Moving from conceptualization to methodology in tourism behavioural geography: the case of COP17

K. Moodley, Dr V. Moodley * & Dr Sershen
University of KwaZulu-Natal, Durban
South Africa
Email Moodleyvd@ukzn.ac.za

Corresponding Author*

Abstract

Conceptualizing a research study and selecting the appropriate conceptual framework and methodology in the research design is a challenging process. This paper offers some insights on formulating a conceptual framework and the associated methodologies for social science-based tourism research using an investigation on the environmentally responsible behaviour of delegates at COP17 (held in Durban, South Africa in 2011), as a case study. When using different bodies of knowledge to understand the behaviour of tourists, it is imperative that the problem under investigation be properly conceptualised. This paper explains the way in which this conceptualisation can lead to an appropriate methodology, embodying research design, philosophical approaches, methods and techniques. The paper goes on to discuss how conceptual frameworks can assist in understanding causal connections; provide theoretical clarification; provide focus on the methods and assist in evaluation and interpretation of social reality. The case study adopted a research design that used a mixed-method, cross-sectional approach, and positivistic and phenomenological philosophies to address the complex issues surrounding the behaviour of delegates (tourists). A structured questionnaire, using purposive and systematic sampling was used to obtain primary data. Various socio-psychological models, concepts and theories were then drawn on to assess the relationship between socio-demographic variables, knowledge, attitudes/ perceptions and behavioural practices of delegates at COP17. Via an appraisal of the case study the current contribution shows that even though conceptualizations and methodologies for such studies will vary across studies, the link between theory, research design and empirical data should be maintained throughout the research process.

Key words: conceptualizing research; environmentally responsible behaviour, methodologies, tourism

Introduction

It is becoming increasingly important to understand tourist perceptions and behaviour in the context of climate change (Gössling, Scott, Hall, Ceron & Dubious, 2012). To achieve this, the contextualization of tourism research, selection of methodologies employed and the research design process as a whole requires an appreciation of many different bodies of knowledge. When using different bodies of knowledge to understand the behaviour of tourists, it is imperative that the problem under investigation is properly conceptualised. The current contribution reviews the theory governing conceptualization and methodology used in tourism studies on pro-environmental behaviour. Furthermore, the paper explains how conceptualisation can lead to an appropriate research design, embodying philosophical approaches, methods and techniques. This is done using a case study (published in Moodley & Sershen, 2014; 2015) which investigated the environmental knowledge and behaviour of delegates at the Conference of the Parties 17 (COP17)

to the United Nations Framework Convention on Climate Change. The case study considers the conference in the context of Meetings, Incentives, Conferences and Exhibitions (MICE) tourism. It is unique, in that it investigated delegates to a climate change conference as tourists, and in this way differs from studies focusing on vacation tourists. Additionally, it investigated delegate (tourist) behaviour at an environmentally-focussed mega-event in the developing world.

Climate is changing, with global temperatures increasing due to human activities that have led to an increase in atmospheric greenhouse gas concentrations (World Tourism Organization and United Nations Environmental Programme [WTO and UNEP], 2008), particularly carbon dioxide (CO_2) (McKercher, Prideaux Cheung & Law, 2010). This change in climate and climate variability has a definite and substantial influence on the tourism sector (Hamilton, Maddison & Tol, 2005; Sookram, 2009) and is one of the major challenges to the sustainability of tourism in this century (Scott & Becken, 2010). Amongst other things, it impacts on the attractiveness of destinations and flow of tourists (Hernandez & Ryan, 2011) and "…actions must be undertaken in order to manage the impacts and to guarantee the sustainability of the tourism activity in the long term (Hernandez & Ryan, 2011:81). According to McKercher *et al.* (2010), these actions include tourists undertaking environmentally friendly behaviour, reducing their carbon footprints to preserve natural, social and cultural environments and decreasing other the impacts of their travels. When discussing the relationship between tourism and climate change, the responsible behaviour of tourists in time and space and the "different sites of consumption" (Barr, Shaw & Coles, 2011:1234) must be considered, since "…changing consumer behaviour may represent the greatest challenge in reducing tourism's carbon footprint in the short-to-medium term" (McKercher *et al.*, 2010:13). It is therefore vital that tourism research focuses on obtaining information on tourist perceptions of climate change (Scott & Becken, 2010) and behavioural impacts at destinations to take action and alleviate the threats posed by tourism.

In attempting to conceptualize the problem addressed in the case study on the attitudes, perceptions and environmental behaviour of delegates at COP17, diverse literature on sustainable development, sustainable tourism, responsible tourism, pro-environmental behaviour and behavioural theories were used to formulate a conceptual framework showing the causal connections between different variables influencing environmentally responsible behaviour. A conceptual model offers insights into the research conducted and provides the basis for the methodology, empirical analysis and evaluation. The case study addressed the following research questions:

- What is the socio-demographic profile of delegates?
- What were the determinants of delegate choice of accommodation (e.g. distance from the event location and environmental best practices at accommodation)?
- Are delegates' attitudes, perceptions, behaviour and knowledge on environmental issues as a tourist determined by their socio-economic status (such as age, gender and education)?
- What is the relationship between delegates' knowledge on environmental issues and their environmentally responsible behaviour?
- How does the environmentally responsible behaviour of delegates compare between travelling and that at their places of origin?

This conceptual and methodological paper is divided into the following sections: literature review (which reviews models and theories), conceptualization of the study, methodology, results and discussion, and the conclusion.

Literature review

Before reviewing the models and theories governing tourist environmental behaviour there are essentially three terms that need clarification, viz. concepts, frameworks and conceptual framework.

Concept

Jabareen (2009:50) provides a good description of the different aspects of a concept. He states that concepts have a history; are "defined by its components"; have parts from other concepts; "relate back to other concepts"; is "created by something" and must be "understood relative to its own components, to other concepts, to the plane on which it is defined, and the problem it is supposed to resolve."

Framework

A framework is defined as "structure, upon or into which casing or contents can be put" (Fowler & Fowler, 1964:484). Eisenhart (1991) states that a framework is used to support or enclose research investigations and distinguishes among three kinds of frameworks, namely, theoretical, practical and conceptual, with the first relying on formal theory, whilst the practical framework is used by practitioners to solve practical problems. The conceptual framework is discussed below.

Conceptual framework

According to Svinicki (2010) the purpose of a conceptual framework is to understand the causal connections between different components such as concepts, knowledge, ideas or events. Miles and Huberman (1994) state that it is the main things studied comprising concepts, key factors and the relationships that exist between them. Similar ideas are echoed by Blaxter, Hughes and Tight (1996) and Glatthorn (1998) who aver that the conceptual framework provides focus and defines the research territory, methods and theories and shows their relationships. The way in which events are interpreted is influenced by the conceptual framework (Svinicki, 2010; Leshem & Trafford, 2007). Additionally, a conceptual framework provides theoretical clarification on the researcher's intentions and clarity to the reader on what and how research is to be achieved (Leshem & Trafford, 2007). Maxwell (2005:33) considers a conceptual framework as "…the system of concepts, assumptions, expectations, beliefs, and theories that supports and informs your research…" In Jabareen's (2009) opinion it is a construct where an integral role is played by concepts, providing an interpretative approach and understanding of social reality. Moreover, it is "…an argument that the concepts chosen for investigation or interpretation, and any anticipated relationships among them, will be appropriate and useful, given the research problem under investigation" (Eisenhart, 1991:209).

With reference to the definitions given above, it is clear that conceptualizing a research problem is not a simple task but a complex issue (Porta and Keating, 2008). Generally, according to Rossman and Rallis (2016) a conceptual framework is a working understanding of the topic, setting and situation that connects to concepts and theories and is a significant step in the entire research process forming the basis of a research study. The forms of conceptual frameworks differ (Holweg & van Donk, 2009) but there are two general forms that Miles and Huberman (1994) forward:

graphical and narrative. Holweg and van Donk (2009) build on these two forms and identify descriptive mind-maps, relational frameworks, causal frameworks, venn diagrams and narrative frameworks as additions. Following Holweg and van Donk (2009) the relational framework which focuses on the main variables of interest, was utilised in the case study.

Pro-environmental behaviour

According to Moodley and Sershen (2014; 2015) both direct and indirect environmental influences and practices are influenced by pro-environmental behaviour such as environmentally responsible behaviour (ERB). According to Cheng, Wu and Huang (2012:4-5) individual or group concerns and actions to "…minimize damage to the environment and promote environmental protection" is referred to as ERB. Lee, Jan and Yang (2013) cite various definitions of ERB by Sivek and Hungerford (1990), Axelrod and Lehman (1993), Kollmuss and Agyeman (2002) and Meijers and Stapel (2011) which focus on individuals or groups remedying environmental problems; taking conservation actions; minimizing negative impacts and considering future consequences of their actions by behaving sustainably. Cheng *et al*. (2012) contend that those people who have a firm commitment to the environment and have ERB traits will behave responsibly to reduce environmental impacts.

