), however the relationship between ecocentrism and empathy towards nature, though positive, was insignificant ($\lambda = 0.049$; $p = 0.273$). In addition, a significant positive association between support for economic growth through tourism and empathy towards fellow tourists was observed ($\lambda = 0.085$; $p = 0.009$), as was empathy towards local community development ($\lambda = 0.129$; $p = 0.000$). This means that those who support economic growth through tourism are more likely to endorse local community development via the same means. It is worth commenting that a significant and positive relationship exists between support for economic growth through tourism and empathy towards nature ($\lambda = 0.093$; $p = 0.008$). However, neither ecocentrism nor anthropocentrism significantly predicted empathy towards local community development (Table 5).

4.4. Invariance test results

A multi-group invariance test across sex: male versus female; religion: Christian versus non-Christian; past visitation to nature reserve (s): first timers versus repeat visitors; and environmental club membership: member versus non-member was conducted (Tables 6 and 7). The results indicate that the chi-square differences between the constrained and unconstrained models among groups are not statistically significant. Nonetheless, significant variations are noted in some of the hypothesized paths across the variables considered. Noteworthy support for nature conservation was expressed by female anthropocentrics ($\lambda = 0.226$; $p = 0.019$) compared to the males ($\lambda = 0.085$; $p = 0.253$).

As regards the path between ecocentrism and economic growth, an inverse relationship is observed for both males ($\lambda = -0.263$; $p = 0.000$) and females ($\lambda = -0.280$; $p = 0.000$). But significant difference is observed for the path from economic growth to nature conservation across sex. Whereas male respondents ($\lambda = 0.136$; $p = 0.005$) expressed significant positive support for this path, the path is positive but insignificant for their female ($\lambda = 0.045$; $p = 0.509$) counterparts.

Additionally, whereas the path between ecocentrism and attitude towards fellow tourists is positive for respondents who belonged to an environmental club ($\lambda = 0.272$, $p = 0.000$), the reverse is noted for non-members ($\lambda = -0.293$, $p = 0.002$). But the path from economic growth to community development is positive for both non-environmental club membership ($\lambda = 0.143$; $p = 0.278$) and membership ($\lambda = 0.163$; $p = 0.000$), just that the coefficient for the latter is significant. In line with theoretical reasoning, an inverse relationship is observed between ecocentric values and attitudes towards economic growth through tourism; with significant variations occurring across environmental club membership status: members ($\lambda = -0.284$; $p = 0.000$) and non-members ($\lambda = -0.182$; $p = 0.173$).

There are no variations in the significant negative relationship between ecocentrism and support for economic growth with respect to visitation status: first timers ($\lambda = -0.228$; $p = 0.023$) and repeaters ($\lambda = -0.279$; $p = 0.000$). In addition, the path between economic growth and attitude towards fellow tourists is positive and insignificant for repeaters but positive and significant for first timers (Table 6). Moreover, irrespective of visitation status, ecocentrism is positively and significantly related to empathy towards fellow tourists.

Christians ($\lambda = -0.308$; $p = 0.000$) and non-Christians

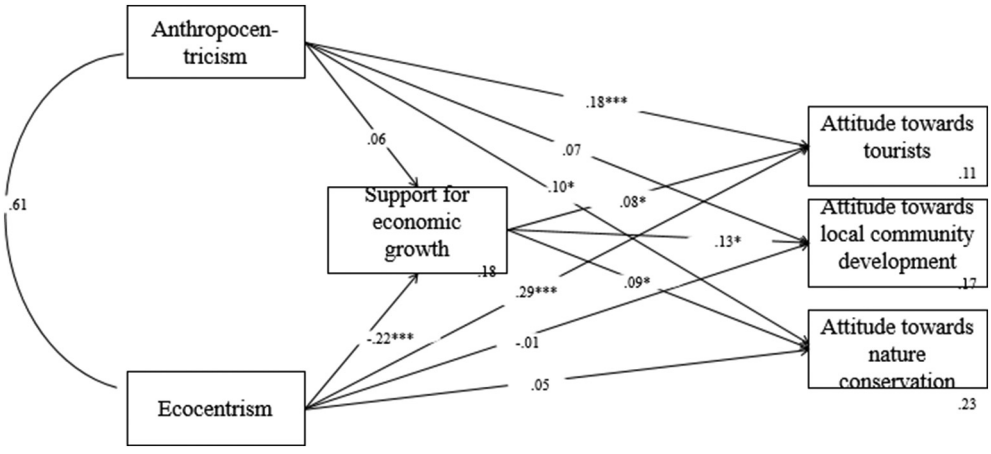

Fig. 3. Structural model with path diagram

Table 5
Summary of hypotheses and conclusions.

