



# Structural relationships between environmental attitudes, recreation motivations, and environmentally responsible behaviors



Namyun Kil <sup>a,\*</sup>, Stephen M. Holland <sup>b,1</sup>, Taylor V. Stein <sup>c,2</sup>

<sup>a</sup> School of Natural Resources, University of Nebraska-Lincoln, 304 Hardin Hall, 3310 Holdrege Street, Lincoln, NE 68583-0973, USA

<sup>b</sup> Department of Tourism, Recreation and Sport Management, University of Florida, P.O. Box 118209, Gainesville, FL 32611-8209, USA

<sup>c</sup> School of Forest Resources and Conservation, 345 Newins-Ziegler Hall, University of Florida, P.O. Box 110410, Gainesville, FL 32611-0410, USA

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## ABSTRACT

This study examines the relationship between environmental attitudes, outdoor recreation motivations, and environmentally responsible behaviors. Little has been reported about whether motivation can serve as a mediator to better understand environmental attitude–behavior relationships. On-site responses collected from Florida National Scenic Trail hikers were utilized in a structural equation model. Structural model results indicated significant relationships between attitudes, motivations, and behaviors. Environmental attitudes influenced motivations and environmental behaviors, and motivations were significantly related to environmental behaviors. Further analyses found that motivation served as a partial mediator of the attitude–behavior linkage. These results suggest that environmental attitudes and motivations substantially shape environmentally responsible behaviors. Managerial implications are discussed, including maintaining natural aspects of environments and increasing awareness about natural environments through educational programs. Further studies utilizing participants in other outdoor recreation activities at various settings are recommended.

## MANAGEMENT IMPLICATIONS

Publicly owned natural areas depend on public support for political buttressing and financial resources to sustain and increase public services. Environmental attitudes are nurtured in those settings through the fulfillment of motivations and benefits sought that drive visitors' participation in nature-based recreation. Well-managed natural environments help foster pro-environment attitudes and environmentally responsible behaviors. Those who hold strong environmental attitudes tend to behave in more environmentally responsible ways, including political and educational actions. Natural environments that provide opportunities to recreate generate support for those areas. This means that public land managers shape more than just the immediate experiences visitors attain in an area. It follows that strategies initiated by managers of increasing awareness about and appreciation for their natural areas through outlets such as mass media, internet, and on-site interpretive programs can influence pro-environmental attitudes and behaviors.

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## 1. Introduction

Understanding motives for visiting natural areas is an important aspect of establishing appropriate planning objectives to optimize nature-based recreation benefit opportunities (Driver, 2008). From a benefits-oriented perspective, individuals who visit nature-based recreation and tourism destinations choose to participate in certain

outdoor recreation activities such as hiking, horseback riding and camping in order to satisfy internal recreational needs and obtain benefits (Driver, 2008). Recreational benefits vary, ranging from tangible to intangible such as stress reduction, learning more about natural/cultural environments, personal or community identity, environmental stewardships, and engaging in environmentally responsible behaviors (e.g., donating money to environmental organizations, reading environment-related publications) (Anderson, Nickerson, Stein, & Lee, 2000; Driver, 2008; Kil, Holland, & Stein, 2012a; Thapa, 2010). Nature-based outdoor recreation and tourism relies on natural environments to be ecologically, socio-culturally, and economically sustainable (Newsome, Moore, & Dowling, 2002) for such benefits to accrue.

\* Corresponding author. Tel.: +1 402 314 2458.

E-mail addresses: [nkil2@unl.edu](mailto:nkil2@unl.edu) (N. Kil), [sholland@ufl.edu](mailto:sholland@ufl.edu) (S.M. Holland), [tstein@ufl.edu](mailto:tstein@ufl.edu) (T.V. Stein).

<sup>1</sup> Tel.: +1 352 294 1669.

<sup>2</sup> Tel.: +1 352 846 0860.

As rising environmental threats (e.g., natural resource depletion, increasing population and pollution rates, increasing greenhouse effects) to ecosystems deteriorate natural area benefits, the relevance of environmental attitudes and behavior becomes progressively more pertinent (Kaiser, Ranney, Hartig, & Bowler, 1999; Milfont & Duckitt, 2004) both with the American public (Gagnon-Thompson & Barton, 1994) as well as for people around the world (Speth & Haas, 2006; Wapner, 1996). Perhaps as a corollary to this trend, a linkage between environmental attitudes and environmentally responsible behaviors has been observed. Some scholars have confirmed a significant relationship (Choi & Fielding, 2013; Milfont & Duckitt, 2004; Roberts & Bacon, 1997; Stern, Dietz, & Guagnano, 1995), while others report a non-significant (Cottrell, 2003; Wearing, Cynn, Ponting, & McDonald, 2002) or low-modest association (Tarrant & Cordell, 1997). This ambiguous outcome of an indeterminate environmental attitude–behavior relationship, suggests a continued need to contribute to this body of work to attempt to tease out relevant details and specific instances for varied situations.

