Waste Management 79 (2018) 273–286

Contents lists available at ScienceDirect

Waste Management

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

Factors influencing tourists' litter management behavior in mountainous tourism areas in China

Huan Hu [a], Jinhe Zhang [a,*], Guang Chu [a], Jinhua Yang [a,b], Peng Yu [a]

[a] School of Geographic and Oceanographic Sciences, Nanjing University, Nanjing, PR China
[b] College of City and Tourism, Hengyang Normal University, Hunan, PR China

ARTICLE INFO

Article history:
Received 15 May 2018
Revised 5 July 2018
Accepted 27 July 2018

Keywords:
Tourism litter management
The theory of planned behavior
Incentive measures
Travel companions
Pro-environmental behaviors

ABSTRACT

Bringing self-generated litter down the mountain is an emerging pro-environmental behavior to solve the problem of trail's litter management in China. This study is the first attempt to explore a theoretical explanation model that explicates tourists' complex intention-forming process for engaging in it. The study extended the Theory of Planned Behavior model, including three additional explaining variables (environmental theory knowledge, environmental practice knowledge, and incentive measures), as well as a moderator of travel companions between subjective norm and the behavioral intention. The data were collected in questionnaire survey samples of 372 tourists in Huangshan National Park (HNP) and analyzed by the method of the structural equation model. The results showed that (1) attitude toward the behavior, subjective norm, perceived behavioral control and incentive measures significantly affected the behavioral intention; (2) environmental theory knowledge and environmental practice knowledge had indirect effects on the behavioral intention via the mediator of attitude toward the behavior; and (3) the strength of the relationship for the family group between subjective norm and the behavioral intention was significantly greater than the non-family group. Finally, we presented several effective suggestions to improve tourists' intention of bringing self-generated litter down the mountain.

© 2018 Elsevier Ltd. All rights reserved.

1. Introduction

From a sustainability perspective, tourism litter management has become an increasingly common problem around the world (Arbulú et al., 2016; Cingolani et al., 2016; Ezeah et al., 2015; McDougall and Hruska, 2000). Particularly in mountainous tourism areas, the environment is fragile, the topography is complex, and the traffic is inconvenient in mountainous regions. These lead to the difficulty of litter collection and transportation on climbing trails. Studies have shown that the improper litter management leads to adverse impacts on the environment (Kaseva and Moirana, 2010; Musora et al., 2017). For example, litter makes a mess and unpleasant odor in the visual and smell of the area, directly affecting the satisfaction of tourists and the local tourism economy; in addition, litter may contaminate soil and water, damage to the health of wildlife by increasing its dependency on litter as a food source, and threaten the health of tourists by increasing the number of bees, flies and other pests in trails (Cingolani et al., 2016; Rodríguez-Rodríguez, 2012). Therefore, establishing an appropriate litter collection and transportation mechanism is an urgent problem to be solved on climbing trails (Kuniyal et al., 2003). From a practical point of view, based on the particularity of the mountain regions, the minimization of litter generation may be the most effective solution to avoid the problem of litter collection and transportation (Kuniyal, 2005).

To solve this problem, managers have taken direct methods, such as providing adequate infrastructure (litter bins and regular staff to collect litter), and enforcement regulations to manage the litter. However, the research has shown that indirect methods, such as educational programs, are more effective than direct methods (Cingolani et al., 2016; Hendee et al., 1978; Kidd et al., 2015). Tourist educational programs are an important tool for tourism managers to encourage tourists to dispose their litter at suitable sites for litter minimization (Marion and Reid, 2007; Vagias et al., 2014). Worldwide, a number of low-impact litter management campaigns have been successfully proposed to encourage tourists to pay attention to tourism litter management, and strive to reduce the environmental impact of tourism litter through personal litter management behaviors. Examples include the "Zero Waste" management in Kovalam (Dileep, 2007), as well as the "Minimal Impact Bushwalking" (MIB) education campaign in Australia (O'Loughlin, 1996). The most popular low-impact tourist educational program presently is the "Leave No Trace" (LNT) program originating in

* Corresponding author.
E-mail address: zhangjinhe@nju.edu.cn (J. Zhang).

https://doi.org/10.1016/j.wasman.2018.07.047
0956-053X/© 2018 Elsevier Ltd. All rights reserved.

the United States in the 1960s (Marion and Reid, 2001). The original and well-known practice and philosophy of LNT is "pack it in, pack it out" (PIPO); this anti-littering message encourages tourists to pack out all litter generated during their tour (Vagias et al., 2014). Currently, these litter management principles have become widely practiced by tourists as outdoor ethics and common sense around the world. These principles include PIPO, carry in/carry out (CICO) (Powers, 2017) and trash in/trash out (Kaseva and Moirana, 2010). The common goal of these litter management principles is to minimize negative impacts to the environment and maximize positive travel experiences of tourists.

