Lay Beliefs About the World Affect Preferences for Sustainable Hotel Offerings

Felix Septianto

University of Queensland, Australia

The University of Auckland, New Zealand

Nguyen T. Thai

University of Wollongong, Australia

Joya A. Kemper

The University of Auckland, New Zealand

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Abstract

Prior research has established that consumers with higher levels of biospheric values are more likely to engage in sustainable behaviors. Such findings assume that tourism practitioners should solely focus their marketing efforts on consumers with high levels of biospheric values. The present research reexamines such typical expectations by investigating how lay beliefs about the world elicited by advertising can encourage consumers with *low* levels of biospheric values to engage in sustainable behaviors. Results of two experimental studies show that, among consumers with low levels of biospheric values, those with a malleable (vs. fixed) lay belief about the world exhibit stronger preferences for sustainable hotels offerings because they are more hopeful that the sustainable efforts from the hotels can create a positive change. These findings contribute to the literature by demonstrating the role of lay beliefs on consumers' sustainable behaviors and establishing the underlying mechanism. In addition, this research provides a novel insight about how tourism practitioners can appeal to unsustainable consumers, highlighting how the tourism industry can create positive behavior change toward consumers' sustainable behaviors.

Keywords biospheric value, lay belief, hope, sustainable tourism

Tourism is an important industry for many local economies, but it also has significant environmental impact at local and global scales. Specifically, while development of the tourism industry can generate financial benefits for local communities (Gezon, 2014), tourism activities negatively effects local environments in the form of waste generation (Mbaiwa, 2003), carbon emissions, and fossil energy consumption (Becken & Patterson, 2006). While the main contributor of greenhouse gas emissions from the tourism sector is transport (i.e., flying), hospitality (accommodation and restaurants) also contribute to the increasing footprint of tourism (Lenzen et al., 2018). As a result, the notion of sustainable tourism—incorporating environmental and social issues in tourism practices (sustainable practices) and encouraging consumers to engage in sustainable behaviors (Dolnicar & Leisch, 2008)—is gaining attention among tourism practitioners and scholars recently.

The accommodation sector is of a particular interest in this regard because many hotel managers are confronted with two, seemingly contradicted goals: implementing sustainable practices, while at the same time pampering guests with hotel offerings that are *not* sustainable (e.g., reusing towels and bedsheets, abundant food and drink, individually packed bathroom amenities) (Barber & Deale, 2014). Given that consumers play an important and active role in the demand and consumption of these activities (Boley, 2015), it would be important to examine the antecedents of consumer preferences for sustainable hotel offerings.

Among the antecedents of consumers' sustainable behaviors, there is a growing literature highlighting the significant role of personal values (Han, 2015; Kiatkawsin & Han, 2017; Landon et al., 2018). In particular, such research finds that among different personal values (e.g., egoistic, altruistic, and biospheric), biospheric values (i.e., the extent to which individuals behave sustainably based on the perceived costs and benefits to the environment; Stern, 2000) are consistently shown as an important antecedent of pro-environmental behaviors such as paying for green packaging (Singh & Pandey, 2018). As such, biospheric values are arguably one of the best explanations for consumers' sustainable behaviors (De Groot & Steg, 2007; K. Lee, 2011).

If consumers with high levels of biospheric values are more likely to engage in sustainable behaviors (Han, 2015; Kiatkawsin & Han, 2017; Landon et al., 2018), the practical implications arising from such findings suggest that tourism practitioners should solely focus their marketing efforts on consumers with high levels of biospheric values. This is because such consumers show a higher potential to engage in sustainable behaviors (Han, 2015; Kiatkawsin & Han, 2017; Landon et al., 2018). However, we argue that such typical expectations portray an overly simplistic explanation and more importantly, it is equally important for practitioners to engage consumers with low levels of biospheric values because, this way, the tourism industry participates in positive behavior change (Coles et al., 2013; Dinan & Sargeant, 2000; Truong & Hall, 2013). In fact, Truong and Hall (2013, p. 112, emphasis added) state that tourism practitioners should "focus on the *least* sustainable" consumers to encourage sustainable behaviors.

The present research thus seeks to reexamine typical expectations of consumers with low levels of biospheric values and their sustainable behaviors. Notably, while personal values are often considered stable and difficult to change (Feather, 1995; Schwartz, 1994; Stern, 2000), contextual factors highlighted by different message framing (Cheng et al., 2011) might encourage consumers to engage in sustainable behaviors. Given the "considerable potential for research into the persuasiveness of message factors" in sustainable tourism (Tölkes, 2018,

p. 14), we investigate how lay beliefs about the world elicited by advertising messages can encourage consumers to choose sustainable hotel offerings.

We draw upon the literature on implicit theories—"the lay beliefs that individuals hold regarding the nature of human and nonhuman attributes, as well as more global phenomena" (Jain & Weiten, 2020, p. 60). In particular, individuals have different lay beliefs about whether the world is changeable or not (Chiu et al., 1997; Dweck et al., 1995). That is, individuals may perceive our world and environment to be relative "fixed" (called "entity" beliefs) or "changeable" (called "incremental" beliefs) (Chiu et al., 1997; Dweck et al., 1995). In recent work, Soliman and Wilson (2017) find a positive correlation between incremental beliefs and intentions to engage in pro-environmental behaviors. However, the causality of the relationship between incremental beliefs and sustainable behaviors has yet to be empirically established. More importantly, it remains unclear why consumers with an incremental belief about the world may engage in sustainable behaviors. If done correctly, studies that investigate meaningful causal process evidence contribute to improve past theories, making claims about the influence of a "treatment" on an outcome more effective and efficient (Pieters, 2017).

Accordingly, we extend and compliment prior research (Soliman & Wilson, 2017) by proposing that consumers which perceive the world as naturally changeable (vs. fixed) should be more likely to engage in sustainable behaviors, even though they have *low* biospheric values. We further argue that this is driven by the emotion of hope. Prior research suggests that hope can be seen as a constructive response to a threatening, unfavorable situation (Lazarus, 1999; Nabi et al., 2018). Because sustainable behaviors can be viewed as "hopeful responses" to environmental problems (Higham & Miller, 2018; Wahab & Pigram, 2005), we propose that when consumers are more *hopeful* of the potential benefits of sustainable efforts because they perceive the world as malleable, they are more likely to engage in such sustainable behaviors.

We conduct two experimental studies to examine our predictions. Study 1 examines how preferences for sustainable hotels are influenced by consumers' lay beliefs about the world and biospheric values. Study 2 further explores whether the interactive effect of lay beliefs and biospheric values on sustainable hotel preferences is driven by the emotion of hope. As such, the potential contributions of the current research are threefold. First, to the best of our knowledge,[1] the present research is among the first studies demonstrating the significant role of lay beliefs to tourism literature and particularly enriching the understanding of consumers' sustainable behaviors. Second, we provide empirical evidence to support the *causal* relationship between lay beliefs about the world and sustainable behaviors and further establishes hope as the underlying driver. This is significant because prior research has only suggested positive associations between these factors and not identified the underlying psychological process (Soliman & Wilson, 2017). Third, we reconsider typical expectations of consumers with low levels of biospheric values and their sustainable behaviors. Overall, the findings of this research offer important managerial implications because tapping into a market segment of consumers with low biospheric values provides a novel insight about how tourism practitioners can appeal to *un*sustainable consumers. Here, the tourism industry has an opportunity to create positive behavior change toward sustainable behaviors (Truong & Hall, 2013).