Approaches to pro-environmental behaviour

In tourism research, the attitude-behaviour model has been commonly used to determine peoples' environmental attitudes, especially their environmentally responsible behaviour (Lee *et al.*, 2013). However, Liebe (2010) contends that it is possible to extend, compare and combine different theories but research results from comparative studies will differ from those using individual theories because of the use of different measurement instruments and statistical techniques. Two theoretical models on behaviour, one socio-psychological and the other environmental will be discussed below as the conceptual framework in the case study, uses elements of both. The first is the theory of reasoned action (TRA) and the second, the value, belief norm (VBN) theory. The TRA by Ajzen (1991) has been commonly used in behavioural studies (Fig.1) and was later modified into the theory of planned action (Fig. 2)**.** It has been used in research investigations in its original form and sometimes modified by researchers from various disciplines (Reid, Sutton and Hunter, 2010).

In discussing the TRA, Reid *et al*. (2010:312) state that "an intention to undertake behaviour is the immediate determinant of the behaviour." Liebe (2010:141) summarises the TRA very simply by stating that:

> In the basic model, the attitude toward the behaviour (e.g. taking the bus or car), the subjective norm (normative expectations of reference individuals/ groups), and the perception of behavioural control (potential impediments/ obstacles) determine the behavioural intention, which in turn explains the behaviour (in addition to behavioural control having a direct effect on that behaviour).
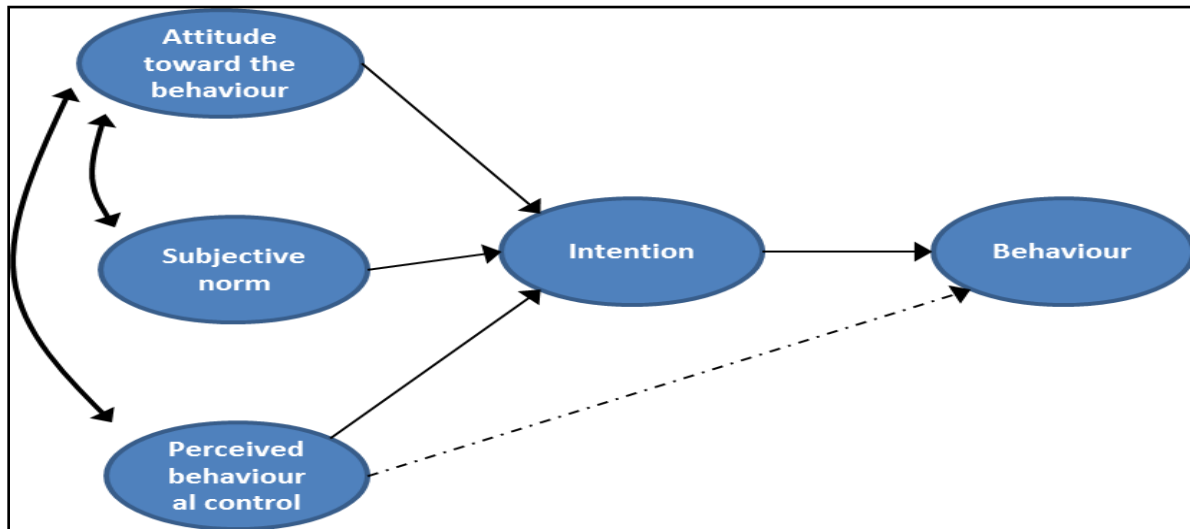
Figure 1: Theory of reasoned action (Ajzen, 1991:182)

Two factors determine intentions and these are personal attitudes to performing a behaviour and subjective norms (Stanford, 2006). According to Stanford (2006:73), personal attitudes to performing a behaviour are determined by the "…individuals beliefs that a given action will produce positive or negative outcomes" and subjective norms are perceptions by an individual that he/she is pressurised by others (example parents or friends) to perform or not perform a certain behaviour.

In addition to personal attitudes and subjective norms, a third factor was added by Ajzen (1988), perceived behavioural control, which entailed perception of the difficulty of performing the behaviour based on past experience and anticipated obstacles (Stanford, 2006). The combination of the three factors were used to modify the TRA and extend it into the Theory of Planned Behaviour (TPB).
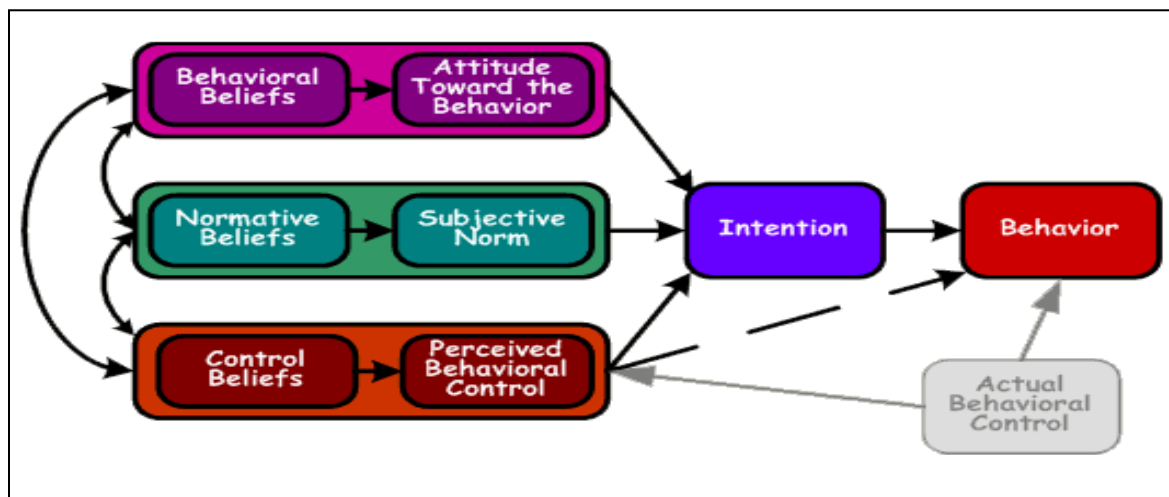

Figure 2: Theory of planned behaviour (Ajzen, 2006:1)

The constructs added in the TRB are based on underlying beliefs, such as an individual complying with other peoples' wishes (Wall, Devine-Wright & Mill, 2007). Individual beliefs in the TPB are

influenced by behavioural beliefs, normative beliefs and control beliefs (Ajzen, 2006). Reid *et al.* (2010:314) contend that perceived behavioural control (PBC), in theory, allows for prediction of behaviour that "…is not under volitional control." Additionally, the PBC differentiates between the TRA and TRB and moderates the influence of behavioural intentions (Wall *et al.*, 2007).

Commenting on the TRB, Luo and Deng (2008) argue that individual behaviour is dependent on the intention to perform that behaviour. This is dependent on three factors which are: attitude towards the behaviour, subjective norms by others concerning the behaviour and an individual's perception on whether the behaviour can be performed. In a similar vein, Tsai (2010) avers that attitudes, subjective norms and perceived behavioural control determine behaviour. These factors could be used "…to predict the probability of a successful behaviour attempt" (Tsai, 2010:221).

Studies using TRA, try to predict an individual's behaviour to understand behavioural intentions, attitudes to behaviour and subjective norms and have found that there seems to be a link between the above mentioned variables (Reid *et al.*, 2010). Moreover, favourable attitudes and subjective norms strengthen intentions to perform certain behaviour (Reid *et al.*, 2010). Those persons who have positive environmental beliefs or attitudes are more likely to engage in environmentally friendly behaviour (Luo & Deng, 2008). However, constraining factors beyond an individual's control (subjective norms in the TRA) may also influence behaviour. These factors include a belief by an individual that important others such as a friend or family believe that they should perform certain behaviour (Reid *et al.*, 2010). However, Reid *et al.* (2010) conclude that social and cultural influences are difficult to measure and are weak in predicting behaviour.

Studies using TPB show a relationship between behaviour intentions and pro-environmental behaviour. For example, a study conducted by Liebe (2010 cited in Liebe, Preisendorfer and Meyerhoff, 2011:149) found that individuals are willing to pay (behavioural intention) to protect biodiversity on a regional level. Moreover, "individuals with a high level of consideration of future consequences had a stronger relationship between perceived social consequences and pro-environmental intentions" (Liebe *et al.*, 2011:149).

