EXAMINING TREKKERS' ENVIRONMENTALLY FRIENDLY BEHAVIOR USING AN EXTENDED MODEL OF GOAL-DIRECTED BEHAVIOR (MGB) AND A NEW ECOLOGICAL PARADIGM SCALE (NEP)

Tulsi Paudel[1], Wen Ya Li[2], Yeong Gug Kim[3]

[1] Sanming University, Entrepreneurial Management College, China, tulsi101@gmail.com;
[2] Sanming University, Entrepreneurial Management College, China, wenyasmail@gmail.com;
[3] Kangwon National University, College of Business Administration, South Korea, yeongkim@kangwon.ac.kr (corresponding author).

Abstract: *Tourism has a substantial environmental impact, and nature-based tourism is particularly vulnerable to tourists' activities. Individuals must be aware of the consequential ecological effects during nature-based tourism activities such as trekking. Trekking is a widespread nature-based tourism activity in fragile mountainous and hilly regions. The trekkers' activities extensively affect the conservation of vegetation along the trail. Therefore, it is essential to study trekkers' attitudes, intentions, and behavior towards the environment. The objective of this study is to investigate the pro-environmental behaviors of trekkers. The goal-directed behavior (MGB) model framework and a new ecological paradigm scale (NEP) were integrated to examine trekkers' environmental decision-making process. The new ecological paradigm (NEP) scale measured trekkers' environmental concerns, whereas the model of goal-directed behavior (MGB) explored environmentally friendly trekking intentions. The extended model analyzed 310 responses from trekkers who had trekking experience in Nepal. Statistical analyses, such as confirmatory factor analysis, descriptive analysis, reliability, and validity test, were performed with SPSS 24.0. Furthermore, structural equation modeling was conducted using AMOS 22.0 to test the significance of the developed hypotheses. This study revealed that trekkers are concerned about the environment and are aware of the earth's resource limitations. Moreover, the significant role of emotion in the decision-making process was identified. The perceived behavioral control influenced both the desire and intention of environmentally friendly trekking. Additionally, desire significantly influenced the intention to perform environmentally friendly activities. However, the trekker's attitude and subjective norms did not correlate substantially with desire. The obtained results indicate that the proposed extended model helps to understand the environmental behavior of trekkers. The theoretical and practical implications of this study are also discussed.*

Keywords: *Model of goal-directed behavior (MGB), theory of planned behavior (TPB), new ecological paradigm (NEP), pro-environmental behavior, trekking tourism.*

JEL Classification: *M10, M30, M31, M38, Z30, Q50.*

Introduction

Tourism is responsible for the movement of people worldwide, and the tourism industry has an enormous contribution to the global economy (Toral-Granda et al., 2017). According to World Travel and Tourism Council (WTTC, 2019), the tourism industry contributed 10.4% of the world's service sector's GDP and generated 319 million jobs, or 10% of total employment, in 2018. However, tourism is also one of the largest environmental resource consumers, accounting for nearly 5% of global CO_2 emissions (UNTWO, 2017). Furthermore, environmentally friendly activities such as responsible tourism, sustainable tourism, and ecotourism improve local people's quality of life and minimize environmental problems (Caruana et al., 2014). Therefore, it is necessary to emphasize environmentally friendly tourism activities.

People are becoming increasingly interested in the diverse form of nature-based tourism activities. However, it is essential to care about the condition of nature while engaging in leisure activities. Among various nature-based tourism activities, trekking is most common in mountainous regions. Trekking enhances mobility, tourism promotion, and economic benefits to locals and stakeholders (Høyer, 2000). Nevertheless, trekking possesses extreme seasonality with high public pressure on the environment, and excessive trekking activities negatively impact the region's biodiversity (Kołodziejczyk, 2020). The impact of trekking on the fragile mountainous environment is comparatively less researched from many academic viewpoints. In addition, the measurement of tourist behavior through environmental behavior variables has rarely been evaluated. Recently researchers have shown interest in identifying and segmenting the motivation and interest of eco-urban tourists (Formica & Uysal, 2001) as behaviors and attitudes are predictors of participation or action. In addition, several studies have discussed the predictors of behavior and behavior intentions in individuals. As a result, there has been an increasing focus on human behavior and attitudes in evaluating environmental and socioeconomic variables (Dunlap et al., 1992).

The theory of planned behavior (TBP) is the most used behavioral theory to integrate environmental concerns. Several researchers integrated the new ecological paradigm (NEP) scale with the TPB to evaluate participants' pro-environmental values (Lee & Moscardo, 2005). Others used Perugini and Baggozi's (2001) goal-directed behavior model (MGB) to integrate environmental aspects into the decision-making process. Few studies have attempted to study pro-environmental behavior using the tourists' decision-making process using the MGB. For example, Song et al. (2012b) investigated environmentally friendly perceptions of participants in mud festivals and found that participants' perceptions have positive and casual relationships with the constructs of the MGB.