Hypotheses	Description	Conclusion
H1a	Tourists with anthropocentric traits have significant positive empathic attitude towards economic growth through tourism	Not supported
H1b	Tourists with ecocentric traits have positive insignificant empathic attitude towards economic growth through tourism	Not supported
H2a	Tourists with anthropocentric traits have significant positive empathic attitude towards nature conservation	Supported
H2b	Tourists with ecocentric traits have significant positive empathic attitude towards nature conservation	Supported
H3a	Tourists with anthropocentric traits have significant positive empathic attitude towards local community development through tourism	Not supported
H3b	Tourists with ecocentric traits have insignificant positive empathic attitude towards local community development through tourism	Not supported
H4a	Tourists with anthropocentric traits have negative empathic attitude towards fellow tourists	Not supported
H4b	Tourists with ecocentric traits have positive empathic attitude towards fellow tourists	Supported
H5a	Tourists who support economic growth through tourism have strong positive empathic attitude towards fellow tourists	Supported
H5b	Support for economic growth through tourism has a significant positive influence on empathic attitude towards local community development.	Supported
H5c	Support for economic growth through tourism has a significant positive influence on empathic attitude towards nature conservation	Supported
H6	The empathic attitude towards SDT model varies significantly by sex, religion, past experience, and environmental club membership	Not supported

Table 6
Model fits for invariance tests.

	Model	χ^2	Df	$\Delta\chi^2$	Δdf	P	CFI	RMSEA	NNFI	IFI
Sex	Uncon	238.042	6				0.931	0.052	0.956	0.928
	Cons	248.157	17	10.115	11	0.520	0.925	0.029	0.962	0.926
Religion	Uncon	232.336	6				0.973	0.017	0.960	0.974
	Const	247.512	17	15.176	11	0.175	0.974	0.090	0.951	0.933
Past visitations	Uncon	238.887	6				0.972	0.018	0.975	0.972
	Const	250.075	17	11.188	11	0.428	0.925	0.029	0.972	0.962
Env. clubism	Uncon	246.037	6				0.971	0.022	0.940	0.971
	Const	252.958	17	6.921	11	0.805	0.961	0.030	0.902	0.972

Note: Significant at $P < 0.01$ and $P < 0.05$.

Table 7
Multi-group moderation results.

Independent		Dependent	Sex				Religion			
			Male		Female		Christian		Non-Christian	
			SRW	P	SRW	P	SRW	P	SRW	P
Anthropocentrism	→	Economic growth	0.102	0.236	0.058	0.382	0.100	0.081	0.037	0.814
Ecocentrism		Economic growth	−0.280	0.000	−0.263	0.000	−0.308	0.000	−0.214	0.149
Economic growth	→	Attitude towards local community development	0.040	0.621	0.228	0.000	0.135	0.005	0.269	0.033
Ecocentrism	→	Attitude towards local community development	0.025	0.827	−0.042	0.618	−0.014	0.853	0.010	0.951
Anthropocentrism	→	Attitude towards local community development	0.142	0.218	0.087	0.285	0.083	0.259	0.369	0.024
Economic growth	→	Attitude towards fellow tourists	0.050	0.267	0.077	0.014	0.051	0.060	0.172	0.040
Ecocentrism	→	Attitude towards fellow tourists	0.220	0.000	0.314	0.000	0.268	0.000	0.259	0.014
Anthropocentrism	→	Attitude towards fellow tourists	0.216	0.000	0.154	0.001	0.187	0.000	0.130	0.228
Anthropocentrism	→	Nature conservation	0.226	0.019	0.085	0.253	0.107	0.102	0.226	0.131
Economic growth	→	Nature conservation	0.045	0.509	0.136	0.005	0.070	0.098	0.362	0.002
Ecocentrism	→	Nature conservation	−0.043	0.653	0.133	0.082	0.086	0.203	−0.142	0.329

			Past visitation		Environmental Club Membership					
			Repeaters		First timers		Non member		Member	
			SRW	P	SRW	P	SRW	P	SRW	P
Anthropocentrism	→	Economic growth	0.078	0.209	0.051	0.606	0.017	0.909	0.082	0.146
Ecocentrism		Economic growth	−0.279	0.000	−0.228	0.023	−0.182	0.173	−0.284	0.000
Economic growth	→	Attitude towards local community development	0.084	0.111	0.363	0.000	0.143	0.278	0.163	0.000
Ecocentrism	→	Attitude towards local community development	−0.046	0.565	0.063	0.613	0.107	0.531	−0.039	0.599
Anthropocentrism	→	Attitude towards local community development	0.134	0.092	0.040	0.743	0.073	0.697	0.111	0.120
Economic growth	→	Attitude towards fellow tourists	0.042	0.158	0.132	0.012	0.125	0.089	0.060	0.030
Ecocentrism	→	Attitude towards fellow tourists	0.270	0.000	0.294	0.000	−0.293	0.002	0.272	0.000
Anthropocentrism	→	Attitude towards fellow tourists	0.179	0.000	0.170	0.028	0.237	0.025	0.169	0.000
Anthropocentrism	→	Nature conservation	0.146	0.037	0.101	0.354	0.055	0.729	0.150	0.018
Economic growth	→	Nature conservation	0.090	0.052	0.127	0.086	0.309	0.006	0.076	0.072
Ecocentrism	→	Nature conservation	0.059	0.402	0.084	0.451	0.117	0.420	0.053	0.418

Note: Significant at $P < 0.01$ and $P < 0.05$.

($\lambda = -0.214$; $p = 0.149$) with ecocentric values expressed no support for economic growth through tourism. Nevertheless, the path from economic growth to community development is positive and significant for both religious cohorts, signaling that religion cannot be used as an important segmentation variable in attracting tourists who will support local community development and related issues. This finding implies that Christians and non-Christians alike reckon that economic growth through tourism should take into consideration the developmental needs of surrounding communities. In a similar token, both religious groupings believe that economic growth through tourism should not undermine nature conservation (Table 7). Generally, these results indicate that the claim that Christianity is the worst religion in terms of support for sustainability issues (White Jr, 1967) is empirically weak.