In the context of behaviour, Stern (2000:411) defines environmentalism "…as the propensity to take actions with pro-environmental intent." By using theoretical accounts from the literature, Stern (2000) developed a value-belief-norm (VBN) theory of environmentalism that links personal values (altruistic), New Environmental Paradigm (NEP) (Ecological worldview), adverse consequences for valued objects (AC), perceived ability to reduce threats (AR) about conditions in the biophysical environment, and personal norms for pro-environmental action (Fig. 3). Stern (2000) considers the VBN theory to be the best to explain ecological behaviours and this is one of the reasons for its use in conceptualizing the present case study on tourist behaviour.

Stern (2000:413) states that:

> Each variable in the chain directly affects the next and may also directly affect variables farther down the chain. Personal norms to take pro-environmental action are activated by beliefs that environmental conditions threaten things that the individual values (AC) and that the individual can act to reduce the threat (AR). Such norms create a general predisposition that influences all kinds of behaviour taken with pro-environmental intent.
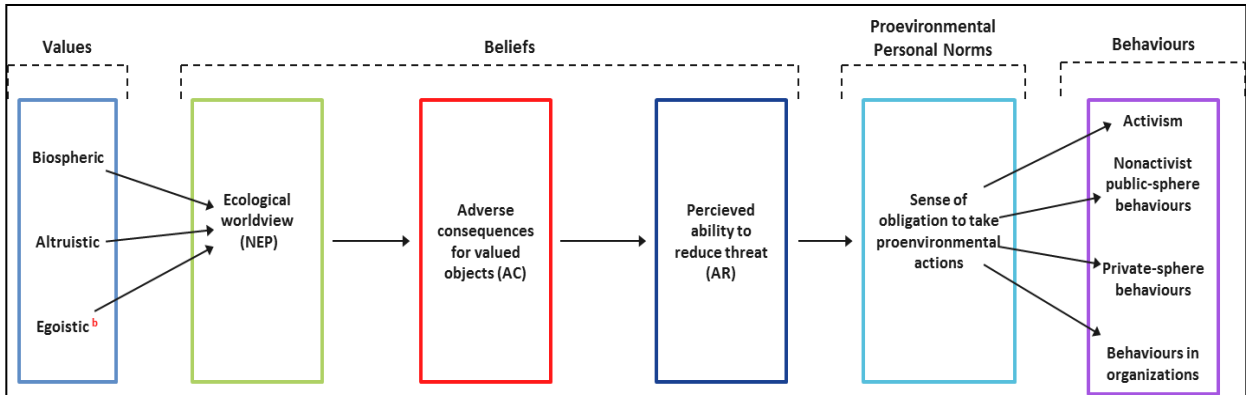
Figure 3: A schematic representation of variables in the VBN theory of environmentalism (Stern, 2000:412)

Variables influencing pro-environmental behaviour

Barr (2003:227) concluded that "environmental action is influenced by a range of factors" that include education, knowledge, values, situation and psychology. Similarly, Mensah (2012) suggested that environmental education is important to preserve and improve the environment. These aspects are discussed below briefly.

Environmental education and knowledge

Environmental education provides knowledge necessary for ERB (Mensah, 2012). The sole purpose of environmental education is to shape human behaviour and change the behaviour of individuals by educating them on the environment and provides individuals with educational material on environmental issues to shape their minds to think and react in a more environmentally friendly manner (Hungerford & Volk, 1990). Environmental education is, therefore, vital for responsible tourism to occur because it provides knowledge that shapes tourist behaviour.

Fryxell and Lo (2003 cited in Lee, Choi, Kim, Ahn and Katz-Gerro, 2012:8678) define environmental knowledge as "…general knowledge of facts, concepts and relationships concerning the natural environment and its major ecosystems." Knowledge governs behaviour (Robelia & Murphy, 2012) and increased subjective knowledge about the environment will change environmental attitudes and concerns (Lee *et al.*, 2012). De Chano (2006) found a direct relationship between pro-environmental behaviour and knowledge. People who have more environmental knowledge are more sympathetic to environmental problems and are more likely to engage in ERB (Weaver, 2002; Thapa, Graefe & Meyer, 2005; Mensah, 2012). A significant positive relationship was found to exist between environmental education and certain ERBs (Mensah, 2012). However, Kuhlemeier, Bergh and Lagerweiij *et al.* (1999) found a weak relationship between environmental knowledge, attitudes and behaviour and concluded that it is the sacrifices individuals' made that have more impact than their attitudes.

Relationship between knowledge and action

Environmental action is influenced by many factors such as social values, situational factors and psychological variables (Barr, 2003). Environmental values are the basic criteria that are used by people to justify their actions (Barr, 2003). Barr (2003:229) argued that the value continuum of an

individual ranges from "egoistic" to "altruistic" and from "conservative" to "open to change" and environmental behaviour is more likely to be practiced by those individuals who are altruistic and open to change.

Situational factors such as access to services, socio-demographic variables and knowledge and experience also impact pro-environmental behaviour (Barr, 2003), with behaviour increasing with greater access (Guagnano, Stern & Dietz, 1995; Barr, 2003). A number of variables such as age and sex influence environmental action (Barr, 2003) but contrary findings have been reported by Hines, Hungerford and Tomera (1987) and De Oliver (1999).

In terms of knowledge and action, two types of knowledge from a socio-psychological perspective have been identified by Schahn and Holzer (1990) and Barr (2003). These relate to knowledge that is concrete or abstract. Concrete knowledge is knowledge related to behaviour that can be used and acted upon, while abstract knowledge is about environmental issues such as environmental problems and their causes (Schahn & Holzer, 1990; Barr, 2003).

Environmental behaviour according to psychological variables is impacted by a person's personality and perception (Barr, 2003). Social scientists such as Dunlop and Van Liere (1978), Hopper and Nielsen (1991) and Barr (2003) contend that benefiting others by one's action without personal benefit determines environmental action and this type of behaviour is termed altruistic. Social pressure and the influence of the behaviour of others also affects environmental action (Barr, 2003). Moreover, behaviour is impacted on by environmental threats such as climate change which motivates individuals to change their behaviour and take environmental action to try and lessen the problem (Segun, Pelletier & Hunsley, 1998; Barr, 2003).

Difficulties and complexities in ERB studies

There are numerous difficulties associated with attempting to show the relationship between ERB and knowledge of the environment in empirical studies. On reviewing studies on peoples' environmental knowledge and their ERB, Mensah (2012) found conflicting results. For example, the author cites Kollmuss and Agyeman (2002) who found that although knowledge of environmental problems raises concerns for the environment, this was not enough to lead to ERB. The review also identified demographic variables as well as external (institutional, economic, social and cultural) and internal factors (motivation, environmental knowledge, awareness, values, attitudes, emotion, responsibilities and priorities) that shaped ERB (Mensah, 2012). A similar argument is offered by Robelia and Murphy (2012) who agree with other researchers such as Bamberg and Moser (2007) that although knowledge is important it cannot alone determine pro-environmental norms and values. They conclude that in addition to knowledge, various other factors should be considered. In terms of socio-demographic factors influencing behaviour, the findings of Uysal and Jurowski (1994), Formica and Uysal (2002) and Zografos and Allcroff (2007) revealed demographic variables to not be significantly related to environmental behaviour.

Mensah (2012) refer to a study conducted by Hanna (1995) who used the TRA in concluding that preceding factors such as past experience and demographic factors interacted with knowledge that individuals possessed in determining ERB. This made their attitudes more favourable and their behaviour more responsible towards the environment (Mensah, 2012). Moreover, another aspect that should be considered is the previous experiences of tourists which led to the accumulation of knowledge that shapes behaviour. This is clearly reflected in the comments made by Orams

(1997:295) that "one of the arguments commonly used to justify nature-based tourism is that through such experiences, tourists adopt more environmentally responsible attitudes and behaviour." Mensah (2012) argues that intention and a desire to act together with prior knowledge was most likely to lead to environmental action. Moreover, Tubb (2003) found that environmental education or interpretation positively influenced a tourist's environmental attitude.

In contrast to the above mentioned conclusions, another point that social scientists discuss in the literature is awareness. For example, Lee and Mascardo (2005) are of the opinion that pro-environmental behavioural intentions are displayed more by those consumers who are more aware. According to Miller, Rathouse, Scarles, Holmes and Tribe (2010), having information on environmental issues should create awareness of the problem and this should lead to appropriate behavioural change. However, as Jackson (2004 cited in Miller *et al.*, 2010:629) states, "...information alone does not necessarily lead to increased awareness and increased awareness does not necessarily lead to action."