Theoretical Background

Biospheric values and sustainable tourism

Sustainable tourism has been studied since the 1970s and is thriving area for tourism research. The research covers much ground and examines population, peace, prosperity, pollution, and protection at global and local scales (Buckley, 2012). Consumer research in the sustainable tourism area has also examined this topic from different perspectives. Most consumer studies examine how consumers can reduce their negative impacts on the environment (Mbaiwa, 2003; Miller et al., 2015) and how they may help local communities (Gezon, 2014; Stoddard et al., 2012). Other research investigates consumer responses to sustainable efforts of the tourism industry, including consumer preferences for sustainable offerings in a hotel (Barber & Deale, 2014) and their intentions to stay in green hotels (Chen & Peng, 2012; Han et al., 2010). The latter stream of research, while practical for tourism practitioners, largely ignores the trade-offs consumers need to make in travel decisions for sustainability based on hotel location, amenities, and services, to name a few (Barber & Deale, 2014). For instance, while consumers may like the overall idea of "being sustainable" when staying at a hotel, typical hotel practices and offerings may *not* be sustainable (e.g., reusing towels and bedsheets, abundant food and drink, individually packed bathroom amenities) (Barber & Deale, 2014). As such, consumers' sustainable behaviors are not only affected by the practices employed by the tourism industry, individual factors also play a role.

Previous studies have identified different factors affecting consumers' sustainable behaviors, including demographic factors (e.g., age, education, income level) (Dolnicar et al., 2008), personality traits (e.g., mindfulness) (Barber & Deale, 2014), and place attachment (T. H. Lee, 2011). Among these factors, a growing literature highlights the significant role of personal values in driving consumers' sustainable behaviors (Han, 2015; Kiatkawsin & Han, 2017; Landon et al., 2018; Megeirhi et al., 2020). According to Schwartz (1992, p. 21), personal values can be defined as "desirable trans-situational goals, varying in importance, that serve as guiding principles in the life of a person or other social entity." One prominent approach of examining personal values in relation to environmental behaviors examines the importance of biospheric values, which reflects the extent to which individuals are concerned with the costs and benefits for the ecosystem as a whole (Stern & Dietz, 1994).

Indeed, past studies demonstrate consistent results that biospheric values are an important predictor of sustainable behaviors (Han, 2015; Kiatkawsin & Han, 2017; Landon et al., 2018). Specifically, consumers with high levels of biospheric values are more likely to engage in sustainable behaviors because they possess an awareness that humans are a part of nature (Stern & Dietz, 1994; Stern et al., 1999). Accordingly, consumers believe that their behaviors can bring significant impacts to the environment (Landon et al., 2018; Stern et al., 1999), and thus are more likely to internalize moral obligations to stem harm to the environment and proactively engage in sustainable behaviors (Doran et al., 2017; Han, 2015; Kiatkawsin & Han, 2017; Landon et al., 2018).

The findings of such research then suggest that tourism practitioners should focus their marketing efforts on consumers with high levels of biospheric values (Han, 2015; Kiatkawsin & Han, 2017; Landon et al., 2018) or change those with low levels of biospheric values so that they become more concerned about environmental and social issues. Yet, personal values are difficult to change because such values are associated with "relatively stable, central

elements of personality and belief structure" (Stern, 2000, p. 413). Consequently, findings from past research might not necessarily extrapolate to practical implications because tourism marketers cannot easily change consumers' biospheric values.

Moreover, the field of social marketing has shown that behavior and attitude change is complex, requiring multi-level interventions through the use of social marketing (including communication, education and support services) as well as environmental and regulatory changes (Kemper & Ballantine, 2017, 2020; Kennedy & Parsons, 2012). Hence, there is a need to identify contextual factors that might encourage consumers, especially those who hold a low level of biospheric values, to engage in sustainable behaviors. Therefore, this research aims to address this important gap and proposes that consumers' lay beliefs about the world can complement our understanding of how we can encourage consumers' sustainable behaviors, even among those with low levels of biospheric values.

Lay beliefs about the world

Sustainable tourism emerges as a response to *changes* occurring in this world, such as climate change and increasing environmental degradation (Higham & Miller, 2018; Wahab & Pigram, 2005). Thus, we develop our arguments by drawing from the literature on implicit theories, which reflects how lay beliefs of "change" and "stability" may influence individuals' interpretations of the qualities of self, other individuals, and the world around them (Jain & Weiten, 2020; Murphy & Dweck, 2016). According to this literature, humans of this world can be considered to be relatively stable (i.e., "entity" beliefs) or changeable (i.e., "incremental" beliefs) (Dweck et al., 1995), and these two different kinds of lay beliefs might have significant influences on individuals' judgments and behaviors. For example, lay beliefs of human attributes can differentially influence academic performance (Dweck & Leggett, 1988), goal-pursuit (Blackwell et al., 2007), and ethical judgment (Schumann & Dweck, 2014).

Lay beliefs can also affect personal beliefs and emotions. For example, after committing a transgression, individuals with entity beliefs (about themselves) are more likely to feel threated and unwilling to admit their faults (Schumann & Dweck, 2014). Conversely, individuals holding incremental beliefs are more likely to perceive the situation as an opportunity for personal growth and are more willing to admit their mistakes (Schumann & Dweck, 2014). At a broader level, lay beliefs can also influence judgments and decisions related to charitable behavior (Khalil et al., 2020), prejudice (Aronson et al., 2002), politics (Leith et al., 2014), and conflict (Cohen-Chen et al., 2014). In the context of tourism marketing, to the best of our knowledge, there is only one study examining how consumers with entity (vs. incremental) beliefs show higher preferences for luxury travel (Seo et al., 2019). This is because those with entity beliefs perceive that they cannot change using their own efforts, thus motivating them to use luxury travel as a form of self-enhancement (Seo et al., 2019).

Particularly relevant to our current research, in addition to specific lay beliefs about the self or other individuals, individuals also vary in their beliefs about whether the world is changeable or not (Chiu et al., 1997; Dweck et al., 1995). This aspect of lay beliefs relates to how individuals interpret the impacts of their actions toward the environment (i.e., the world), and thus may play an important role in the understanding of sustainable behaviors. In fact, a recent study by Soliman and Wilson (2017) finds increasing incremental beliefs about the world is positively associated with increasing intentions to engage in pro-environmental

behaviors, including purchasing environmentally friendly products or joining environmental action groups. While that prior work hints at the potential of lay beliefs in motivating sustainable behaviors, the *causal* relationship is yet to be empirically established. More importantly, the underlying process that justifies why lay beliefs might influence sustainable behaviors remains unexplained.

Bringing together previous research on biospheric values, lay beliefs, and sustainable behaviors, the present research proposes that beliefs about the nature of change in the world will influence consumer preferences for sustainable product offerings. Consistent with prior research (Han, 2015; Kiatkawsin & Han, 2017; Landon et al., 2018), consumers with high levels of biospheric values would show high preferences for sustainable offerings, regardless of the lay beliefs they hold, because they are already aware of and motivated to engage in sustainable behaviors (Han, 2015; Kiatkawsin & Han, 2017; Landon et al., 2018).