5. Discussion

This study sought to holistically explore how tourists' value orientation affects their attitudes towards SDT by proposing and validating a model on empathic attitude towards SDT. Based on literature, the study hypothesized (H6) that the model varies significantly by sex, religion, past experience, and environmental club membership. The results found no support for this declaration, which signifies that the configural model at the global level is invariant across the variables considered.

Further verifying the hypotheses, both individuals with anthropocentric and ecocentric values demonstrated positive empathic attitude towards nature conservation, albeit with significant support indicated by the former. This outcome leads to a confirmation of the hypothesis (H2a) that tourists with anthropocentric traits have significant positive empathic attitude towards nature conservation. This finding departs from the widely held view that anthropocentrics do not support pro-environmental initiatives, and conveys that irrespective of one's anthropocentric orientation, positive attitudes can still be expressed towards nature conservation.

Stronger support for nature conservation exists among females with anthropocentric traits and those who belong to environmental clubs. Females in general and people who belong to environmental clubs tend to demonstrate positive attitudes and behaviours towards nature conservation (Tam, 2013; Sudbury-Riley & Kohlbacher, 2016). Conclusions by previous studies, for example by Xu and Fox (2014), indicate that tourists with ecocentric values demonstrate more positive attitudes towards the environment than those with anthropocentric traits. Correspondingly, the study hypothesised (H2b) that tourists with ecocentric traits have significant positive empathic attitude towards nature conservation, but the results indicate otherwise. The exception is that significant positive association exists between ecocentrism and nature conservation among Christians.

The dual-interest theory contends that no matter individuals' value orientation they can show compassion towards nature conservation because of varied interests (Thompson & Barton, 1994; Lynne, 1999). Though a positive coefficient has been observed for both value orientations and nature conservation, the ecocentrism-anthropocentrism differentiation is extremely important for park governance. Value dispositions significantly matter when it comes to support for nature conservation. While anthropocentrics support conservation of nature for the material benefits associated with it, ecocentrics would support the same course but with a nature-centered motive (Hernández et al., 2000). In such situations, what matters most is the formulation and clear communication of environmental campaigns geared towards eliciting pro-environmental behaviour. Thus, destination marketing organisations and park managers should be concerned with policies and programmes that can take advantage of the differences in value orientation and motives to improve the sustainability efforts of visitors and the tourism industry as a whole.

Similarly, the study established that regardless of one's value orientation, anthropocentrism or ecocentrism, strong empathic emotions can be shown towards fellow tourists. This outcome indicates no support for the hypothesis (H4a) that tourists with anthropocentric traits have negative empathic attitude towards fellow tourists. Moreover, the study fails to reject the hypothesis (H4b) that tourists with ecocentric traits have positive empathic attitude towards fellow tourists. This is a revelation of empathy towards oneself first before others. The important point here is that policies geared towards ensuring the welfare of tourists, including the provision of satisfactory experiences, are most likely to be endorsed by tourists irrespective of their individual value profile. This kind of behaviour is termed by Font et al. (2016) as in-group collectivism or self-serving sustainability actions, which refers to caring for close relations or supporting social initiatives which guarantee self-enhancement. Masked within this finding is the risk of tourists remaining loyal and sympathetic to fellow tourists even when their behaviour goes against sustainability. Tucker (2016) notes that empathy can be ethically hazardous in the sense that imagining oneself 'in the shoes of others can engender both negative and positive dispositions.

In contrast to the study's supposition (H1b), it is established that ecocentrism has a significant negative impact on empathic attitude towards economic growth through tourism. But we found no support for the view that (H1a) tourists with anthropocentric traits have significant positive empathic attitude towards economic growth through tourism. This suggests that ecocentrics relative to anthropocetrics are less likely to favour the exploitation of natural reserves for economic growth purposes. The observation of a significant positive relationship between economic growth and nature conservation conveys tourists' subscription to the philosophy that a symbiotic relationship can exist between the quest for economic growth and nature conservation: where nature benefits the economy and the economy in turns benefits nature. Hence, we failed to reject the hypothesis (H5c) that economic growth through tourism has a significant influence on positive empathic attitude towards nature conservation. Males, non-Christians, and repeaters showed significant support for both economic growth and nature conservation. These categories of visitors could be the optimal targets for visitor-based pro-conservation activities.

Another significant finding of the study is the retention of the proposition (H5b) that support for economic growth through tourism has a significant influence on positive empathic attitude towards local community development. This signals that people who support economic growth through tourism using natural resources are also more likely to favour the development of host communities. People who support economic growth via tourism would also want to ensure that there is trickle-down effect of the benefits of economic growth to communities hosting natural reserves. Sharing of proceeds from tourism with locals promotes locals' welfare and potentially reduces host-guest conflicts. It also serves as an incentive for increasing locals' support for and participation in conservation activities. Policy wise, males, first timers, and environmental club members should be given priority with respect to local community development using tourism as they showed greater support for it. This notwithstanding, some study outcomes have bemoaned that tourism has hardly benefited host residents, particularly in developing nations. Even in instances where tourists volunteer their time and physical efforts in providing alternative livelihood opportunities to local community residents, the intervention often turns out to be short-lived, menial and unrewarding (Coria & Calfucura, 2012; Karki & Hubacek, 2015).