This study emphasizes Nepal, a mountainous country, with almost 80% of its area belonging to hilly and snow-covered mountains. Nepal has numerous trekking trails, including the Everest Basecamp Trail, Kanchenjunga Basecamp Trail, Makalu Basecamp Trail, Annapurna Basecamp Trail, and Rara Khaptad Trekking Trail (Upadhya, 2018), to name a few. Trekking tourism is a part of outdoor recreation, popular in Nepal, being an integral part of mountain tourism (Cole, 2004). According to MCTCA (2020), almost 16.52% of tourists visit Nepal for adventure, including trekking and mountaineering. There is no exact data available for domestic trekkers; however, it is believed that the number of domestic trekkers is increasing exponentially. According to WTTC (2021), Domestic visitor spending in 2019 was 57%, indicating the growing domestic tourist inflow. Increased trekking activity improves the region's economic stability but poses significant environmental challenges, such as deforestation, waste, sanitation, and litter (Nyupane et al., 2014). For instance, the Annapurna Circuit trekking route, one of the busiest trails in Nepal, is seeing littering problems because of the surge in domestic trekkers (Gurung & Pariyar, 2017). Thus, trekkers need to be more concerned about the negative environmental impact of their activity in vulnerable hilly and mountainous areas.

Environmentally friendly trekking behavior refers to the decision-making process of those who perform trekking activities having a minimal negative impact on the trekking trail and its surroundings. The term environmentally friendly trekking is often used interchangeably with eco-friendly trekking (Lee et al., 2013) and sustainable trekking or hiking (Dümmler, 2012; Novo, 2021; Reuter & Pechlaner, 2012). Waste management, minimizing disturbances

to wildlife and natural habitat along the trail, supporting the local population, preventing trail degradation, preventing wildfires, and avoiding illegal littering are just a few examples of environmentally friendly activities (Kays et al., 2017; Popani et al., 2020). Trekkers aware of environmentally friendly trekking are more likely to participate in such activities, which helps preserve trekking trails and biodiversity.

Tourism has a significant environmental impact, and the environment is particularly vulnerable to tourists' activities. Individuals must be aware of consequential environmental effects during nature-based tourism activities such as trekking. For ecological sustainability, conserving flora and fauna throughout the trekking activities is inevitable. Unfortunately, studying environmental practices concerning human behavior in nature-based tourism is inadequate. Specifically, there has been little research on trekkers' environmental decision-making process. Therefore, studying trekkers' attitudes, intentions, and environmental behavior is essential to preserve the environment.

This study explores trekkers' concern for the environment using the new ecological paradigm (NEP) scale and investigates the behavioral intention for environmentally friendly trekking embracing the goal-directed behavior model (MGB) approach.

1. Literature Review
1.1 Environmental Concerns (New Ecological Paradigm)

The new ecological paradigm (NEP) evolved from the new environmental paradigm described by Dunlap and Van Liere (1978). Prior to the development of NEP, the dominant social paradigm (DSP) was used to address the common concerns about perceived or accepted values, behaviors, beliefs, and convictions about wealth, rapid development, and technological advances to explain the perception of environmental problems (Dunlap & Van Liere, 1978). The NEP scale has been commonly used to evaluate and contrast various community environmental attitudes (Caron, 1989). In addition, the revised

Tab. 1: Revised NEP statements

No.	Statements
1	We are approaching the limit of the number of people the earth can support.
2	Humans have the right to modify the natural environment to suit their needs.
3	When humans interfere with nature, it often produces disastrous consequences.
4	Human ingenuity will ensure that we do not make the earth unlivable.
5	Humans are severely absent environment.
6	The earth has plenty of natural recourses if we just learn how to develop them.
7	Plants and animals have as much right as humans to exist.
8	The balance of nature is healthy enough to cope with the impacts of modern industrial nations.
9	Despite our special abilities, humans are still subject to the laws of nature.
10	The so-called ecological crisis facing humankind has been greatly exaggerated.
11	The earth is like a spaceship with very limited room and resources.
12	Humans were mean to rule over the rest of nature.
13	The balance of nature is very delicate and easily upset.
14	Humans will eventually learn enough about how nature works to be able to control it.
15	If things continue on their present course, we will soon experience a major ecological catastrophe.