However, among consumers with low levels of biospheric values, extending the work of Soliman and Wilson (2017), we predict that lay beliefs about the world would influence preferences for sustainable offerings. That is, consumers adopting entity beliefs (i.e., perceiving the world as unchangeable) would be skeptical about sustainable efforts (Soliman and Wilson, 2017) and thus see no benefits in adopting sustainable behaviors. In contrast, consumers adopting incremental beliefs (i.e., perceiving the world as changing) are more likely to support sustainable efforts because they are aware of the need to adapt to a changing world (Soliman and Wilson, 2017). Formally stated, we hypothesize that there will be a significant interaction between lay beliefs about the world and biospheric values on consumer preferences for sustainable offerings, such that:

- *H1*. Consumers adopting incremental beliefs (vs. entity beliefs) and *low* levels of biospheric values will have higher preferences for sustainable offerings.

The mediating role of hope

As discussed, while the positive association between incremental lay beliefs about the world and sustainable behaviors has been suggested by prior research (Soliman & Wilson, 2017), the underlying mechanism remains unclear. In this regard, we propose that the emotion of hope can be a potential mediator. Emotion is an affective state that typically arises from individuals' mental responses to a stimulus (Ouyang et al., 2017), depending on individuals' prior experiences and appraisals of the stimulus and the current situation (Ali et al., 2016; Lazarus, 1991). Following appraisals of the stimulus, emotions emerge as adaptive psychological responses to deal with challenges and opportunities in a specific situation (Lazarus, 1991; Zhang et al., 2018).

While there are different, discrete emotions, the current research focuses on hope. According to Lazarus (1999, p. 663), hope can be defined as a positive emotion which emerges from "a strong desire to be in a different situation than at present." It is activated when individuals envision a meaningful goal with a probability of achieving it, leading to a positive change in the affective state (Lazarus, 1999). In particular, hope, as compared with other emotions (e.g., fear, joy, pride, love), has a unique role in reflecting a positive view about a future, uncertain situation (Cavanaugh et al., 2015; Septianto, Kemper, & Chiew, 2020; Winterich & Haws, 2011) and thus can be seen as a constructive response to a threatening, unfavorable situation (Lazarus, 1999; Nabi et al., 2018).

The relationship between lay beliefs and hope has been alluded by prior research (Cohen-Chen et al., 2014, 2015). For instance, Cohen-Chen et al. (2014) find a positive correlation between incremental beliefs among Israeli Jews with their hope that the conflict between Israeli-Palestinian can be resolved. This is because when individuals believe that people in this world can change, they also believe that a conflict (among people) is not fixed. Consequently, they are more likely to feel hopeful that a conflict can be resolved (Cohen-Chen et al., 2014, 2015). These findings suggest that consumers with an incremental lay belief are more likely to feel hopeful about unfavorable situations than those with an entity lay belief.

Furthermore, in the context of the current research, sustainable behaviors can be viewed as hopeful responses to environmental problems (Higham & Miller, 2018; Wahab & Pigram, 2005). This is also consistent with prior research suggesting the potential of hope in increasing climate change awareness (Nabi et al., 2018; Ojala, 2012; Smith & Leiserowitz, 2014). These findings highlight the relevance of hope, as compared with other emotions, in motivating sustainable behaviors because such behaviors are directed to change future, uncertain circumstances. Hence, drawing from past findings, we can expect that consumers with incremental (vs. entity) beliefs about the world to feel more *hopeful* of potential benefits of sustainable efforts to make positive changes in this world.

Consumers with an incremental lay belief feel more hopeful because they are more likely to see the world as malleable and thus perceive sustainable efforts as a part of a changing world that the tourism industry needs to deal with (Higham & Miller, 2018; Wahab & Pigram, 2005). In contrast, consumers with entity beliefs do not perceive this world to be changeable and thus are more skeptical about the positive effects of sustainable efforts (Soliman & Wilson, 2017). Consequently, they will be less likely to support sustainable offerings because they perceive no tangible benefits. In other words, they feel less hopeful that sustainable tourism efforts will bring positive changes to this world. Formally stated, we propose that:

- *H2.* The effect of lay beliefs on preferences for sustainable offerings among consumers with low levels of biospheric values will be mediated by the emotion of hope.

Overview of studies

Figure 1 describes the conceptual model of the current research. We conducted two experimental studies to provide evidence for Hypotheses 1 and 2. In these studies, we randomly assigned participants to one of the two (lay beliefs: incremental, entity) articles or advertising messages related to how the world is changing (vs. stable) to elicit the incremental (vs. entity) beliefs (Kwon et al., 2016; Seo et al., 2019; Septianto, 2020; Yorkston et al., 2010).

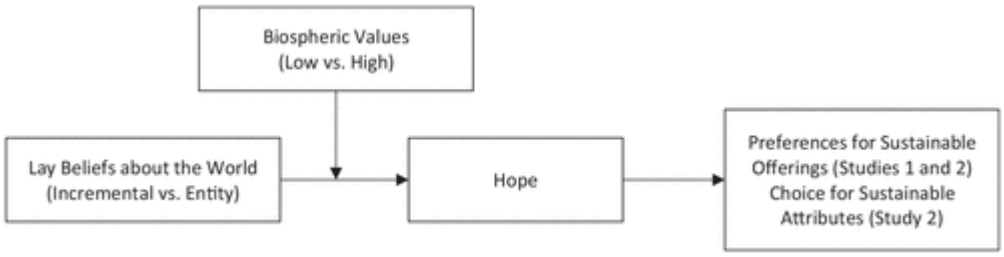

Figure 1. Conceptual model.

All participants in our studies were participants living in the United States recruited from the Amazon Mechanical Turk online panel in exchange for a small financial compensation. This panel has been widely used in previous tourism and marketing research (Kim & Seo, 2019; Ngo et al., 2020; Seo et al., 2019; Thai & Yuksel, 2017). Amazon Mechanical Turk users are representative of the population, similar to other online panels (Buhrmester et al., 2011). Notably, MTurk is considered to be more diverse (Buhrmester et al., 2011) and more attentive when completing a survey (Hauser & Schwarz, 2016), as compared with typical student samples. In addition, to ensure attentiveness and data quality, we also recruited participants with high reputation (i.e., that 95% of their previous completed tasks were approved) (Peer et al., 2014).

Following prior research that employs an experimental design (e.g., Kim & Seo, 2019), to determine an adequate sample size, we conducted a power analysis to determine a sufficient sample size using G*Power software (Faul et al., 2007). Based on our experimental design and settings (i.e., the α was set at .05 significance level, with medium effect size [f = .30] and power [1 – β = .80]) (Kim & Seo, 2019), the minimum required sample size was 90. Thus, we sought to recruit more than 90 participants for each study.

Study 1

Study 1 aims to test Hypothesis 1 using a chronic (or measured) biospheric values and manipulated incremental and entity beliefs. Hence, we employ a lay beliefs (incremental, entity) by biospheric values (continuous) between-subjects design. After measuring participants' biospheric values, we use a reading task to manipulate lay beliefs (Chen et al., 2009; Cohen-Chen et al., 2015). For the dependent variable, participants rate their preferences for sustainable service offerings of a hotel (Barber & Deale, 2014). We expect that among participants with low levels of biospheric values, those holding incremental (vs. entity) beliefs will have higher preferences for sustainable offerings of a hotel. In contrast, those with high levels of biospheric values will show higher preferences for a hotel with sustainable offerings, regardless of their lay beliefs.

Method

Participants included 111 U.S. residents (33% female, average age 34.05) recruited from the Amazon Mechanical Turk. Participants first completed the biospheric values measure (Landon et al., 2018). Specifically, we asked: "How important are each of the following statements as guiding principles in your life?" Participants rated the importance of three values on a 7-point scale (1 = *not at all*, 7 = *extremely*): (1) Unity with nature: Fitting into nature; (2) Protecting the environment: Preserving nature; (3) A world of beauty: Beauty of nature and the arts (α = .92).