6. Conclusions and implications

This study proposed and empirically tested a model that explains tourist empathy towards sustainable development in tourism. The uniqueness of this model lies not only in its empirical subjects, who have hardly been the centre of investigations of sustainability empathy in tourism, but its integrated nature drawing on the dimensions of SDT. The study has validated the proposition by Stern and Dietz (1994) that

value orientation is central in defining empathic feelings. Novel insights are also offered on how anthropocentrism and ecocentrism affect tourists' attitude towards SDT. This integrated conclusion offers deeper understanding on the influence of value attachment to the social and economic components of sustainable development unlike previous studies that only focused on support for the environment. This represents baseline information for future research on the relationship between values, empathic attitude and SDT. Based on the results of the invariant test, the study concludes that sex, religion, past visitation to nature reserve(s), and environmental club membership do not act as mechanisms shaping the causal path between values and empathy towards SDT. Nevertheless, their effect in accounting for variation in some of the causal paths exists. This provides the need for path-by-path segmented modelling to provide more nuanced insights to empathic communication framing.

For the governance of nature reserves, the findings can form the basis for eliciting pro-sustainable behaviours that benefit the environment, tourists, and communities surrounding nature reserves. Tourists tend to act consistently with their values to sustain their social attachment and intended outcomes of such actions (Doran et al., 2017). The study recommends that the framing of messages to elicit sustainability mindfulness among tourists could be a promising means to engender support for SDT. With this, there is the need for managers of nature reserves to focus on satisfying all stakeholders, including community residents and tourists, instead of focusing only on environmental conservation. In other words, relying on effective empathic communication can entice support for sustainable development. Management need to modify existing sustainability campaigns and messages by incorporating and highlighting the benefits of sustainable development in a manner that reflects the values of ecocentrism and anthropocentrism as well as the need for harmonious living with fellow humans, and nature. In particular, efforts should be implemented to educate tourists on the need to support local community development through their purchases and voluntary contributions. This recommendation is timely since the findings indicate that the sampled tourists currently have weak positive dispositions towards local community development.

Although the study has advanced knowledge and understanding on the role of values and empathy on sustainability, some limitations are worth mentioning. First, though the theoretical model is well conceived and grounded, a replication of the study or additional testing using different samples and value profiles could substantiate the current research findings. Consideration could be given to the individualism and collectivism value orientation. Second, like other cross-sectional studies, relying on information from primary interviews with tourists to one national park is problematic and can affect the universal application of the findings. It would be essential to have longitudinal evidence in order to monitor and effectively evaluate the nexus between values and support for SDT among other actors in the tourism industry. More so, the fact that the respondents were visiting a national park could mean that they have an interest in nature and that could bias the findings. But, it is important to draw attention to the fact that not all visitors to eco-attractions do so because of nature. Parks also serve other utilitarian needs ranging from social to ego-enhancement (Adam et al., 2017). Nevertheless, it would be encouraging to replicate this study in other non-nature tourism contexts to allow for comparison with the findings. Finally, literature documents an attitude-behaviour gap in sustainable tourism (Juvan & Dolnicar, 2014), but the current study did not take this gap into consideration in its structural model. This is an important grey area for future research.

Appendix A. Relationship between values, economic growth and sustainable development in tourism

Independent		Dependent	SRW	SE	P
Anthropocentrism	→	Economic growth	0.043	0.042	0.282
Ecocentrism	→	Economic growth	−0.208	0.048	0.000
Ecocentrism	→	Sustainable development in tourism	0.153	0.038	0.000
Anthropocentrism	→	Sustainable development in tourism	0.104	0.032	0.009
Economic growth	→	Sustainable development in tourism	0.144	0.027	0.000

Note: Significant at $P < 0.01$ and $P < 0.05$.

Appendix B. Results of path analysis

Independent		Dependent	SRW	SE	P
Anthropocentrism	→	Economic growth	0.061	0.052	0.163
Ecocentrism	→	Economic growth	−0.222	0.052	0.000
Economic growth	→	Attitude towards community development	0.129	0.044	0.000
Ecocentrism	→	Attitude towards community development	−0.009	0.067	0.844
Anthropocentrism	→	Attitude towards community development	0.069	0.067	0.114
Economic growth	→	Attitude towards fellow tourists	0.085	0.026	0.009
Ecocentrism	→	Attitude towards fellow tourists	0.291	0.039	0.000
Anthropocentrism	→	Attitude towards fellow tourists	0.184	0.039	0.000
Anthropocentrism	→	Attitude towards nature	0.101	0.059	0.021
Economic growth	→	Attitude towards nature	0.093	0.039	0.008
Ecocentrism	→	Attitude towards nature	0.049	0.059	0.273

CFI = 0.971; RMSEA = 0.043; NNFI = 0.980
Note: Significant at $P < 0.01$ and $P < 0.05$.

References

Adam, I., Adongo C.A., Amuquandoh F.E., 2017. A structural decompositional analysis of eco-visitors' motivations, satisfaction and post-purchase behaviour. J. Ecotour. http://dx.doi.org/10.1080/14724049.2017.1380657.

Agyeman, A.O., 2012. Effects of Human Wildlife Interactions on Local Livelihoods in Murugu and Mognori Communities near Mole National Park. Unpublished Thesis. Kwame Nkrumah University of Science and Technology, Kumasi, Ghana.