The influence of environmental attitudes on recreational motivations (i.e., experiential benefits sought) has been examined in only a few studies in varying contexts such as nature-based settings (Luo & Deng, 2008) and a nature themed festival (Kim, Borges, & Chon, 2006) where most findings revealed a substantial attitude–behavior relationship. Recreationists with strong environmental attitudes were more likely to engage in appreciative activities, and in turn, those participants had more frequent environmentally responsible behaviors such as green consumerism (e.g., buying recycled products) (Thapa, 2010). Another study found that people who recreate parks in that are perceived to have a level of mutual benefit and co-management generate more support toward conservation (Buta, Holland, & Kaplanidou, 2014).

Although the information from these studies is illustrative, a need endures to better understand the complicated attitude–behavior relationship among specific outdoor and nature-based recreation activity groups (Teisl & O'Brien, 2003; Thapa, 2010). In addition, a structured environmental attitude–behavior relationship utilizing nature-based recreation motivations of particular user groups as a mediator has not been examined in previous research. Thus, it is posited that environmental attitudes are likely to directly influence environmentally responsible behavior. In addition, environmental attitudes likely induce individuals to visit natural areas, which could foster value-added pro-environmental behaviors such as financial, political, and educational contributions. Identifying how individuals' environmental behaviors are formed, particularly the intermediate role of their motivations for visiting nature-based recreation areas would be useful information for natural resource recreation planners to better incorporate strategies for effectively managing these areas and potentially affect visitors' future environmental attitudes and behaviors. The purpose of this study is to scrutinize the mediating role of nature-based recreation motivations on the relationship between environmental attitudes and environmentally responsible behaviors among recreationists, specifically hikers. These results could improve our understanding of the attitude–behavior relationship and how behavior can be shaped to be more ecologically accommodating, and assist policymakers and environmental managers in developing more sustainable and eco-friendly recreation resource management plans.

## 2. Literature review

### 2.1. Recreation motivations

Recreation motivations (i.e., experiential benefits sought) have been studied in various academic fields such as sociology,

(environmental) psychology, and leisure sciences. Maslow's (1970) hierarchy of human needs model with five progressions from physiological to self-actualization provides a basis for understanding why visitors with a long history of recreation and tourism behavior are more likely to seek higher levels of needs than those with a shorter history of those kinds of experiences. Iso-Ahola's (1982) leisure motivation model demonstrates that some recreational participants select particular recreation activities to escape personal and/or interpersonal situations (e.g., stress, social interactions), while others seek more intrinsic personal and/or interpersonal rewards (e.g., self-determination, challenge, exploration, novelty, learning, relaxation) through engagement in recreation and tourism activities. From another perspective, recreation and tourism motivation refers to push and pull factors (Dann, 1977). The push aspect of motivation as a central aspect of human behavior (Iso-Ahola, 1982) represents a set of internal needs (e.g., escape, learning) that drive visitors to be involved in leisure and recreation activities (Brooker & Joppe, 2013). Concurrently, certain attractive destination attributes (e.g., accessibility, convenient facilities, and pristine natural settings) pull individuals to visit a particular area to satisfy their push factors (Dann, 1977). However, other evidence indicates that benefits attained by visitors are stronger predictors of overall positive responses to park visits than basic visitor service quality ratings (Crisley, Weber, & Taplin, 2012).

The recreation experience preference (REP) scale has been systematically utilized to understand nature-based/outdoor recreation motivations (Anderson, Wilhelm Stanis, Schneider, & Leahy, 2008; Kil, Holland, Stein, & Ko, 2012b; Luo & Deng, 2008). The REP scale was developed using numerous outdoor settings (Manfredo, Driver, & Tarrant, 1996), based on expectancy-valence motivation ideas that individuals engage in outdoor activities (e.g., hiking, camping, and fishing) in specific settings to realize certain socio-psychological and physical experiences and benefits (Driver, Brown, & Peterson, 1991; Lawler, 1973). Various motives for visiting natural environments have emerged ranging from escape to adventure, relaxation and social bonding. Seeking nature, social interaction, and physical/mental health were reported to be core nature-based recreation benefit domains (Anderson et al., 2008).

### 2.2. Environmental attitudes

Another aspect of nature-based recreation participation is the attitudes that actors may have (and form during a park visit) about the outdoor environment. Attitudes are defined as “a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor” (p. 1, Egaly & Chaiken, 1993). Attitudes are beliefs and feelings about an object that cause one to behave consistently toward the object (Fishbein & Ajzen, 1974) and beliefs are information one holds about the object (Petty & Cacioppo, 1981). Thus, as applied here, beliefs are nested within the concept of attitudes. The new ecological paradigm (NEP) scale, a revised new environmental archetype, is a widely accepted measure that evaluates a set of human beliefs and attitudes toward the natural environment (Dunlap, Van Liere, Mertig, & Jones, 2000). The NEP scale assesses general beliefs about outcomes of environmental behaviors such as resource use and pollution. The scale thus reflects general environmental attitudinal milieu (Mobley, Vagias, & DeWard, 2010; Stern, 1992; Tarrant & Cordell, 1997).

Unlike viewpoints that humans are exempt from or independent of environmental conditions (e.g., the Human Exemptionism Paradigm, Dunlap & Catton, 1994), the NEP scale was created in the 1970s (Dunlap & Van Liere, 1978) to focus on interdependence between humans and environments and assess attitudes toward natural environments. It utilized 12 items measuring three

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