Following this, participants read an article reporting a new study that examines the extent to which the world is dynamic (i.e., lay beliefs manipulation). In the incremental condition, participants read that the study finds that social and political realities are ever changing. In contrast, participants in the entity condition learned that in general, the world is stable over time (Cohen-Chen et al., 2015). As a manipulation check, participants rated their agreement to three statements on a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*). The items

were as follows: (a) Although we can change some phenomena, it is unlikely that we can alter the core dispositions of our world; (b) Our world has its basic or ingrained dispositions, and you really can't do much to change them; (c) Some societal trends may dominate for a while but the fundamental nature of our world is something that cannot be changed much (α = .93). For the dependent variable, participants rated their preferences for sustainable service offerings of a hotel on 12 items on a 7-point scale (1 = *not at all*, 7 = *extremely*) (Barber & Deale, 2014). These 12 items were averaged to form an index of preferences (α = .91; see Table 1 for the details of items).

Table 1. Comparison for Each Offering by Lay Beliefs and Biospheric Values (Study 1).

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Offerings	Lay beliefs	Low biospheric values			High biospheric values		
		M	*t* value	p value	*M*	*t* value	p value
Buy guest amenities in bulk (i.e., use refillable hair and skin care dispensers)	Entity	3.87	−0.36	0.720	4.95	0.75	.458
	Incremental	4.05			4.58		
Buy organic, fair trade, cruelty-free guest amenity products whenever possible (e.g., bedding, hair and body care)	Entity	3.80	−1.73	0.087	5.73	1.75	.083
	Incremental	4.53			5.00		
Donate leftover guest amenities, old furniture, and appliances to charities	Entity	4.19	−2.90	0.005	6.07	1.78	.078
	Incremental	5.47			5.29		
Use an energy management system for HVAC (heating, ventilation, and air conditioning), lighting, and so on	Entity	4.34	−1.78	0.078	6.36	2.70	.008
	Incremental	5.07			5.24		
Have a gift shop that sells sustainable and fair trade products	Entity	4.02	−1.84	0.069	5.35	−0.43	.666
	Incremental	4.80			5.54		
Have a linen (both towels and sheets) reuse program in all guest rooms	Entity	4.51	−0.60	0.551	5.59	0.21	.836
	Incremental	4.77			5.50		
Have installed low-flow showerheads and sink aerators	Entity	4.11	−0.20	0.844	5.41	0.14	.888
	Incremental	4.20			5.35		
Have switched to LED light bulbs in guest rooms, lobbies, and hallways	Entity	4.58	−2.25	0.026	5.99	1.98	.051
	Incremental	5.46			5.22		
Has switched to low-flow toilets or install toilet-tank fill diverters	Entity	4.04	−1.01	0.313	5.97	−0.11	.915
	Incremental	4.45			6.01		
Provides guests with bicycles, walking maps, and/or information on public transportation	Entity	4.30	−3.35	0.001	5.55	−0.14	.887
	Incremental	5.68			5.61		
Provides recycling bins in public areas (i.e., poolside), in the kitchen, guest rooms, and in the back office (including one at each desk)	Entity	4.17	−3.37	0.001	5.83	−0.34	.737
	Incremental	5.46			5.96		
Uses sensors and/or timers for areas that are infrequently used	Entity	4.74	−3.20	0.002	5.83	0.64	.523
	Incremental	5.81			5.62		

Results and discussion

Lay beliefs manipulation check

We conducted an independent sample *t*-test and found that participants in the entity (vs. incremental) condition reported higher beliefs that the world is relatively stable and fixed, $M_{\text{entity}} = 4.97$, $M_{\text{incremental}} = 4.17$, $t(109) = 2.46$, $p = .016$.

Preferences for sustainable offerings

Because biospheric values are a continuous variable, following prior research (Aiken & West, 1991), we mean-centered biospheric values in all our analyses and then conducted a moderation analysis to test our prediction using PROCESS Model 1 (Hayes, 2017). Specifically, we included lay beliefs (0 = entity, 1 = incremental) as the independent variable, biospheric values as the moderator, and preferences for sustainable offerings as the dependent variable.

Results revealed a significant main effect of biospheric values ($B = .75$, $t = 5.11$, $p < .001$). However, this was qualified by a significant interaction between biospheric values and lay beliefs ($B = -.54$, $t = -2.59$, $p = .011$). Table 2 presented the results for this and the subsequent study. Conditional effects at 1*SD* below the mean of biospheric values (among

those with low levels of biospheric values) showed a significant difference among those with incremental and entity beliefs ($B = .76$, $t = 2.60$, $p = .011$). However, such difference was nonsignificant at 1*SD* above the mean of biospheric values (among those with high levels of biospheric values) ($B = -.31$, $t = -1.07$, $p = .287$; see Figure 2). Table 1 describes more details for each of the 12 items. These findings provide evidence for Hypothesis 1.

Table 2. Moderated Regression Results (Studies 1 and 2).

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	Parameter	Coeff.	SE	t	p
Study 1 DV: Preferences for sustainable offerings	Constant	4.971	0.146	34.039	<.001
	Lay beliefs (LB; 1 = Incremental, 0 = Entity)	0.223	0.206	1.086	.280
	Biospheric values (BV)	0.750	0.147	5.114	<.001
	BV × LB	−0.535	0.207	−2.592	.011
Study 2 DV: Preferences for sustainable offerings	Constant	5.152	0.109	47.384	<.001
	Lay beliefs (LB; 1 = Incremental, 0 = Entity)	0.122	0.158	0.774	.439
	Biospheric values (BV)	0.750	0.105	7.160	<.001
	BV × LB	−0.363	0.160	−2.272	.024
Study 2 DV: Choice of sustainable attributes	Constant	2.112	0.134	15.759	<.001
	Lay beliefs (LB; 1 = Incremental, 0 = Entity)	0.185	0.195	0.950	.344
	Biospheric values (BV)	0.537	0.129	4.162	<.001
	BV × LB	−0.387	0.197	−1.963	.051

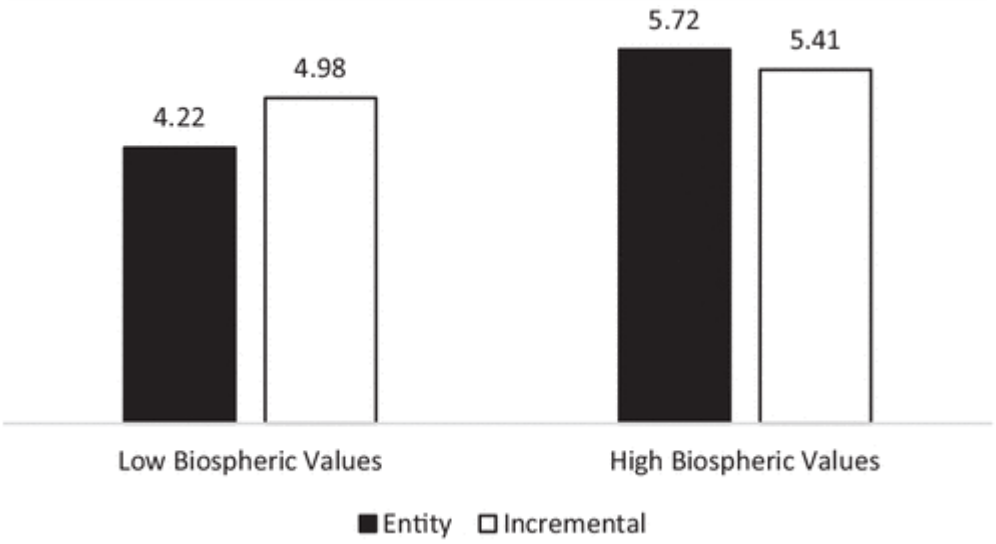

Figure 2. Preferences for sustainable offerings by lay beliefs at low (1*SD* below means) and high (1*SD* above means) levels of biospheric values (Study 1).