Akyeampong, O.A., 2008. Attractions: the bedrock of tourism development in Ghana. In: Akyeampong, O., Asiedu, A.B. (Eds.), Tourism in Ghana: a Modern Synthesis. Assemblies of God Literature Centre Ltd., Accra, pp. 1–23.

Alloway, T.P., Copello, E., Loesch, M., Soares, C., Watkins, J., Miller, D., Campell, G., Tarter, A., Law, N., Soares, N., Ray, S., 2016. Investigating the reliability and validity of the multidimensional emotional empathy scale. Measurement 90, 438–442.

Arbuckle, M., Konisky, D., 2015. The role of religion in environmental attitudes. Soc. Sci. Q. 96 (5), 1244–1263.

Awuah-Nyamekye, S., 2014. Indigenous ways of creating environmental awareness: case study from Berekum Traditional Area of Ghana. Journal for the Study of Religion, Nature and Culture 8 (1), 46–63.

Bandura, A., 1986. Social Foundations of Thought and Action: a Social Cognitive Theory. Prentice Hall, Englewood Cliffs, NJ.

Batson, C.D., 1983. Sociobiology and the role of religion in promoting prosocial behavior: an alternative review. J. Pers. Soc. Psychol. 45, 1380–1385.

Blok, V., Wesselink, R., Studynka, O., Kemp, R., 2015. Encouraging sustainability in the workplace: a survey of the pro-environmental behaviour of university employees. J. Clean. Prod. 106, 55–67.

Borrie, W.T., Freimund, W.A., Davenport, M.A., 2002. Winter visitors to Yellowstone National Park: their value orientations and support for management actions. Human Ecology Review 9 (2), 41–48.

Bramwell, B., Higham, J., Lane, B., Miller, G., 2017. Twenty-five years of sustainable tourism and the Journal of Sustainable Tourism: looking back and moving forward. J. Sustain. Tour. 25 (1), 1–9.

Budowski, G., 1976. Tourism and environmental conservation: conflict, coexistence, or symbiosis? Environ. Conserv. 3 (1), 27–31.

Burns, G.L., MacBeth, J., Moore, S., 2011. Should dingoes die? Principles for engaging eccentric ethics in wildlife tourism management. Journal of Ecotourism 10 (3), 179–196.

Cohen, J., 1988. Statistical Power Analysis for the Behavioral Sciences, 2nd ed. Lawrence Earlbaum Associates, New Jersey.

Collado, S., Corraliza, J.A., Staats, H., Ruiz, M., 2015. Effects of frequency of contact with nature on children's self-reported ecological behaviors. J. Environ. Psychol. 41, 65–73. http://dx.doi.org/10.1016/j.jenvp.2014.11.001.

Coria, J., Calfucura, E., 2012. Ecotourism and the development of indigenous communities: the good, the bad, and the ugly. Ecol. Econ. 73, 47–55.

Costarelli, S., Colloca, P., 2004. The effects of attitudinal ambivalence on pro-environmental behavioral intentions. J. Environ. Psychol. 24 (3), 279–288. http://dx.doi.org/10.1016/j.jenvp.2004.06.001.

Czap, N.V., Czap, H.J., Khachaturyan, M., Lynne, G.D., Burbach, M., 2012. Walking in the shoes of others: experimental testing of dual-interest and empathy in environmental choice. J. Socio-Econ. 41, 642–653. http://dx.doi.org/10.1016/j.socec.2012.05.005.

Czap, N.V., Czap, H.J., Lynne, G.D., Burbach, M., 2015. Walking in my shoes: nudging for empathy conservation. Ecol. Econ. 118, 147–158.

Das, M., Chatterjee, B., 2015. Ecotourism: a panacea or a predicament? Tourism Management Perspectives 14, 3–16 (http://dx.doi.org/j.tmp.2015.01.002).

Davis, M.H., 1983. Measuring individual differences in empathy: evidence for a multidimensional approach. J. Pers. Soc. Psychol. 44 (1), 113–126.

Ding, P., Pigram, J., 1995. Environmental audits: an emerging concept in sustainable tourism development. Journal of Tourism Studies 6 (2), 2–10.

Doran, R., Hanss, D., Larsen, S., 2017. Intentions to make sustainable tourism choices: do value orientations, time perspective, and efficacy beliefs explain individual differences? Scand. J. Hosp. Tour. 17 (3), 223–238.

Dunlap, R.E., 2008. The new environmental paradigm scale: from marginality to worldwide use. J. Environ. Educ. 40 (1), 3–18.

Duriez, B., 2004. Are religious people nicer people? taking a closer look at the religion-empathy relationship. Ment. Health Relig. Cult. 7 (3), 249–254.

Ek, K., Soderholm, P. (Eds.), 2008. Norms and economic motivation in the Swedish green electricity market. Ecol. Econ. 68 (1-2), 169–182.

Ericson, T., Kjønstad, B.G., Barstad, A., 2014. Mindfulness and sustainability. Ecol. Econ. 104, 73–79. http://dx.doi.org/10.1016/j.ecolecon.2014.04.007.

Ferraro, P.J., Hanauer, M.M., 2011. Protecting ecosystems and alleviating poverty with parks and reserves: 'win-win 'or tradeoffs? Environ. Resource Econ. 48 (2), 269–286.