Moral obligation also influences behaviour and research undertaken by Berenguer, Corraliza and Martin (2005) show that moral obligation is a strong predicator of environmentally friendly behaviour. Moreover, Dolnicar and Leisch (2008:384) stated that "…moral obligation appears to be the only construct that has been consistently found to be predictive, as opposed to many attitudinal or socio-demographic measures that have led to contradictory findings." Those authors also found relationships between socio-demographics and pro-environmental behaviour to be inconsistent; for example, tourists with low ecological footprints are not limited by variables such as age or wealth. These scientists comparatively assessed pro-environmental behaviour at home and on vacation and revealed that there was more pro-environmental behaviour at home since people feel obligated to behave in this manner at home, because the infrastructure differed from that of tourist destinations. They interpreted this finding as being related to higher moral obligation at home and this moral obligation could not be transferred because of the difference in the availability of infrastructure (Dolnicar & Leisch, 2008). There could, however, be a "spill-over" effect whereby commitment to the environment in one setting may lead to a similar commitment elsewhere (Barr *et al.*, 2011:235). It is, therefore evident from the arguments reviewed above that the factors influencing environmental behaviour are complex, context-specific and impossible to describe in terms of any one model (Robelia & Murphy, 2012).

Environmental concerns

An important component of pro-environmental or ERB based on an individual's beliefs is concern for the environment (Lee *et al.*, 2012). In their review on environmental concerns Lee *et al.* (2012) concluded that environmental concerns impact behavioural practices such as being ecologically responsible, changing habits or purchasing greener products to alleviate environmental problems. However, they found that few individuals are willing to make sacrifices in their lifestyles although they may express environmental concerns. The results of their study indicate that behaviour that led to conservation measures that impact on the environment are recycling, using public transport, paying more for ecologically friendly products and purchasing green products. Furthermore, the study found a direct positive influence on preference behaviour and an indirect positive effect on behaviour regarding green product use and disposal.

Conceptualizing the study

The overarching philosophical approach of the case study is political ecology. Within this approach, sustainable tourism, events tourism, responsible tourism and the behavioural theories were used as a basis for analysing and evaluating the empirical data obtained (Moodley & Sershen, 2014; 2015). A brief discussion of political ecology will therefore be undertaken below. According to Greenberg and Park (1994:1), political ecology is:

> a historical outgrowth of the central questions asked by the social sciences about the relations between human society, viewed in its bio-cultural-political complexity, and a significantly humanized nature.

The political ecology approach has been applied frequently to assess the condition of "human-environmental actions, especially those associated with economic development in the Third World" (Stonich, 1998:28). Political ecology helps understand how political and ecological factors interact with each other, from a local or global level, to examine cause an effect relationships on environmental and social change (Stonich, 1998). In the social sciences ecological ideas have been applied for a long time to investigate the position of human populations in relation to ecology (Stonich, 1998).

The political and ecological factors and their interactions at local and global levels took place at COP17. Delegates at these COP meetings representing governments, civil society and other interested parties make decisions and political statements on sustainable development that have a global impact. The outcomes of these meetings may have an influence on future events. At this point, it is useful to reflect on the problem under investigation which is the attitudes, perceptions and environmental behaviour of delegates at COP17. The study attempted to determine whether there were any relationships between socio-demographic variables of delegates, their attitudes and perceptions, knowledge and environmental behavioural practices using a multidisciplinary perspective. Attitudes, perceptions and behaviour of tourists are complex social phenomena, especially when studied using different bodies of knowledge. In attempting to conceptually map and set the boundaries (Miles & Huberman, 1994; Coughlan, Cronin & Ryan, 2007) that guided the case study, various themes and concepts identified previously are drawn on. Coughlan *et al.* (2007) substantiate this approach by stating that a sound conceptual framework identifies the relationships between various themes and concepts. It should be also noted that the framework takes into consideration two-way causal interactions at almost all the stages.

The conceptual framework presented graphically in Figure 4, takes as its starting point an event (COP17) that attracted numerous international and local delegates. These delegates are essentially tourists who may behave responsibly, that is pro-environmentally, having a positive impact on the environment or engage in irresponsible environmental behaviour that have negative impacts. These behaviours are influenced by causal socio-psychological variables such socio-demographic characteristics, awareness, concerns and moral obligation which may be apparent by their attitudes and perceptions as suggested by a number of studies cited earlier. With reference to the literature reviewed thus far, behaviour of tourists will influence sustainable tourism, having short and long term impacts on sustainable development, initially at a micro level but which will eventually compound to be a macro and global problem. Negative or positive environmental impacts through tourist behaviour will eventually influence MICE and future event tourism, either increasing or decreasing it and influencing policy formulation and management strategies for

tourism. This will impact on future tourists by influencing their socio-psychological composition and future visits to events.
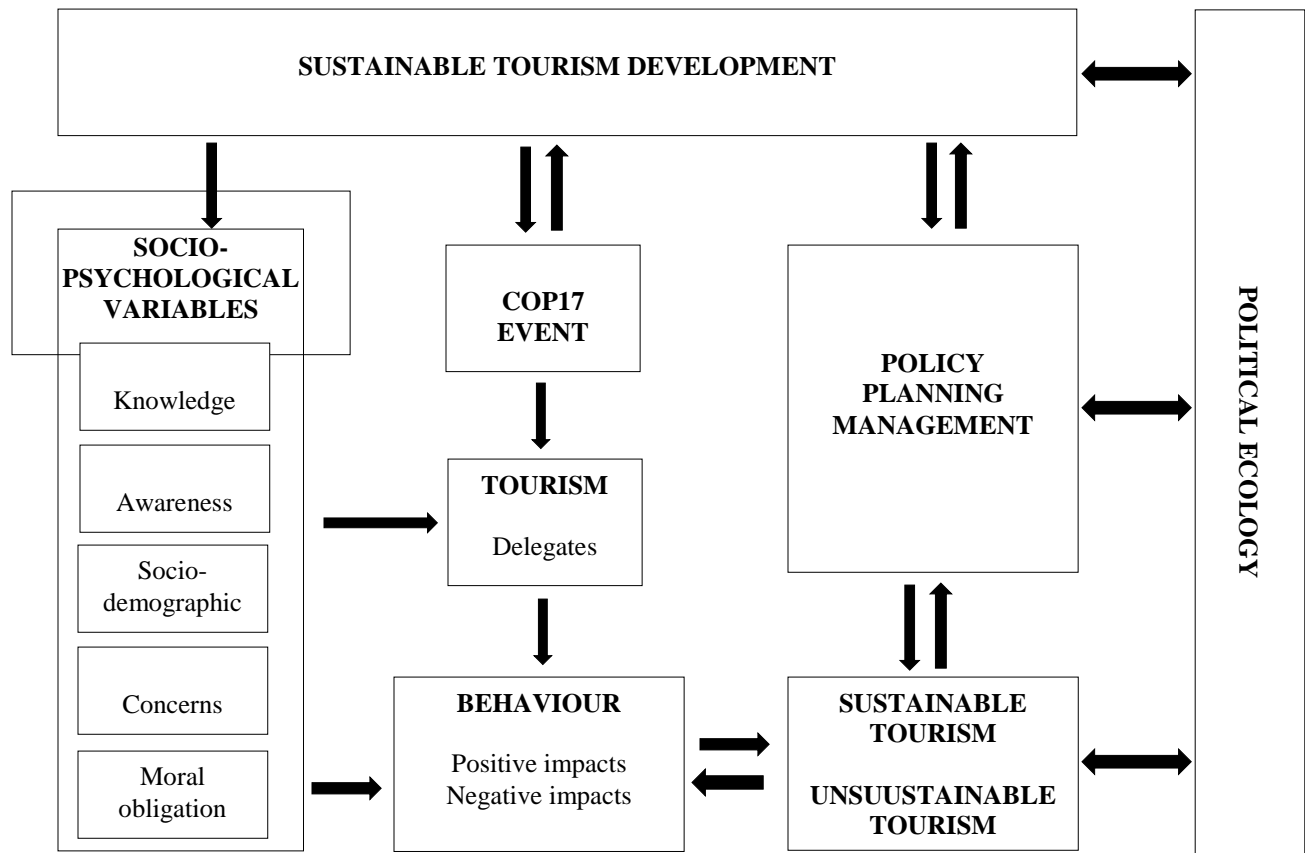
Figure 4: Conceptual framework of case study (Adapted from Moodley, 2013:43)

Methodology

Given the nature of the research conducted in the case study, a wide range of methods and techniques were utilized. In the case study primary data was gathered using a questionnaire and a survey. Secondary data was mainly obtained from academic (articles, chapters in books, books, etc.), internet and other sources.