Discussion

Study 1 shows that among consumers with low levels of biospheric values, those holding incremental (vs. entity) beliefs have higher preferences for sustainable offerings of a hotel. In contrast, those with high levels of biospheric values show higher preferences for a hotel with sustainable offerings, regardless of their lay beliefs. These findings provide support for Hypothesis 1.

Study 2

Study 2 seeks to replicate the findings of Study 1, increase confidence of our findings, and extend Study 1 in three important ways. First, we include an additional dependent variable (choice of sustainable hotel attributes). The addition of another dependent variable is

important because we want to show that our predictions can be extended not only on how consumers evaluate different offerings of a hotel but also on how they might select a hotel based on its sustainable attributes. Second, we measure hope as the posited mediator to establish the underlying mechanism of our predictions (H2). Third, we also employ a different lay beliefs elicitation task using a hotel advertising message, which has been established by prior research in marketing (Septianto, 2020; Yorkston et al., 2010) and tourism research (Kim & Seo, 2019). Notably, the use of this elicitation task provides strong managerial implications by demonstrating that hotel managers may purposively elicit specific lay beliefs when promoting their sustainable offerings.

Method

This study employed a lay beliefs (incremental, entity) by biospheric values (continuous) between-subjects design. Participants included 169 U.S. residents (37% female, average age 34.03) recruited from the Amazon Mechanical Turk.

Similar to Study 1, participants first reported their biospheric values (α = .88). Afterward, participants evaluated a mock hotel advertisement. This advertisement used identical image with a different tagline. In the incremental condition: "Our world is dynamic and changing. We've been evolving for 100 years. Come and see for yourself." In the entity condition: "Our world is stable and fixed. We've been committed here for 100 years. Come and see for yourself." Participants were then primed to think about the tagline to manipulate their lay beliefs. We used the same manipulation check measure as in Study 1 (α = .90). As discussed, the use of a mock-up advertisement to elicit specific lay beliefs has been established by prior research in marketing and tourism research (Kwon et al., 2016; Seo et al., 2019; Septianto, 2020; Yorkston et al., 2010).

Adapted from prior research (Cohen-Chen et al., 2014, 2015), we measured hope using a single item on a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*): "I am hopeful about the outcomes of sustainability efforts happening in the world." In addition, research has suggested that three other positive emotions (joy, love, and positive surprise) can significantly influence tourists' experience and decision-making process (Hosany & Gilbert, 2010; Prayag et al., 2017). Hence, we measured these emotions ("inspiration" and "amazement" to measure positive surprise, α = .85; "caring" and "love" to measure love, α = .88; "joy" and "pleasure" to measure joy, α = .92) (Hosany & Gilbert, 2010) and also tested them as potential mediators.

For the first dependent variable, we used the same 12 items to those of Study 1 (α = .93; see Table 3 for the details of items). For the second dependent variable, we provided 10 hotel attributes and asked participants to choose the five most important attributes of a hotel. These attributes are: (a) Be luxurious; (b) Be close to the city center; (c) Have beautiful view; (d) Offer breakfast buffet; (e) Offer late check-out; (f) Donate leftover guest amenities, old furniture, and appliances to charities; (g) Have gift shop selling fair trade products; (h) Have a linen (both towels and sheets) reuse program in all guest rooms; (i) Support job and education for local people; (j) Use an energy management system for HVAC (heating, ventilation, and air conditioning) and lighting. Attributes 1 to 5 are not necessarily associated with sustainability (coded as 0), whereas Attributes 6 to 10 are associated sustainability (coded as 1). Hence, participants can score from 0 (*when they choose five regular attributes*) to 5 (*when they choose five sustainable-related attributes*). Importantly, to control for any

bias relating to the order of presentation, we randomize the order participants saw the first and the second dependent variables and all attributes within each question.

Table 3. Comparison for Each Offering by Lay Beliefs and Biospheric Values (Study 2).

Table 3. Comparison for Each Offering by Lay Beliefs and Biospheric Values (Study 2).

Offerings	Lay beliefs	Low biospheric values			High biospheric values		
		M	*t* value	*p* value	*M*	*t* value	*p* value
Buy guest amenities in bulk (i.e., use refillable hair and skin care dispensers)	Entity	3.90	−1.09	.278	5.16	0.34	.732
	Incremental	4.26			5.04		
Buy organic, fair trade, cruelty-free guest amenity products whenever possible (e.g., bedding, hair and body care)	Entity	4.17	−0.59	.555	5.88	0.92	.361
	Incremental	4.37			5.58		
Donate leftover guest amenities, old furniture, and appliances to charities	Entity	4.63	−1.29	.200	6.10	1.05	.295
	Incremental	5.08			5.73		
Use an energy management system for HVAC (heating, ventilation, and air conditioning), lighting, and so on	Entity	4.86	−2.22	.028	6.24	0.75	.455
	Incremental	5.48			6.04		
Have a gift shop that sells sustainable and fair trade products	Entity	4.08	−1.41	.161	5.79	2.06	.041
	Incremental	4.55			5.11		
Have a linen (both towels and sheets) reuse program in all guest rooms	Entity	4.21	−1.72	.087	5.91	0.66	.513
	Incremental	4.79			5.69		
Have installed low-flow showerheads and sink aerators	Entity	4.07	−1.46	.146	5.53	0.72	.473
	Incremental	4.58			5.28		
Have switched to LED light bulbs in guest rooms, lobbies, and hallways	Entity	4.80	−1.43	.156	6.22	1.44	.151
	Incremental	5.24			5.77		
Has switched to low-flow toilets or install toilet-tank fill diverters	Entity	4.41	−0.94	.350	5.50	−0.77	.445
	Incremental	4.70			5.75		
Provides guests with bicycles, walking maps, and/or information on public transportation	Entity	4.73	−1.25	.212	6.02	0.05	.958
	Incremental	5.10			6.00		
Provides recycling bins in public areas (i.e., poolside), in the kitchen, guest rooms, and in the back office (including one at each desk)	Entity	4.52	−2.52	.013	6.26	0.58	.562
	Incremental	5.27			6.09		
Uses sensors and/or timers for areas that are infrequently used	Entity	4.44	−2.59	.010	6.21	1.19	.235
	Incremental	5.21			5.85		

Results and discussion

Lay beliefs manipulation check

An independent sample *t*-test revealed that participants in the entity (vs. incremental) condition reported higher beliefs that the world is relatively stable and fixed, $M_{\text{entity}} = 4.94$, $M_{\text{incremental}} = 4.29$, $t(167) = 2.78$, $p = .006$.

Preferences for sustainable offerings

Similar to Study 1, we conducted a moderation analysis to test our prediction using PROCESS Model 1 (Hayes, 2017). Specifically, we included lay beliefs (0 = entity, 1 = incremental) as the independent variable, biospheric values as the moderator, and preferences for sustainable offerings as the dependent variable.