Fisher, R.A., 1925. Statistical methods for research workers. Oliver & Boyd, Edinburgh.

Font, X., Garay, L., Jones, S., 2016. A social cognitive theory of sustainability empathy. Ann. Tour. Res. 58, 65–80. http://dx.doi.org/10.1016/j.annals.2016.02.004.

Forbes, B.C., Monz, C., Tolvanen, A., 2004. Tourism ecological impacts in terrestrial polar ecosystems. In: Buckley, R. (Ed.), Environmental Impact of Ecotourism. CABI Publishing, Oxfordshire, pp. 155–170.

Fornell, C., Larcker, D.F., 1981. Evaluating structural equation models with unobservable variables and measurement error. J. Market. Res. 18 (1), 39–50.

Geng, L., Xu, J., Ye, L., Zhou, W., Zhou, K., 2015. Connections with nature and environmental behaviors. PLoS One 10 (5), e0127247.

Ghana Museums and Monuments Board, 2000. Mole National Park: a Description. Accra, Government of Ghana & World Heritage and Cultural Centre.

Ghana Tourism Authority, 2014. Tourist Statistical Fact Sheet on Ghana. Ghana Tourism Authority, Accra.

de Groot, J.I.M., Steg, L., 2008. Value orientations to explain beliefs related to environmental significant behavior: how to measure egoistic, altruistic, and biospheric value orientations. Environ. Behav. 40 (3), 330–354.

Gutsell, J.N., Inzlicht, M., 2010. Empathy constrained: prejudice predicts reduced mental simulation of actions during observation of outgroup. J. Exp. Soc. Psychol. 46 (5), 841–845.

Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E., 2010. Multivariate data analysis, 7th ed. Pearson Education International, Upper Saddle River, NJ.

Harman, H.H., 1960. Modern factor analysis. University of Chicago Press, Chicago, IL.

Hedlund, T., Marell, A., Gärling, T., 2012. The mediating effect of value orientation on the relationship between socio-demographic factors and environmental concern in Swedish tourists' vacation choices. J. Ecotour. 11 (1), 16–33.

Hernández, B., Suárez, E., Martínez-Torvisco, J., Hess, S., 2000. The study of environmental beliefs by facet analysis: research in the Canary Islands, Spain. Environ. Behav. 32 (5), 612–636.

Hoffman, M.L., 2008. Empathy and prosocial behavior. In: Lewis, M., Haviland-Jones, J.M., Barrett, L.F. (Eds.), Handbook of Emotions, 3rd Ed. Guilford Press, New York, NY, pp. 440–455.

Hofstede, G., 1980. Culture's Consequences: International Differences in Work-related Values. Sage, Beverly Hills.

Hogan, R., 1969. Development of an empathy scale. J. Consult. Clin. Psychol. 33 (3), 307–316.

Hu, L., Bentler, P.M., 1999. Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives. Struct. Equ. Model. 6 (1), 1–55.

Huang, Y., Deng, J., Li, J., Zhong, Y., 2008. Visitors 'attitudes towards China's national forest policy, roles and functions, and appropriate use. J. Sustain. Tour. 16 (1), 63–84.

Hunter, L.M., Toney, M.B., 2005. Religion and attitudes towards the environment: a comparison of Mormons and the general US population. Soc. Sci. J. 42 (1), 25–38.

Jägerbrand, A.K., Alatalo, J.M., 2015. Effects of human trampling on abundance and diversity of vascular plants, bryophytes and lichens in alpine heath vegetation, Northern Sweden. SpringerPlus 4, 95.

Juvan, E., Dolnicar, S., 2014. The attitude–behaviour gap in sustainable tourism. Ann. Tour. Res. 48, 76–95.

Juvan, E., Dolnicar, S., 2016. Measuring environmentally sustainable tourist behaviour. Ann. Tour. Res. 59, 30–44. http://dx.doi.org/10.1016/j.annals.2016.03.006.

Kaffashi, S., Yacob, M.R., Clark, M.S., Randam, A., Mamat, M.F., 2015. Exploring visitors' willingness to pay to generate revenue for managing the national elephant conservation centre in Malaysia. Forest Policy Econ. 56, 9–19.

Kaiser, H.F., 1974. An index of factorial simplicity. Psychometrika 39 (1), 31–36.

Kanagy, C.L., Willits, F.K., 1993. A greening of religion? Some evidence from a Pennsylvania sample. Soc. Sci. Q. 74 (3), 674–683.

Karki, S.T., Hubacek, K., 2015. Developing a conceptual framework for the attitude–intention–behaviour links driving illegal resource extraction in Bardia National Park, Nepal. Ecol. Econ. 117, 129–139.

Karpiak, C.P., Baril, G.L., 2008. Moral reasoning and concern for the environment. J. Environ. Psychol. 28, 203–208.

Kim, J.-H., 2014. The antecedents of memorable tourism experiences: the development of a scale to measure the destination attributes associated with memorable experiences. Tour. Manag. 44, 34–45.

Kim, A.K., Weiler, B., 2013. Visitors' attitudes towards responsible fossil collecting behaviour: a structural attitude-based segmentation approach. Tour. Manag. 36, 602–612.

Kim, H., Woo, E., Uysal, M., 2015. Tourism experience and quality of life among elderly tourists. Tour. Manag. 46, 465–476.