The study population comprised of delegates and civil society attendees at COP17. Non-probability, purposive and systematic sampling techniques was utilized. Attendance at the COP17 meeting comprised of 14 570 official and non-official delegates. The interview locations were open spaces and thus purposive and systematic sampling were employed. Interviewers purposively selected the first delegate that passed and subsequently selected every 15th delegate throughout the event duration. Interviews were conducted with conference attendees based on their affiliation as official delegates or civil society attendees. The sample selection was spatially based and had a geographical spread to avoid bias in selecting the target of 1 000 attendees; 525 official delegates and 475 civil society attendees were eventually interviewed.

SPSS version 21 was used to input the raw data and descriptive and inferential statistics were generated. Inferential statistics comprised of non-parametric tests including cross-tabulations and Pearson's chi-square tests to determine relationships between variables identified.

With the case study's methods and techniques in place, the conceptual and theoretical basis of these are discussed below. The research questions posed in the case study attempted to answer questions from the empirical data obtained in terms of a multi-conceptual theoretical framework spanning the social-psychological, geographical, tourism, environmental and other social science disciplines using mixed-methods. This section begins with a discussion of research design with specific emphasis on three research methodologies, i.e. qualitative, quantitative and mixed-methods, the underlying philosophical approaches and their role in this research.

Research design

The meaning and interpretation of research design may differ across studies but according to Harwell (2011) methodology which includes data collection and analysis is referred to as research design. Other studies consider the entire research process starting from conceptualizing the research problem, literature review, research questions, methods and conclusions (Harwell, 2011:148). Hussey and Hussey (1997) concur with this view by stating that the theoretical background to the study, data collection and analysis in the research process is called the research design. Cooper and Schindler (2008) also state that research design is the blueprint for fulfilling the objectives of a study, collecting and analysing data and answering the research question(s). The foundation of any research are the questions that are posed and this informs the main features of a study (Harwell, 2011). According to Saunders, Lewis and Thornhill (2006:72) research design should help the researcher make informed decisions about choosing a research methodology (data collection and analysis) and the appropriate methods for the research.

Crotty (1998, cited in Harwell, 2011:148) state that the four features of research design are epistemology informing research, philosophical stance of methodology, methodology and techniques and procedures in the research design to collect empirical data. Methodology according to Cooper and Schindler (2008) is the overarching approach to the research. Additionally, the methodology used depends on the choice of paradigm (Hussey & Hussey, 1997) and the research questions to be answered. An additional component in research design is the literature review which provides a background to understanding the research problem. The conceptual basis of the case study, derived from the literature review, was instrumental in giving direction to the empirical aspects of the study. As mentioned previously, the empirical aspects of this research utilized a case study of COP17 delegates who were interviewed whilst undertaking a survey. Some of the aspects related to research design are discussed further below.

Philosophical paradigm and approach

According to Guba and Lincoln (2005), three branches of philosophy, viz. ontology, epistemology and methodology explain the axiom of knowledge. This process is driven by research paradigms (Guba & Lincoln, 2005). A brief description of these concepts is given below as they form the basis of any research undertaking.

- Paradigm: "a stable consensus about the aims, shared assumptions and practices of a particular discipline" (Cloke, Crang & Goodwin, 2005:606). The term is regularly used in a looser sense to refer to general approaches, theoretical frameworks and methodologies held by groups within disciplines such as geography (Cloke *et al.*, 2005).
- Ontology: is concerned with the realities that are studied by researchers (Mason, 2002).
- Epistemology: is a technical term from philosophy and is the study of knowledge (Cloke *et al.*, 2005). It simply refers "to differing ideas about what it is possible to know about the world and how it is possible to express that knowledge" (Cloke *et al.*, 2005:606). This knowledge, according to Bryman and Bell (2007) can be obtained through imitation of the principles, procedures and ethos of the natural sciences.

Mason (2002) states that a researcher's ontological and epistemological position guides the research and the methodology utilized. In order to demonstrate this entire research process, the work of Saunders *et al.* (2006) who model this as an 'onion' is used. This is indicated in the Figure 5 below.

In terms of the case study, the following was adopted:

- A positivistic and phenomenological philosophical approach that was both inductive and deductive
- Survey and case study
- Mixed-method (quantitative and qualitative) and
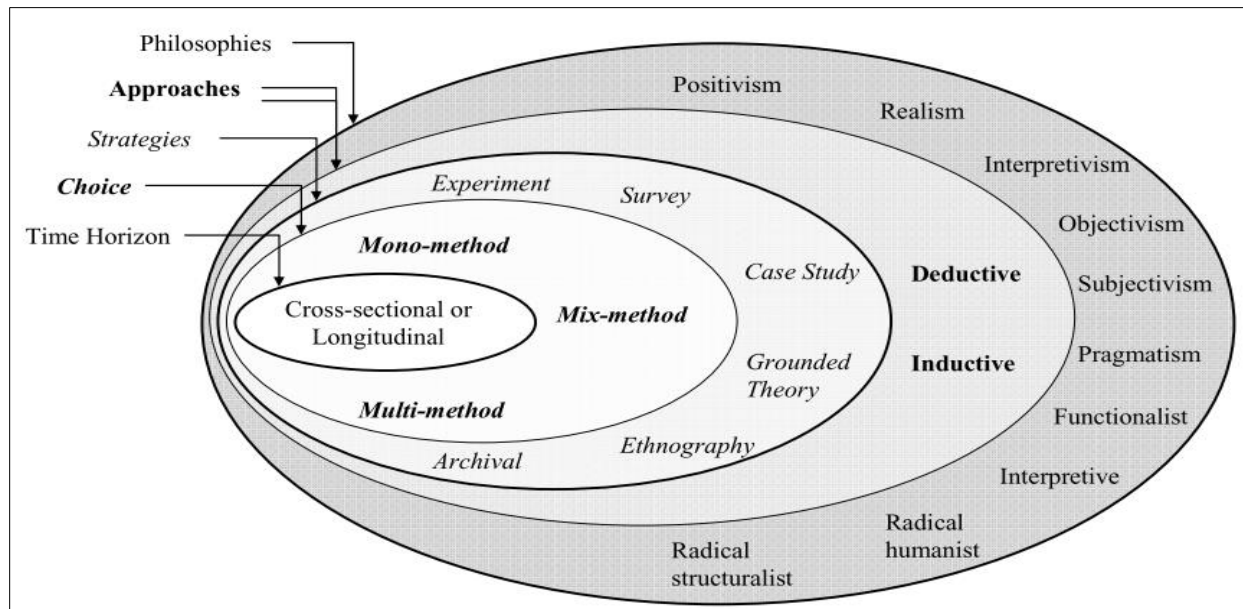- A cross-sectional study

Figure 5: Research Onion (Saunders *et al.*, 2006:32)

Mixed-method: quantitative and qualitative methodologies

Kohlbacher (2006:1) avers that "…there has been an on-going debate on the appropriateness of different approaches and methods in social research. It is evident that both approaches have their

advantages and one approach compliments the other and researchers are exploiting the advantages of both approaches leading to the use of mixed-methods (Bryman, 2004; Kohlbacher, 2006). Using mixed-methods provides insights which cannot be obtained from using one method alone (Johnson & Turner, 2003). Moreover, combining the two methods offers the advantage of offsetting biases, utilizing the strengths of each and compensating for weaknesses of each method (Greene, 2007).

According to Denzin and Lincoln (1998:3) qualitative research is about studying "… things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them." Qualitative research has varying research designs with no universal categorization (Harwell, 2011). Creswell (2003) has identified five strategies of inquiry, viz. narratives, phenomenological studies, grounded theory studies, ethnographies and case studies.

Quantitative research is to be objective and replicate, generalize and predict from research findings using instruments such as surveys and testing (Harwell, 2011), and producing objective and unbiased results in the form of numbers (Hussey & Hussey, 1997) or the production and analysis of numerical data (Cloke *et al.*, 2005). In terms of the underlying philosophical background of these approaches, it is evident that quantitative and qualitative methodologies are related to two principal research paradigms, positivism (quantitative) and phenomenology (qualitative) (Mangan, Lalwani & Gardner, 2004).

Cross-sectional studies

According to Cooper and Schindler (2008) and Bryman and Bell (2007), cross-sectional studies are carried out at one point in time with an examination of relationships between variables. The survey of COP17 delegates was undertaken during the course of the event for a limited period and is thus cross-sectional.

Triangulation

Triangulation is the use of different research approaches, methods and techniques in the same study to overcome potential bias caused by using a single method (Hussey & Hussey, 1997). Easterby-Smith, Thorpe and Lowe (1991) describe four types of triangulation that include data, investigator, methodological and theoretical triangulation, with Hussein (2009) adding analysis triangulation. The case study used multiple triangulation, with most of the types mentioned above.