Results revealed a significant main effect of biospheric values ($B = .75$, $t = 7.16$, $p < .001$). However, this was qualified by a significant interaction between biospheric values and lay beliefs ($B = -.36$, $t = -2.27$, $p = .024$). Conditional effects at 1*SD* below the mean of biospheric values showed a significant difference among those with incremental and entity beliefs ($B = .49$, $t = 2.16$, $p = .033$). However, such difference was nonsignificant at 1*SD* above the mean of biospheric values ($B = -.24$, $t = -1.07$, $p = .284$; see Figure 3). These findings replicated the findings of Study 1.

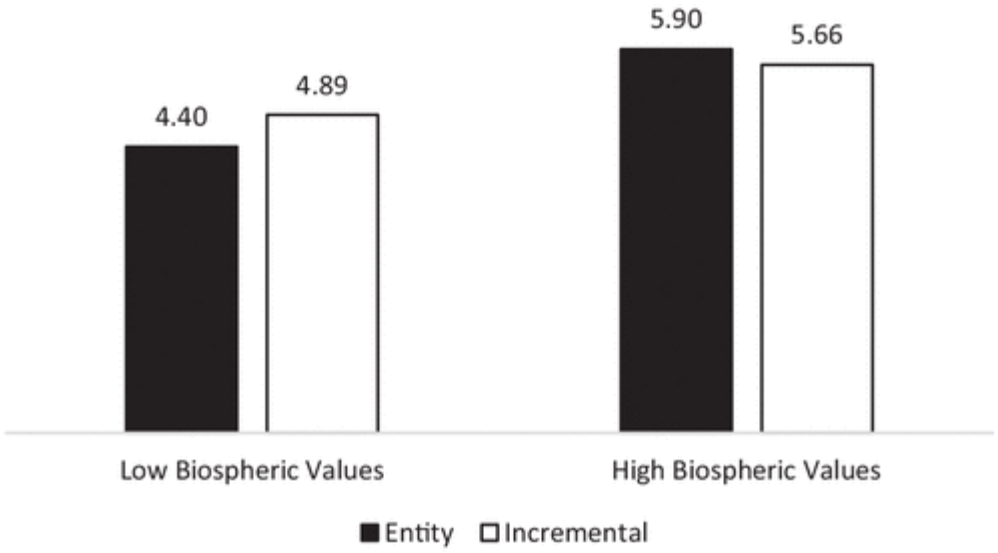

Figure 3. Preferences for sustainable offerings by lay beliefs at low (1*SD* below means) and high (1*SD* above means) levels of biospheric values (Study 2).

Choice for sustainable attributes

Because the change in the dependent variable (choice of hotel attributes) is equivalent at each level (between 0 and 5 attributes) and the variable is ratio scaled, a linear regression is appropriate (Rudd et al., 2018). Using PROCESS Model 1, we included lay beliefs (0 = entity, 1 = incremental) as the independent variable, biospheric values as the moderator, and choice for sustainable attributes as the dependent variable. Results revealed a significant main effect of biospheric values ($B = .54$, $t = 4.16$, $p < .001$). However, this was qualified by a marginally significant interaction between biospheric values and lay beliefs ($B = -.39$, $t = -1.96$, $p = .051$).

Conditional effects at 1*SD* below the mean of biospheric values showed a significant difference among those with incremental and entity beliefs ($B = .57$, $t = 2.06$, $p = .041$). However, such difference was nonsignificant at 1*SD* above the mean of biospheric values ($B = -.20$, $t = -.73$, $p = .466$; see Figure 4). These findings provided further support for Hypothesis 1.

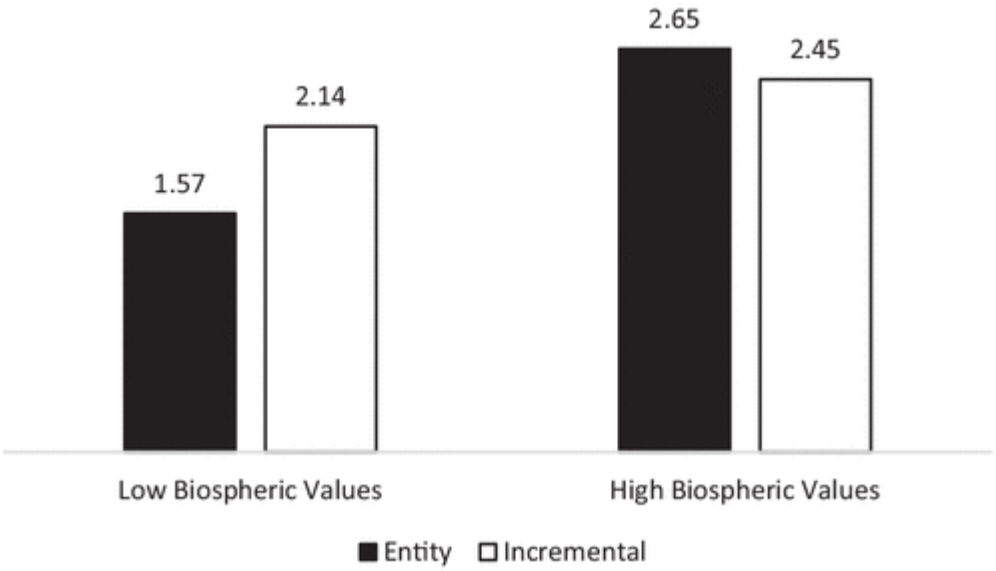

Figure 4. Choice for sustainable attributes by lay beliefs at low (1*SD* below means) and high (1*SD* above means) levels of biospheric values (Study 2).

Moderated mediation analyses

We predicted that the emotion of hope would mediate the effect of incremental (vs. entity) beliefs on preferences for sustainable hotel offerings, among consumers with low levels of biospheric values. A moderation analysis (Lay Beliefs × Biospheric Values) using PROCESS Model 1 examining the emotion of hope revealed a significant main effect of biospheric values (B = .67, t = 5.45, p < .001), a marginally significant main effect of lay beliefs (B = .35, t = 1.88, p = .062), and a marginally significant interaction effect (B = −.32, t = −1.67, p = .096). Specifically, conditional effect at 1*SD* below the mean of biospheric values showed a significant difference among those with incremental and entity beliefs (B = .67, t = 2.51, p = .013). However, such difference was nonsignificant at 1*SD* above the mean of biospheric values (B = .04, t = .13, p = .894), which was consistent with our predictions such that consumers adopting incremental beliefs (vs. entity beliefs) and low levels of biospheric values experience higher levels of hope.

To test the indirect effects, consistent with the conceptual model (see Figure 1), we performed a moderated mediation analysis using PROCESS Model 7 (Hayes, 2017; Hayes et al., 2017). We also included other positive emotions (joy, love, and positive surprise) (Hosany & Gilbert, 2010) as potential mediators in the model. As expected, we found that in the low levels of biospheric values, the indirect effect of hope was significant with 95% CI excluded 0 [.020, .445]. In contrast, in the high levels of biospheric values, the indirect effect was nonsignificant with 95% CI included 0 [−.154, .186].