Kirman, A., Teschl, M., 2010. Selfish or selfless? The role of empathy in economics. Philos. Trans. R. Soc. B 365 (1538), 303–317.

Kollmuss, A., Agyeman, J., 2002. Mind the gap: why do people act environmentally and what are the barriers to pro-environmental behavior? Environ. Educ. Res. 8 (3), 239–260.

Kortenkamp, K.V., Moore, C.F., 2001. Ecocentrism and anthropocentrism: moral reasoning about ecological commons dilemmas. J. Environ. Psychol. 21 (3), 261–272.

Lankford, S.V., Howard, D.R., 1994. Developing a tourism impact attitude scale. Ann. Tour. Res. 21 (1), 121–139.

Lee, T.H., 2013. Influence analysis of community resident support for sustainable tourism development. Tour. Manag. 34, 37–46.

López-Sánchez, Y., Pulido-Fernández, J.I., 2016. In search of the pro-sustainable tourist: a segmentation based on the tourist "sustainable intelligence". Tourism Management Perspectives 17, 59–71.

Liang, Z.-X., Hui, T.-K., 2016. Residents' quality of life and attitudes towards tourism development in China. Tour. Manag. 57, 56–67.

Lynne, G.D., 1999. Divided self-models of the socioeconomic person: the metaeconomics approach. J. Socio-Econs 28 (3), 267–288.

MacDonald, W.L., Hara, N., 1994. Gender differences in environmental concern among college students. Sex Roles 33 (5-6), 369–374.

Mackinnon, B., Fiala, A., 2007. Ethics: Theory and Contemporary Issues, 5th ed. Thomson/Wadsworth, Belmont, CA.

Ma-Kellams, C., Lerner, J., 2016. Trust your gut or think carefully? Examining whether an intuitive, versus a systematic, mode of thought produces greater empathic accuracy. J. Pers. Soc. Psychol. 111 (5), 674–685.

Mashuri, A., Hasanah, N., Rahmawati, I., 2013. The effect of outgroup status and perspective-taking on empathy and outgroup helping. International Journal of Research in Psychology 2 (2), 3–14. http://dx.doi.org/10.5861/ijrsp.2012.149.

Moeller, T., Dolnicar, S., Leisch, F., 2011. The sustainability-profitability trade-off in tourism: Can it be overcome? J. Sustain. Tour. 19 (2), 155–169. http://dx.doi.org/10.1080/09669582.2010.518762.