Case study

Any in-depth research on particular phenomena is called a case study (Gomm, Hammersley & Foster, 2000). According to Langley and Royer (2006:82), the entity under study "can be a person, a group, an organisation, a relationship, an event, a process, a problem or any other specific entity." Zainal (2007) states that a case study can explain the process and outcome of phenomena in a real life context. It has the advantage of using both quantitative and qualitative methods (Stake, 2000; Zainal, 2007).

Based on the classification types discussed in the literature (Stake, 2000; Yin, 1994; McDonough & McDonough, 1997), the present case study could either be classified as instrumentalist or a descriptive. Additionally, when discussing research methodology it is critical to clarify the linkages between philosophical approaches, paradigms, data collection methods and techniques. Therefore, the focus of the arguments developed above were not on methods and techniques alone but on research design because it forms a link between the theory that informs research and the empirical data collected (Nachmias & Nachmias, 2008). Following the ideas of Saunders *et al.* (2006) who consider design as providing guidance for all aspects of research, the design aspects in the case study, were a blueprint for the study.

Results and discussion

The intention of the case study was to investigate attitudes, perceptions and environmental behaviour of delegates at COP17. By conceptualizing the study and employing methodology used in tourism studies on pro-environmental behaviour the study generated quantitative and qualitative data. These data are fully reported in Moodley and Sershen (2014; 2015) but a brief discussion of the main findings of each of these studies, related to the present discussion on conceptualization and methodological issues, is undertaken below to demonstrate the value of using socio-psychological theories and models in tourism research.

Socio-economic characteristics

Foreign delegates at the event made up 67.6% and locals 32.2%. Most delegates (61.7%) were middle aged, between 35-49 years, with males being dominant (65%). The majority of delegates possessed postgraduate degrees (73.3%) with an average income of R50 727, ranging from R10 000 to over R200 000 per annum.

Accommodation choice and awareness of environmental best practices

In choosing accommodation, a significant proportion of visitor respondents (>67.4%) understood the importance of accommodation that gave due consideration to environmental issues and stayed at three star hotels, budget hotels, campsites and bed and breakfast and backpacker establishments. Length of stay in accommodation by most delegates was generally less than the 14 day duration of the event which suggests that COP17, unlike other events (e.g. sports events), did not generate substantial interest in other tourism products and activities in the host region.

A significant proportion of delegates were aware of several best practices at their accommodation, viz. conserving water, showering, use of local labour, conserving electricity and promoting green behaviour. The attitudes, perceptions and behaviour of delegates could be aligned to the values and beliefs indicated in Stern's (2000) VBN model on pro-environmental behaviour.

Distance stayed from event and transport mode

Distance of accommodation from the event was used as a responsible tourist variable to ascertain the importance placed by delegates on fuel saving and limiting environmental pollution. Most delegates travelled short distances by public transport with the average distance travelled to the

event being approximately 13 km. This indicates that some consideration was taken in terms of energy saving and curbing pollution. However, institutional or other external and situational factors could have also influenced the choice of accommodation in relation to the distance travelled to the event, which is line with the findings of Kollmus and Agyeman (2002) and Miller *et al.* (2010).

Knowledge of environmental issues

The results suggested that sustainable development and reduction of GHG emissions were issues on which delegates had a very good knowledge of, followed by slightly lower proportion of responses for managing water for human consumption and alternate energy sources. The rating of responses did not differ significantly, possibly because they were closely related and collectively instrumental in influencing the environmentally responsible attitudes and behaviour of delegates.

Environmental impacts of COP17 and intention to off-set carbon emissions

Delegates had a very high agreement with the following impact statement, namely: high levels of energy consumption, air pollution increase, solid waste increase, over-consumption of water, people learn more about conservation and taking care of the environment. This finding according to the authors could also be related to the positive environmental beliefs and attitudes of the delegates. Additionally, the authors explored the relationship between individual concern/ beliefs and pro-environmental behaviour by assessing the intentions of COP17 delegates to offset their carbon emissions created during their travels. They found that only about half the respondents had any intention to offset carbon emissions with only a minority having positive intentions in this respect and concluded that this situation could be attributed to greater concern with macro-level issues than individual impacts created by their attendance at the conference. However, those delegates who exhibited positive intentions towards pro-environmental behaviour intended to accomplish this directly or indirectly through any means possible. The authors suggested that the minority who had no intentions to offset carbon emissions may have positive intentions (attending the conference on climate change) but did not display these intentions by taking action.

Pro-environmental behaviour at home and whilst travelling

The study showed that the majority of delegates always practiced certain pro-environmental activities more whilst travelling than at home, including such activities as recycling, using water sparingly and electricity efficiently and purchasing more green fair trade products. These findings the authors conclude are contrary to previous studies (e.g. Dolnicar & Leisch, 2008) that found more environmentally responsible behaviour being practiced at home than at tourist destinations and attribute this to the type of delegates interviewed (i.e. those who have an obligation to act more responsibly) as compared to those on holiday.

Relationship between socio-demographic characteristics, knowledge and awareness, and environmental behaviour of tourists (delegates)

The authors found that only age was significantly related to a large number of behavioural practices especially at home and gender was significantly related to supporting green projects, education and recycling indicating that not all socio-demographic variables have a significant relationship to behavioural practices. De Chano (2006), Mensah (2012), Thapa *et al.* (2005) and Weaver (2002)

found direct relationships between knowledge and ERB and suggest that people with knowledge are more sympathetic to environmental problems. Similar findings were also reported in the case study with a significant relationship between education and all best practices and age and gender being significantly related to certain best practices. The socio-demographic variables reported were not significantly related to all behavioural practices though. Knowledge of a few environmental issues was also significantly related to some environmental best practices confirming some of the findings of other authors (De Chano, 2006; Mensah, 2012; Thapa *et al.*, 2005; Weaver, 2002). Similar to Kuhlemeier *et al.* (1999) the case study also showed that there was a relationship to exist between knowledge and attitudes. In terms of knowledge and ERB, the authors conclude that significant relationships existed between knowledge of environmental issues and behavioural practices at home and also at the destination.

Conclusion

The aim of this paper was to demonstrate that in any tourism research, the problem under investigation must be properly conceptualized and this will in turn set the boundaries for the study and lead to appropriate research questions and methodology being adopted. Conceptualization and methodology in any research are complex issues and once this is clarified logically at the outset, most difficulties that are encountered by emerging researchers can be overcome. In the present study, diverse sources of literature on pro-environmental behaviour using socio-psychological theories and concepts were used to conceptualize the case study, which determined the methodology adopted.

The methodology discussed focused on the key elements used in the design of the case study, demonstrating the importance of research design, including the identification of the linkages between philosophical approaches, methods of data collection and techniques used. It is evident from this discussion that in any tourism research, the focus should not be on methods and techniques alone but should include the entire research design process as it links the theories, empirical data collected and all other research aspects.

Climate change influences tourism, especially via the impacts of tourist accommodation and travel choices and their environmental behaviour at destinations. However, there is need for a commitment by tourists to change their behaviour to that which is more responsible, especially their consumption patterns at destinations, so that they do not negatively impact the environment. To change the behavioural patterns of tourists, it is essential to understand the behavioural practices of tourists in different contexts and one way of doing this is to undertake research such as the case study, using socio-psychological models and theories.

The present paper on moving from conceptualization to methodology in tourism geographical research provides only some of the findings of the research conducted to demonstrate that socio-psychological models and theories are useful in assessing tourist attitudes, perceptions, knowledge and behaviour. In terms of the conceptualization, and the data obtained, it was found that there was some relationship between socio-demographic factors, knowledge, attitudes and environmentally responsible behaviour. In certain respects, the results were similar to some studies but differed from others, emphasizing that tourism behaviour is a complex research area. Difficulties were experienced in attempting to draw relationships between socio-demographic variables, knowledge and attitudes, and behaviour as highlighted in the literature. Other internal and external factors (e.g. economic, cultural and moral) may all combine with socio-demographic

variables to influence ERB. Tourism behaviour research should, therefore, not focus on any one variable, for example socio-demographic, but on a combination of variables since various factors interact to influence tourist attitudes and ERB (Mensah, 2012).

Finally, the conceptualization, methodology and results explored in this paper provide some understanding of tourist attitudes and behaviour at a major event and the way in which environmentally knowledgeable tourists behaved at a destination. This is the major limitation of this study as it only focused on a specific group of tourists. Comparative studies, using a similar conceptualization and methodology should be undertaken amongst holidaymakers and MICE tourists, taking into account the numerous factors that influence ERB. These studies on tourist ERB should also be extended to measure tourist carbon footprints and their combined impacts on sustainable tourism and sustainable development.