We also conducted similar analysis to examine choice for hotel attributes (the second dependent variable). As predicted, in the low levels of biospheric values, the indirect effect of hope was significant with 95% CI excluded 0 [.021, .418]. In contrast, in the high levels of biospheric values, the indirect effect was nonsignificant with 95% CI included 0 [−.151, .177]. More importantly, we also found that positive surprise, love, and joy did not mediated our predicted effects (see Table 4).[2] These findings provided evidence for Hypothesis 2.

Table 4. Full Mediation Results (Study 2).

Table 4. Full Mediation Results (Study 2).

Antecedent	Hope (*M*)				Positive surprise (Alternative 1)			
	Coeff.	*SE*	*t*	*p*	Coeff.	*SE*	*t*	*p*
Constant	4.980	0.128	38.913	<.001	5.808	0.210	27.707	<.001
Lay beliefs (X)	0.350	0.186	1.883	.062	0.191	0.305	0.628	.531
Biospheric values (W)	0.672	0.123	5.448	<.001	1.075	0.202	5.322	<.001
X × W	−0.315	0.188	−1.674	.096	−0.459	0.308	−1.490	.138
Model summary	$R^2 = 0.195$, $F(3, 165) = 13.319$, $p < .001$				$R^2 = 0.178$, $F(3, 165) = 11.949$, $p < .001$			
Antecedent	Love (Alternative 2)				Joy (Alternative 3)			
	Coeff.	*SE*	*t*	*p*	Coeff.	*SE*	*t*	*p*
Constant	6.271	0.193	32.557	<.001	6.103	0.218	27.994	<.001
Lay beliefs (X)	0.237	0.280	0.846	.399	0.110	0.317	0.347	.729
Biospheric values (W)	1.184	0.186	6.384	<.001	0.959	0.210	4.565	<.001
X × W	−0.382	0.283	−1.347	.180	−0.417	0.321	−1.300	.195
Model summary	$R^2 = 0.253$, $F(3, 165) = 18.605$, $p < .001$				$R^2 = 0.136$, $F(3, 165) = 8.682$, $p < .001$			
Antecedent	Preferences for sustainable offerings (Y)				Choice of sustainable attributes (Y)			
	Coeff.	*SE*	*t*	*p*	Coeff.	*SE*	*t*	*p*
Constant	2.434	0.328	7.414	<.001	0.097	0.410	0.237	.813
Lay beliefs (X)	−0.045	0.153	−0.298	.766	0.040	0.191	0.207	.836
Hope (M)	0.351	0.063	5.561	<.001	0.337	0.079	4.273	<.001
Positive surprise (Covariate)	−0.005	0.071	−0.063	.950	0.045	0.089	0.507	.613
Love (Covariate)	0.292	0.067	4.370	<.001	0.168	0.083	2.018	.045
Joy (Covariate)	−0.138	0.071	−1.947	.053	−0.162	0.089	−1.826	.070
Model summary	$R^2 = 0.346$, $F(5, 163) = 17.211$, $p < .001$				$R^2 = 0.171$, $F(5, 163) = 6.721$, $p < .001$			
Biospheric values	DV: Preferences for sustainable offerings				DV: Choice of sustainable attributes			
	B	*SE*	LLCI	ULCI	*B*	*SE*	LLCI	ULCI
Path: Lay Beliefs → Hope → DV								
Low (−1*SD*)	0.234	0.130	.020	.445	.224	.122	.021	.418
High (+1*SD*)	0.012	0.104	−.154	.186	.012	.100	−.151	.177
Path: Lay Beliefs → Positive Surprise → DV								
Low (−1*SD*)	−0.003	0.063	−.106	.099	.029	.062	−.051	.144
High (+1*SD*)	0.001	0.045	−.088	.054	−.012	.046	−.096	.050
Path: Lay Beliefs → Love → DV								
Low (−1*SD*)	0.181	0.157	−.091	.423	.104	.105	−.047	.288
High (+1*SD*)	−0.042	0.129	−.236	.187	−.024	.080	−.154	.109
Path: Lay Beliefs → Joy → DV								
Low (−1*SD*)	−0.073	0.091	−.238	.048	−.085	.098	−.255	.058
High (+1*SD*)	0.042	0.079	−.073	.180	.050	.089	−.086	.201

Discussion

Study 2 extends the findings of Study 1 and shows that lay beliefs can be elicited using an advertising message, providing practical implications for marketers. Furthermore, we also examine a different dependent variable and show that among consumers with low biospheric values, those with incremental (vs. entity) beliefs report a greater number of sustainable attributes when selecting a hotel. More importantly, we establish that our predictions are driven by the emotion of hope.

General Discussion

The current research examined the role of lay beliefs in shaping consumers' sustainable behavioral intentions. Study 1 found that among consumers with low levels of biospheric values, those holding incremental (vs. entity) beliefs had higher preferences for sustainable offerings of a hotel. In contrast, those with high levels of biospheric values showed higher preferences for a hotel with sustainable offerings, regardless of their lay beliefs. Study 2 replicated the findings of Study 1 and further examined how people rated the importance of sustainable attributes when selecting a hotel. Importantly, Study 2 also established the underlying process such that the emotion of hope mediated the predicted effects.

Theoretical contributions

This research makes three theoretical contributions. First, our research contributes to the tourism marketing literature by providing empirical evidence on the importance of lay beliefs about the world in the sustainable tourism context. This is significant because even though there is much work examining lay beliefs about individual and group levels (Blackwell et al., 2007; Cohen-Chen et al., 2014; Leith et al., 2014; Schumann & Dweck, 2014), there is limited understanding of how lay beliefs about the world can influence individual judgments and decisions. More importantly, our research is among the first papers, apart from the study by Seo et al. (2019), showing that consumers adopting entity (vs. incremental) beliefs can influence consumer decision-making related to tourism marketing. However, our research diverges from prior work (Seo et al., 2019). Specifically, Seo et al. (2019) investigates the role of lay beliefs about human characteristics in the context of luxury tourism, whereas we test the role of lay beliefs about the world in the context of sustainable tourism.

Furthermore, some scholars have argued that luxury and sustainability may be incompatible and in opposition to one another (Achabou & Dekhili, 2013; Kapferer & Michaut-Denizeau, 2014). If this is true, then our research is somewhat in line with Seo et al. (2019) by highlighting the *contrasting* effect, such that incremental (vs. entity) beliefs increase preferences for sustainable offerings. However, the relationship between luxury and sustainability is more complex than that (e.g., the existence of sustainable luxury brand) (Kapferer, 2010; Septianto, Seo, & Errmann, 2020) and thus, this examination of sustainable luxury concept is beyond the scope of the current research.

Second, we establish that hope mediates the predicted effect. This contribution is meaningful because prior research linking lay beliefs and sustainable behaviors does not test the causal relationship nor identify the underlying process (Soliman & Wilson, 2017). The findings of the current research also contribute to the literature on emotion and sustainable behavior in general because although some studies have predicted the relevance of guilt (Antonetti & Maklan, 2014; Han et al., 2017), gratitude (Septianto, Kemper, & Northey, 2020), pride (Antonetti & Maklan, 2014; Septianto, Seo, & Errmann, 2020), less empirical evidence supports the role of hope (Nabi et al., 2018).

In addition, research examining the emotion of hope (Nabi et al., 2018; Smith & Leiserowitz, 2014) has simply examined the effects of hope but yet to explore its antecedents (i.e., when this emotion can be elicited). Hence, by identifying and demonstrating how incremental (vs. entity) lay beliefs can elicit hope, leading to higher engagements in sustainable behaviors, this research adds to our understanding of the conditions under which hope can arise and affect consumers' sustainable behaviors. We also rule out other positive emotions (i.e., love, joy, and positive surprise), which are associated with common tourism hedonic experience (Hosany et al., 2015; Hosany & Gilbert, 2010), as alternative plausible explanations. These highlight the unique aspect of hope in influencing sustainable behaviors.