Remarkably, LNT is a burgeoning practice in China's tourism litter management; it is one of the most popular pro-environmental behaviors to solve the problem of litter management in recent years. Based on tourists' environmental awareness and the need for the environment protection in mountainous areas, bringing self-generated litter down the mountain is a new practical form of LNT in mountainous tourism areas in China. For example, in 2013, the world natural and cultural heritage site of Huangshan National Park (HNP) was the first mountainous national park to put forward the initiative of bringing self-generated litter down the mountain in China. Before tourists enter the national park, they receive a free degradable cleaning bag provided by park staff to enable them to carry self-generated litter from the climbing trails to trails' heads. When leaving the national park, tourists discard their litter in designated places. This initiative can reduce the amount of litter generation, keep the environment clean and beautiful, and save money used for litter disposal. During the China National Day holiday (October 1–6, 2015), HNP attracted more than 180,000 tourists at home and abroad, of whom more than 100,000 tourists brought their self-generated litter down the mountain (AnhuiDaily, 2015). Therefore, bringing self-generated litter down the mountain is a necessary litter management initiative to minimize litter generation and reduce the burdens of litter collection and transportation.

However, there is no study to analyze tourists' intention to comply with the initiative of bringing self-generated litter down the mountain in China. In order to explain the tourists' complex tourism litter management intention-forming process, the present study applied the Theory of Planned Behavior (TPB). The TPB was widely used in the field of tourists' pro-environmental behaviors, but the adequacy of model explanatory power has been questioned (Han et al., 2017; Vagias et al., 2014; Wang et al., 2018). When the implementation of new policies, several studies on pro-environmental behavioral intention showed that incentive measures have significant influences on behavioral intention to comply with the new policy (Line et al., 2018; Marion and Reid, 2001; Stern, 1999). Vagias et al. (2014) found that environmental knowledge has positive effects on visitors' behavioral intention to comply with Leave No Trace practices. Yadav and Pathak (2016) also found that environmental knowledge has positive effects on attitude toward the behavior which further effects pro-environmental behavioral intention. However, in the case of attitude as a mediator, there is no consistent conclusion that attitude toward the behavior is partly or completely mediating between environmental knowledge and behavioral intention. In addition, a lot of studies showed that subjective norm, that is the perceived social pressure from family, friends, colleagues, classmate and so on, has significant influences on behavioral intention (Han et al., 2010; Wang et al., 2018), but few studies have focused on the effects of different stressors on individual's behavioral intention in the TPB.

Based on these gaps in the published research, the extended Theory of Planned Behavior (TPB) model was applied to study factors influencing tourists' behavioral intention of bringing self-generated litter down the mountain in China, including three added explaining variables (environmental theory knowledge, environmental practice knowledge, and incentive measures) as well as a moderator (travel companions) between subjective norm and the behavioral intention. In the present study, due to the multidimensionality and complexity of the concept of environmental knowledge (Chiou, 1998; Fryxell and Lo, 2003), it was divided into two constructs (environmental theory knowledge and environmental practice knowledge). The study intended to use HNP in China as a research case and study four issues. First, what are the main factors that influence the tourists' litter management intention of bringing self-generated litter down the mountain? Second, how do environmental theory and practice knowledge affect the behavior intention? Third, do incentive measures affect tourists' behavioral intention? Fourth, do travel companions (the family and the non-family) play a significantly moderating role between subjective norm and the behavioral intention? Based on these questions, we hope to provide effective trail's litter management suggestions for mountainous tourism areas to enhance the ecological environment conservation and achieve sustainable development.

2. Theoretical background and hypotheses

2.1. Theoretical background

Based on the theory of reasoned action, Ajzen proposed the theory of planned behavior (TPB) (Ajzen, 1985, 1991). According to the TPB, behavioral intention is a crucial psychological determinant influencing individual's behaviors, which can be affected by three independent variables: attitude toward the behavior, subjective norm and perceived behavioral control (Ajzen, 1985, 1991). Attitude toward the behavior, as a volitional determinant of behavioral intention, refers to the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question (Ajzen, 1991). Subjective norm, as another volitional determinant of behavioral intention, reflects the perceived social pressure to perform or not perform the behavior (Ajzen, 1991). Perceived behavioral control, as a non-volitional determinant of behavioral intention, refers to the perceived ease or difficulty of performing the behavior (Ajzen, 1991; Madden et al., 1992).

As a powerful and robust theoretical framework, the TPB has been widely used in explicating human behavior decision-making processes in pro-environmental intention or behavior, not only in tourism (Chen and Tung, 2014; López-Mosquera et al., 2014) but also in other fields, such as household solid waste recycling (Tonglet et al., 2004), organic food purchasing (Chen, 2007), energy saving (Gadenne et al., 2011) and environmental activism (Fielding et al., 2008).

However, in order to provide a more effective prediction model in different contexts, researchers have extended the original model to increase its predictive power by adding different variables. In pro-environmental intentions or behaviors, considerable studies have found that the TPB framework can be deepened and broadened by adding new variables (Bamberg, 2002; Han et al., 2017; Vagias et al., 2014). Based on this, the study added three predictive variables (environmental theory knowledge, environmental practice knowledge and incentive measures) as well as a moderating variable (travel companions) to build a research model to explicate the intricate psychological decision-making process of tourists for bringing self-generated litter down the mountain in mountainous tourism areas.

2.2. Hypotheses

2.2.1. Relationship between attitude toward the behavior, subjective norm, perceived behavioral control and the behavioral intention

Many previous studies of pro-environmental behaviors in tourism support that attitude toward the behavior, subjective norm,

Download English Version:

https://daneshyari.com/en/article/11033257

Download Persian Version:

https://daneshyari.com/article/11033257

Daneshyari.com