References

Ajzen, I. (1988). *Attitudes, personality and behaviour*. Milton-Keynes, England: Open University Press.

Ajzen, I. (1991). The theory of planned behaviour. *Organizational Behaviour and Human Decision Processes*, 50(2), 179-211.

Ajzen, I. (2006). Constructing a theory of planned behavior questionnaire. http://people.umass.edu/~aizen/pdf/tpb.measurement.pdf March 2013.

Axelrod, L.J. & Lehman, D.R. (1993). Responding to Environmental concerns: What factors guide individual action? *Journal of Environmental Psychology*, 13(2), 149-159.

Bamberg, S. & Moser, G. (2007). Twenty years after Hines, Hungerford and Tomera: A new meta-analysis of psych0-social determinants of pro-environmental behaviour. *Journal of Environmental Psychology*, 27(1), 14-25.

Barr, S. (2003). Strategies for sustainability: citizens and responsible environmental behaviour. *Area*, 35(3), 227-240.

Barr, S., Shaw, G. & Coles, T. (2011). Times for (Un)sustainability? Challenges and opportunities for developing behaviour change policy. A case-study of consumers at home and away, *Global Environmental Change*, 21(4), 1234-1244.

Berenguer, J., Corraliza, J.A. & Martin, R. (2005). Rural-Urban Differences in Environmental Concern, Attitudes and Actions, *European Journal of Psychological Assessment*, 21(2), 128-138.

Blaxter, L., Hughes, C. & Tight, M. (1996). *How to Research?* Open University Press, Buckingham.

Bryman, A. (2004). *Social Research Methods* (2nd edition), Oxford University Press, New York.

Bryman, A. & Bell, E. (2007). *Business research methods*. (2nd edition), Oxford University Press, USA.

Cheng, T-M., Wu, H.C & Huang, L-M. (2013). the influence of place attachment on the relationship between destination attractiveness and environmentally responsible behavior for island tourism in Penghu, Taiwan. *Journal of Sustainable Tourism,* 21(8), 1166–1187.

Cloke, P., Crang, P. & Goodwin, M. (Eds.) (2005*). Introducing Human Geographies* (2nd edition) London: Arnold.

Cooper, D.R. and Schindler, P.S. (2008). *Business research methods*, (10th edition) McGraw-Hill Irwin, Boston.

Coughlan, M., Cronin, P., & Ryan, F. (2007). Step-by-step guide to critiquing research. Part 1: Quantitative research. *British Journal of Nursing*, 16(11), 658-663.

Creswell, J.W. (2003) Research design: qualitative, quantitative, and mixed methods approaches (2nd Edition), Thousand Oaks, CA: Sage Publications.

Crotty, M. (1998). *The foundations of social research: Meaning and perspective in the research process. London*: Sage Publications.

De Chano, L. (2006). A multi-country examination of the relationship between environmental knowledge and attitudes, *International Research in Geography and Environmental Education*, 15(1), 15-28.

De Oliver, M. (1999). Attitudes and action: a case study of the manifest demographics of water conservation. *Environment and Behaviour*, 31(3), 372-392.

Denzin, N. & Lincoln, Y. (Eds.) (1998). *Strategies of Qualitative Inquiry*. London: Sage Publications.

Dolnicar, S. & Leisch, F. (2008). An investigation of tourists' patterns of obligation to protect the environment, *Journal of Travel Research*, 46(4), 381-391.

Dunlop, R.E. & Van Liere, K.D. (1978). The 'New Environmental Paradigm'. *Journal of Environmental Education,* 9(4), 10-19.

Easterby-Smith, M., Thorpe, R. & Lowe, A. (1991). *Management Research: An introduction*, London: Sage Publications.

Eisenhart, M.A. (1991). Conceptual frameworks for Research Circa 1991: Ideas from a cultural Anthropoligist; implications for Mathematics Education Researchers, *Proceedings of the Thirteenth Annual Meeting, North American Chapter of the International Group for the Psychology of Mathematics Education* –North America Meeting, October 16-19, 1991, Editor, R.G. Underhill, Blacksburg, Virginia, USA: 202-220.

Formica, S. & Uysal, M. (2002). Segmentation of Travellers Based on Environmental Attitudes. *Journal of Hospitality and Leisure Marketing*, 9(3/4), 35-49.

Fryxell, G. & Lo, C. (2003). The influence of environmental knowledge and values on managerial behaviours on behalf of the environment: An empirical examination of managers in China, *Journal of Business Ethics*, 46(1), 45-69.

Fowler, H.W. and Fowler, F.G. (Eds.) (1964). The Concise Oxford Dictionary of Current English. Oxford University Press, Oxford.

Glatthorn, A. A. (1998). *Writing the winning dissertation: A step-by-step guide*, London: Sage Publications.

Gomm, R., Hammersley, M. & Foster, P. (Eds.) (2000). *Case Study Method: Key issues, Key texts*. London: Sage.

Gössling, S., Scott D.C., Hall, M., Ceron, J-P. & Dubois, G. (2012). Consumer Behaviour and demand Response of Tourists to Climate Change, *Annals of Tourism Research*, 39(1), 36-58.

Greenberg, J.B. & Park T.K. (1994). Political Ecology. *Journal of Political Ecology*, 1(1), 1-12.

Greene, J.C. (2007). *Mixed methods in social inquiry*. New York: John Wiley & Sons.

Guba, E. & Lincoln, Y.S. (2005). Paradigmatic Controversies, Contradictions, and Emerging Confluences. In: Denzin, N.K. and Lincoln, Y.S. (Eds.) *Handbook of qualitative research*. (3rd edition), Thousand Oaks, CA: Sage Publications: 191-215.

Guagnano. G.A., Stern, P.C. & Dietz,T. (1995). Influences on attitude-behavior relationships: a natural experiment with kerbside recycling, *Environment and Behaviour*, 27, 699-718.

Hamilton, J.M., Maddison, D.J., Tol, R.S.J. (2005). Effects of climate change on international tourism, *Climate Research*, 29, 245-254.

Hanna, G. (1995). Wilderness-related environmental outcomes of adventure and ecology education programming, *The Journal of Environmental Education*, 27 (1), 21-32.

Harwell, M.R. (2011). Research design: Qualitative, quantitative, and mixed methods. In C. Conrad and R. C. Serlin (Eds.), *The Sage handbook for research in education: Pursuing ideas as the keystone of exemplary inquiry (2nd Edition)*, Thousand Oaks, CA: Sage Publications: 147-163.

Hernandez, A.B. & Ryan, G. (2011). Coping with Climate Change in the Tourism Industry: A Review and Agenda for Future Research. *Tourism and Hospitality Management*, 17(1), 79-90.

Hines, J.M., Hungerford, H.R. & Tomera, A.N. (1987). Analysis and synthesis of research on responsible environmental behaviour: a meta-analysis. *Journal of Environmental Education,* 18(2), 1-8*.*

Holweg, M., & Van Donk, D. P. (2009). When is a conceptual framework also a theoretical contribution? *Operations & Supply Management (OMS) Forum*, 1-3.

Hopper, J.R. & Nielsen, J.M. (1991). Recycling as altruistic behaviour: normative and behavioural strategies to explain participation in a community recycling program. *Environment and Behavior*, 23(2), 195-220.

Hungerford, H.R. & Volk, T.L. (1990). Changing Learner Behaviour through Environmental Education. *Journal of environmental education*, 21(3), 8-21.

Hussein, A. (2009). The use of Triangulation in Social Sciences Research: Can qualitative and

quantitative methods be combined? *Journal of Comparative Social Work*, 1, 1-12.

Hussey, J. & Hussey, R. (1997). *Business Research: A practical guide for undergraduate and post-graduate students,* London: MacMillan Press Ltd.

Jabareen, Y. (2009). Building a Conceptual Framework: Philosophy, Definitions, and Procedure. *International Journal of Qualitative Methods*, 8(4), 49-62.

Jackson, T. (2004). *Motivating sustainable consumption: A review of evidence on consumer behaviour and behavioural change*, Sustainable Development Research Network, London.

Johnson, R.B. & Turner, L.A. (2003). Data collection strategies in mixed methods research. In A. Tashakkori and C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioural research*: 297-319. Thousand Oaks, CA: Sage Publications.