Third, prior literature has established that consumers with high levels of biospheric values are more likely to engage in sustainable behaviors (Han, 2015; Kiatkawsin & Han, 2017; Landon et al., 2018) because they see themselves as part of the nature (Stern & Dietz, 1994; Stern et al., 1999). The findings of our research support prior research such that consumers with high levels of biospheric values are more likely to prefer sustainable hotel attributes (Han, 2015; Kiatkawsin & Han, 2017; Landon et al., 2018). More importantly, the current research reconsiders and extends prior findings with respect to consumers with low levels of

biospheric values. We find that they could be more engaged in sustainable behaviors when making travel decisions, depending on their lay beliefs (incremental vs. entity). Thus, these findings highlight more nuanced influences of biospheric values on sustainable behaviors.

In fact, while biospheric values are considered to be relatively stable (Feather, 1995; Schwartz, 1994; Stern, 2000), lay beliefs can be elicited using an article (Study 1) or an advertisement message (Study 2). Findings of Study 2 are particularly important from the message framing perspective because there is limited research examining how to develop effective advertising strategy in promoting sustainable behaviors (Tölkes, 2018). Past research has suggested that emotional (Wehrli et al., 2017), communication of personal benefits (Hardeman et al., 2017), and low-fluency messages (Hanks et al., 2016) might lead to favorable evaluations. We add to this literature by introducing how incremental (vs. entity) lay beliefs elicited via advertising message can also be effective in enhancing sustainable behaviors, regardless of consumers' biospheric values.

Managerial implications

The findings of this research offer several managerial implications. First, as discussed, although personal values can have a significant influence on consumers' travel decision-making (Han, 2015; Kiatkawsin & Han, 2017; Landon et al., 2018; Megeirhi et al., 2020), they are often stable and thus difficult to change (Feather, 1995; Schwartz, 1994; Stern, 2000). Hence, while prior research has established the link between high levels of biospheric values and sustainable behaviors (Han, 2015; Kiatkawsin & Han, 2017; Landon et al., 2018), hotel managers and tourism marketers might not be able to extrapolate such findings in their decisions. This is especially true for consumers holding low levels of biospheric values. In other words, one key practical implication arising from prior research implies that such consumers would *not* engage in sustainable behaviors when making their travel decisions. This also means a potentially important segment of the market may be left unattended. For example, approximately 20% of our sample reported low levels of biospheric values (i.e., those who score 4 or below out of 7 points in their biospheric values). Therefore, attracting the unsustainable consumers to consume a sustainable product or service helps to promote greater sustainable tourism and consumption, influencing positive behavior change (Truong & Hall, 2013).

Specifically, for stimulating positive behavior change, the research demonstrates that simply focusing on message framing may affect sustainable behavior. Unfortunately, bookings of sustainable tourism products remain low, with many suggesting the key to increasing demand for sustainable tourism is effective sustainability communication (Tölkes, 2020). However, most advertisements for sustainable tourism target emphasize the biospheric–altruistic aspect (Vinzenz et al., 2019), not appealing to current unsustainable consumers. Also concerning is that research on effective advertising strategies for encouraging sustainable behaviors is still lacking in general (Tölkes, 2018). Our findings highlight that social marketers and sustainable tourism advertisers can appeal to unsustainable consumers who have low levels of biospheric values as incremental (vs. entity) lay beliefs elicited through an advertising message can encourage sustainable behaviors. Therefore, future research is ripe for examining the effect of message framing and communication strategies, especially for those who are do not hold biospheric–altruistic values.

Second, the findings of the present research demonstrate how the relative salience of particular lay beliefs can be purposively activated using advertising and marketing

communications. That is, when developing brand positioning, hotel managers can consider the extent to which incremental or entity lay beliefs are emphasized (Seo et al., 2019). In this case, our findings suggest that endorsing incremental lay beliefs is more beneficial to promote sustainable hotel offerings. Therefore, hotel managers could highlight their innovation and "newness" (i.e., growth mind-set congruent) in marketing communications to make the hotel congruent with incremental lay beliefs (Seo et al., 2019). Consequently, the findings of this research provide actionable managerial implications.

Limitations and future research

Despite the aforementioned implications of this research, we acknowledge several limitations of this research. First, similar to most research in this area (Kiatkawsin & Han, 2017; Landon et al., 2018), our work does not examine actual behavior. However, we have used different dependent variables; specifically, we utilize choice rather than simply self-reported intentions. Nonetheless, many studies report the consistent gap between personal values and behavior (Kollmuss & Agyeman, 2002). Many consumers are unaware of their travel decisions on the environment (Gössling et al., 2006) and even if they do, can suffer from a disconnect between their environmental attitudes, values and behavior (Juvan & Dolnicar, 2014). Hence, future research should examine behavioral outcomes. Second, we focus on examining consumers' preferences for sustainable offerings of a hotel (Barber & Deale, 2014). However, there are different contexts in which tourists can engage in sustainable behaviors, such as travel mode, and tourist activities and excursions. It would thus be of interest to extend our findings across different tourism contexts.

Third, we acknowledge that the sample sizes of our studies are relatively small and only from a specific country (the United States). Although we have determined the sample size based on recommendation from prior research (Kim & Seo, 2019), it would be important for future studies to replicate our findings using a larger sample size and recruit participants from different countries or cultural contexts. This issue is also associated with the marginal effect that we found in Study 2 (Lay Beliefs × Biospheric Values on Hope). Future research thus should use larger sample sizes to further investigate the mediating role of hope. Finally, we acknowledge the limitation of using a single-item mediator. In particular, while we use this single-item by adapting from prior research (Cohen-Chen et al., 2014, 2015), emotion is a complex construct, and thus, future research can employ different ways and measurements of emotion.

Overall, our research indicates that lay beliefs can be employed in advertising messages or other communication mediums to increase tourists' preferences for sustainable offerings of a hotel, even among those with low levels of biospheric values.

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Notes

1.The only other study that has examined the relevance of lay beliefs in tourism marketing literature is the study by Seo et al. (2019). However, the present research diverges from that work in two ways. First, we examine the context sustainable tourism, while prior work studies the context of luxury tourism. Second, we investigate individuals' lay beliefs about the changeability of the world, whereas Seo et al. (2019) particularly examine the lay beliefs about human characteristics. We provide further discussions in the general discussion section.

2.Examining preferences for sustainable hotel offerings, we found that increasing love was associated with higher preferences for sustainable offerings ($B = .29$, $t = 4.37$, $p < .001$), whereas increasing joy was associated with lower preferences for sustainable offerings ($B = -.07$, $t = -1.48$, $p = .053$). Examining choice for hotel attributes, increasing love was associated with increasing number of choice for sustainable attributes ($B = .17$, $t = 2.02$, $p = .045$), whereas increasing joy was associated with decreasing number of choice for sustainable attributes ($B = -.16$, $t = -1.82$, $p = .070$). These findings suggested that while other positive emotions (i.e., love, joy, and positive surprise), which are associated with common tourism hedonic experience (Hosany et al., 2015; Hosany & Gilbert, 2010), can influence consumer responses to sustainable hotel offerings, these emotions did not explain our predicted effects.

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