Nickerson, N.P., Jorgenson, J., Boley, B.B., 2016. Are sustainable tourists a higher spending market? Tour. Manag. 54, 170–177.
Nisbet, E.K., Zelenski, J.M., Murphy, S.A., 2009. The nature relatedness scale: linking individuals' connection with nature to environmental concern and behavior. Environ. Behav. 41 (5), 715–740.
Nunkoo, R., 2016. Toward a comprehensive use of the social exchange theory to study residents' attitudes to tourism. Procedia Economics and Finance 39, 588–596.
Ndivo, R.M., Cantoni, L., 2016. Rethinking local community involvement in tourism development. Ann. Tour. Res. 57, 234–278.
Oom do Valle, P., Reis, E., Menzes, J., Rebelo, E., 2004. Behavioral determinants of household recycling participation: the Portuguese case. Environ. Behav. 36 (4), 505–540.
Packer, J., Ballantyne, R., Hughes, K., 2014. Chinese and Australian tourists' attitudes to nature, animals and environmental issues: implications for the design of nature-based tourism experiences. Tour. Manag. 44, 101–107.
Page, S., Dowling, R.K., 2002. Ecotourism. Prentice Hall, Harlow.
Patterson, P.G., Brady, M.K., McColl-Kennedy, J.R., 2016. Geysers or bubbling hot springs? A cross-cultural examination of customer rage from eastern and western perspectives. J. Serv. Res. 19 (3), 243–259.
Pfattheicher, S., Sassenrath, C., Schindler, S., 2015. Feelings for the suffering of others and the environment compassion fosters proenvironmental tendencies. Environ. Behav. 1–17.
Pizam, A., Calantone, R., 1987. Beyond psychographics-values as determinants of tourist behaviour. Int. J. Hosp. Manag. 6 (3), 177–181.
Pallant, J. (2007). SPSS Survival Manual: a Step by Step Guide to Data Analysis Using SPSS for Windows (Version 15). 3rd ed. Sydney, AU: Open University Press.
Podsakoff, P.M., MacKenzie, S.B., Lee, J.Y., Podsakoff, N.P., 2003. Common method biases in behavioral research: a critical review of the literature and recommended remedies. J. Appl. Psychol. 88 (5), 879–903.
Pulido-Fernández, J.I., Andrades-Caldito, L., Sánchez-Rivero, M., 2015. Is sustainable tourism an obstacle to the economic performance of the tourism industry? Evidence from an international empirical study. J. Sustain. Tour. 23 (1), 47–64.
Reser, J.P., Bentrupperbäumer, J.M., 2005. What and where are environmental values? Assessing the impacts of current diversity of use of 'environmental' and 'world heritage' values. J. Environ. Psychol. 25 (2), 125–146.
Rice, G., 2006. Pro-environmental behaviour in Egypt: is there a role for Islamic environmental ethics? J. Bus. Ethics 65 (4), 373–390.
Rokeach, M. (1968). Beliefs, Attitudes, and Values: a Theory of Organization and Change. San Francisco: Jossey-Bass.
Rokeach, M., 1973. The Nature of Human Values. Free Press, New York.
Rosalino, L.M., Rosalino, C., 2012. Nature conservation from a junior high school perspective. J. Nat. Conserv. 20 (3), 153–161.
Ruhanen, L., Weiler, B., Moyle, B.D., McLennan, C.L.J., 2015. Trends and patterns in sustainable tourism research: a 25-year bibliometric analysis. J. Sustain. Tour. 23 (4), 517–535.
Santana-Jimenez, Y., Hernandez, J.M., 2011. Estimating the effect of the overcrowding on tourist attraction: The case of Canary Islands. Tour. Manag. 32 (2), 415–425.
Shamay-Tsoory, S.G., Aharon-Peretz, J., Perry, D., 2009. Two systems for empathy: a double dissociation between emotional and cognitive empathy in inferior frontal gyrus versus ventromedial prefrontal lesions. Brain 132 (3), 617–627.
Sher, K.L., Bagul, A.H.B.P., Din, S.A.M., 2015. The influence of community attachment and community involvement towards resident's support on sustainable tourism development by mediating perceived benefits and perceived costs. American-Eurasian J. Agric. Environ. Sci. 15, 133–138.
Snyman, S., Bricker, K.S., 2016. Living on the edge: benefit-sharing from protected area tourism: Guest Editors. J. Sustain. Tour. 24 (10), 1480–1481.
Stern, P.C., Dietz, T., 1994. The value basis of environmental concern. J. Soc. Issues 50 (3), 65–84.
Stern, P.C., Dietz, T., Kalof, L., 1993. Value orientations, gender and environmental concern. Environ. Behav. 25 (5), 322–348.
Sudbury-Riley, L., Kohlbacher, F., 2016. Ethically minded consumer behavior: Scale review, development and validation. J. Bus. Res. 69, 2697–2710.
Tam, K.P., 2013. Dispositional empathy with nature. J. Environ. Psychol. 35, 92–104.
Tarrant, M., Dazeley, S., Cottom, T., 2009. Social organization and empathy for outgroup members. Br. J. Soc. Psychol. 48, 427–446.
Thompson, S.C.G., Barton, M.A., 1994. Ecocentric and anthropocentric attitudes toward the environment. J. Environ. Psychol. 14 (2), 149–157.
Tucker, H., 2016. Empathy and tourism: Limits and possibilities. Ann. Tour. Res. 57, 31–43.
Tufeiru, A., 2014. The nexus of female capital and north-south labor migration in Ghana: A potential remedy from microfinance. J. Dev. Soc. 30 (1), 91–114.
United Nations Environment Programme and World Tourism Organisation, 2005. Making Tourism More Sustainable: A Guide for Policy Makers. UNEP & WTO, Madrid.
Uysal, M., Jurowski, C., Noe, F.P., McDonald, C.D., 1994. Environmental attitude by trip and visitor characteristics: US Virgin Islands National Park. Tour. Manag. 15 (4), 284–294.
Verhofstadt, L.L., Buysse, A., Ickes, W., Davis, M., Devoldre, I., 2008. Support provision in marriage: the role of emotional similarity and empathic accuracy. Emotion 8 (6), 792–802.
Vermeir, I., Verbeke, W., 2006. Sustainable food consumption: exploring the consumer "attitude – behavioral intention" gap. J. Agric. Environ. Ethics 19 (2), 169–194.
Westland, J. C. (2012). Erratum to lower bounds on sample size in structural equation modeling [Electron. Commer. Res. Appl. 9(6) (2010) 476-487]. Electron. Commer. Res. Appl., 11(4), 445.
White Jr., L., 1967. The historical roots of our ecologic crisis. Science 155 (3767), 1203–1207.
Wilson, T.D., Lindsey, S., Schooler, T.Y., 2000. A dual model of attitudes. Psychol. Rev. 107 (1), 101–126.
World Conservation Union, 1996. Indicators for Sustainable Development Framework and Methodologies. World Conservation Union, New York.
World Tourism Organisation, 2006. Poverty Alleviation Through Tourism: A comPilation of Good Practices. World Tourism Organisation, Madrid.
Wu, S.–.T., Chen, Y.-S., 2016. Examining eco-environmental changes at major recreational sites in Kenting National Park in Taiwan by integrating SPOT satellite images and NDVI. Tour. Manag. 57, 23–36.
Xu, F., Fox, D., 2014. Modelling attitudes to nature, tourism and sustainable development in national parks: a survey in China and the UK. Tour. Manag. 45, 142–158.
Yilmaz, O., Harma, M., Bahçekapili, H.G., Cesur, S., 2016. Validation of the moral foundations questionnaire in Turkey and its relation to cultural schemas of individualism and collectivism. Personal. Individ. Differ. 99, 149–154.
Yzerbyt, V., Dumont, M., Wigboldus, D., Gordijn, E., 2003. I feel for us: the impact of categorization and identification on emotions and actions tendencies. Br. J. Soc. Psychol. 42, 533–549.
Zhang, W., Goodale, E., Chen, J., 2014. How contact with nature affects children's biophilia, biophobia and conservation attitude in China. Biol. Conserv. 177, 109–116.