Kohlbacher, F. (2006). The use of qualitative content analysis in case study research, *Forum Qualitative Sozialforschung/ Forum: Qualitative Social Research*, 7 (1), 1-21,

Kollmuss, A. & Agyeman, J. (2002). Mind the gap: why do people act environmentally and what are the barriers to pro-environmental behaviour, *Environmental Education Research*, 8(3), 239-260.

Kuhlemeier, H., Van Den Bergh, H. & Lagerweij, N. (1999). Environmental knowledge, attitudes, and behaviour in Dutch secondary education. *Journal of Environmental Education*, 30(2), 4-15.

Langley, A. & Royer, I. (2006). Perspectives on Doing Case Study Research in Organizations. *Management*, 9(3), 73-86.

Lee, W.H. & Moscardo, G. (2005). Understanding the impact of ecotourism resort experiences on tourists' environmental attitudes and behavioural intentions, *Journal of Sustainable Tourism*, 13(6), 546-565.

Lee, Y., Choi, J., Kim, M., Ahn, Y. & Katz-Gerro, T. (2012). Explaining pro-environmental behaviours with environmentally relevant variables: A survey in Korea. *African Journal of Business Management*, 6(29), 8677-8690.

Lee, T.H., Jan, F. & Yang, C. (2013). Environmentally responsible behaviour of nature-based tourists: A review. *International Journal of Development and Sustainability*, 2(1), 1-15.

Leshem, S. & Trafford, V. (2007). Overlooking the conceptual framework, *Innovations in Education and Teaching International*, 44(1), 93-105.

Liebe, U. (2010). Different routes to explain pro-environmental behaviour: an overview and assessment. *Analyse and Kritik*, 32(1), 137-157.

Liebe, U., Preisendorfer, P. & Meyerhoff, J. (2011). To pay or not to pay: competing theories to explain individuals' willingness to pay for public environmental goods. *Environment and Behaviour*, 43(1), 106-130.

Luo, Y. & Deng, J. (2008). The New Environmental Paradigm and Nature-based Tourism Motivation. *Journal of Travel Research*, 46(4), 392-402.

Mason, J. (2002). *Qualitative researching* (2nd edition), Thousand Oaks, CA: Sage Publications.

Mangan, J., Lalwani, C. & Gardner, B. (2004). Combining quantitative and qualitative methodologies in logistic research, *International Journal of Physical Distribution and Logistics Management*, 34(7), 565-578.

Maxwell, J.A. (2005). Qualitative research design: An interactive approach (2nd edition), Thousand Oaks, CA: Sage Publications.

McKercher, B., Prideaux, B., Cheung, C., & Law, R. (2010). Achieving voluntary reductions in the carbon footprint of tourism and climate change. *Journal of Sustainable Tourism*, 18(3), 297-317

McDonough, J. & McDonough, S. (1997). *Research Methods for English Language Teachers*, London: Arnold.

Meijers, M.H.C. & Stapel, D.A. (2011). Me tomorrow, the others later: How perspective fit increases sustainable behaviour, *Journal of Environmental Psychology*, 31(1), 14-20.

Mensah, I. (2012). Environmental education and environmentally responsible behaviour: the case of international tourists in Accra Hotels. *International Journal of Tourism Sciences,* 12(3), 69-89.

Miles, M.B. & Huberman, M.A. (1994). *Qualitative Data Analysis: An Expanded Sourcebook* (2nd Edition), Beverley Hills: Sage Publications.

Miller, G., Rathouse, K., Scarles, C., Holmes, K. & Tribe, J. (2010). Public understanding of sustainable tourism. *Annals of Tourism Research*, 37(3), 627-645.

Moodley, K, (2013). Delegates Perceptions and Responsible Environmental Behaviour at the COP 17 Event, MSc in Geography and Environmental management, University of KwaZulu-Natal, Durban, South Africa.

Moodley, K. & Sershen. (2014). A gendered analysis of delegate profiles, environmental knowledge and pro-environmental behaviour at COP 17, 28(3), 34-44.

Moodley, K. & Sershen. (2015). Delegates' Environmental attitudes, knowledge and behaviour at the 17th Conference of the Parties (COP17) in Durban, South Africa. *African Journal of Physical, Health Education, Recreation and Dance (AJPHERD),* (Supplement 1), 139-155.

Nachmias, C.F. & Nachmias, D. (2008). *Research methods in the social sciences* (7th edition), Worth, New York.

Orams, M.B. (1997). The Effectiveness of Environmental Education: Can We Turn Tourists into 'Greenies'? *Progress in Tourism and Hospitality Research*, 3, 295-306.

Porta, D.D. & Keating, M. (Eds.) (2008). *Approaches and Methodologies in the Social Sciences: A Plurist Perspective*, Cambridge: Cambridge University Press.

Reid, L., Sutton, P. & Hunter, C. (2010). Theorizing the meso- level: the household as a crucible of pro-environmental behaviour. *Progress in Human Geography*, 3(3), 309-327.

Robelia, B. & Murphy, T. (2012). What do people know about key environmental issues? A review of environmental knowledge surveys, *Environmental Education Research*, 18(3), 299-321.

Rossman, G.B. & Rallis, S.F. (2016). *An Introduction to Qualitative Research: Learning in the Field*, (4th Edition), Beverly Hills: Sage Publications.

Saunders, M., Lewis, P. & Thornhill, A. (2006). *Research methods for business students*, (4th edition), Harlow: Prentice Hall.

Scott, D. & Becken, S. (2010) Adapting to climate change and climate policy: progress, problems and potentials. *Journal of Sustainable Tourism*, 18(3), 283-295.

Schahn, J. & Holzer, E. (1990). Studies of environmental concern: the role of knowledge, gender and background variables. *Environment and Behaviour*, 22(6), 767-786.

Segun, C., Pelletier, L.G. & Hunsley, J. (1998). Towards a model of environmental activism. *Environment and Behavior*, 30(5), 628-652.

Sivek, D.J. & Hungerford, H. (1990). Predictors of responsible behaviour in members of three Wisconsin conservation organisations. *Journal of Environmental Education*, 21 (2), 35-40.

Sookram, S. (2009). The impact of climate change on the tourism sector in selected Caribbean countries, ECLAC –Project documents collection Caribbean development report, Vol. 2, 204-244. http://www.cepal.org/publicaciones/xml/3/38253/lcarl.245part4.pdf February 2015.

Stake, R.E. (2000). *Case Studies*. In N, K. Denzin and Y, S. Lincoln (Eds.), *Handbook of qualitative research*: 435-453, London: Sage Publications.

Stanford, D. (2006). Responsible tourism, responsible tourists: What makes a responsible tourist in New Zealand, PhD thesis, Victoria University of Wellington, New Zealand.

Stern, P. C. (2000). Psychology, sustainability, and the science of human-environment interactions. *American Psychologist*, 55(5), 523-530.

Stonich, S. (1998). The political ecology of tourism. *Annals of Tourism Research*, 25(1), 25-54.

Svinicki, M.D. (2010). *A guidebook on conceptual frameworks for research in engineering education. Rigorous research in engineering education NSF DUE-0341127, DUE-0817461*, University of Texas.

Thapa, B., Graefe, A.R. & Meyer, L.A. (2005). Moderator and mediator effects of scuba diving specialization on marine-based environmental knowledge-behaviour contingency. *Journal of Environmental Education*, 37(1), 53-67.

Tubb, K.N. (2003). An evaluation of the effectiveness of interpretation within Dartmoor National Park in reaching the goals of sustainable tourism development, *Journal of Sustainable Tourism*, 11(6), 476-498.

Tsai, C. (2010). Applying the theory of planned behaviour to explore the independent travellers' behaviour, *African Journal of Business Management*, 4(2), 221-234.

Uysal, M. & Jurowski, C. (1994). Testing the push and pull factors. *Annals of Tourism Research*, 21(4), 844-846.

Wall, R., Devine-Wright, P. & Mill, G.A. (2007). Comparing and combining theories to explain pro-environmental intentions: The case of commuting-mode choice. *Environment and Behavior*, 39(6), 731-753.

Weaver, A.A. (2002). Determinants of environmental attitudes. *International Journal of Sociology*, 32(1), 77-108.

World Tourism Organization and United Nations Environmental Programme (WTO and UNEP) (2008). Climate Change and Tourism-Responding to Global Challenges, WTO and UNEP, Madrid, Spain.

Yin, R. (1994). *Case Study Research: Design and Methods*, Thousand Oaks, London, New Delhi: Sage Publications.

Zainal, Z. (2007). Case study as a research method. *Jurnal Kemanusiaan* bil, (9), 1-6.

Zografos, C. & Allcroff., D. (2007). The environmental values of potential; eco-tourists: A segmentation study. *Journal of Sustainable Tourism*, 15(1), 44-66.