Source: Dunlap et al. (2000)

NEP statements (Tab. 1) for assessing the relationship between ecological perceptions and knowledge of the environment are also studied (Edgell & Nowell, 1989). Furman (1998) categorized NEP statements into three factors: natural balance, growth limit, and human over nature, while Taskin (2009) described NEP factors such as stable economy, human exemption paradigm, growth limitations, and natural balance in his research.

Several researchers have used the NEP scale to investigate environmental attitudes (Lee & Moscardo, 2005; Wurzinger & Johansson, 2006). Earlier research mainly focused on descriptive analysis of NEP scores, environmental attitudes and behaviors (Luzar et al., 1995). However, researchers criticized the original new ecological paradigm (NEP) scale. Lundmark (2007) argued that the NEP scale captures prominent anthropocentrism, whereas the environmental perspective is 'shallow' rather than 'deep green' and overlooks critical parts of the modern environmental ethics debate. In addition, researchers have argued that the NEP scale cannot accurately measure participants' worldviews (Lalonde & Jackson, 2002). The NEP scale's dimensionality has been under considerable debate, which uses a single dimension to implement and support a perspective for a simple calculation (Lalonde & Jackson, 2002; Lundmark, 2007). The NEP scale is used in sociological and environmental research, as no other instrument has been widely accepted to measure environmental worldviews. This scale facilitates researchers to compare across types of study, population types, and time. The growing research interest in the environmental and ecological sectors allows for testing the NEP scale's reliability and validity. However, researchers frequently questioned its reliability and completeness from different aspects. Researchers have been integrating the NEP scale with various behavioral frameworks. This study also integrated the NEP scale with the MGB model to investigate trekking tourists' environmentally friendly behavioral intentions.

1.2 Model of Goal-Directed Behavior (MGB)

The theory of planned behavior (TPB) is developed form of the theory of reasoned action (TRA), which explains the relationship between behavior and human action (Fishbein & Ajzen, 1975). The theory of planned behavior (TPB) indicates that behaviors are determined by intentions, attitudes (beliefs about a behavior), and subjective norms (beliefs about others' attitudes towards a behavior) (Ajzen, 1985). The TPB relies on people's rational and reasonable decisions to participate in specific tasks or actions to assess their information. The model of goal-directed behavior (MGB) (Fig. 1) was developed based on the theory of planned behavior (TPB). Perugini and Bagozzi (2001) first created the MGB, and then various authors recognized it as a helpful tool to explore an individual's behavioral decision-making process. The MGB was developed by incorporating three additional constructs into the existing TPB model. The first construct is desire, one of the model's core behavior-driven elements. The second is emotion, where positive and negative anticipated emotions are essential in decision-making. Moreover, the third is the frequency and recency of past behaviors, and it has been believed that past actions or patterns are a central determinant of human desire, intention, and behavior (Perugini & Bagozzi, 2001).

As the critical predictor of intention, desire mediates attitudes, subjective norms, perceived behavioral control, and anticipated emotions within the MGB (Bagozzi, 1992). Attitudes cannot trigger intention without desire (Perugini & Bagozzi, 2001). Expected effective responses to the behavior's performance are also important determinants of intention (Conner & Armitage, 1998; Triandis, 1977). Individuals may have forward-looking feelings about future actions in an uncertain situation (Gleicher et al., 1995). Positive and negative emotions predict motivation and contribute to the complex self-regulatory process indicated by the performance or evaluation of failure (Carver & Scheier, 1990). Past behaviors are considered a proxy of habits and should influence both desire and intention (Conner & Armitage, 1998) and have been theoretically and empirically demonstrated to influence desire and intention (Perugini & Bagozzi, 2001). Past behavioral influence has affected individual desire and intention (Bagozzi & Warshaw, 1992).

Established socio-psychological theories have always needed to be changed to integrate new constructs in a specific situation (Ajzen, 1991). Bagozzi (1992) defined the process as expanding and deepening the existing theory. Researchers have modified the MGB

in tourism and hospitality-related environments by incorporating new constructs. For example, Han and Ryu (2012) explained MGB incorporating belief factors (e.g., behavioral beliefs, normative beliefs, and control beliefs) and salient referents (e.g., switching costs and commitment) in the rebuying decision making process in the context of restaurants and dining. By integrating awareness frameworks, Lee et al. (2012) developed an extended MGB to investigate potential travelers' decision-making processes. Song et al. (2012a) extended the MGB by adding a new variable, 'perception of responsible gambling strategy (PRGS),' to understand the behavioral intentions of casino visitors. Similarly, Meng and Han (2016) employed MGB to investigate the environmental perceptions of bicycle travelers. They incorporated environmental connectedness and environmental behaviors in the existing MGB framework. A recent study by Bui and Kiatkawsin (2020) also extended MGB to study hard-adventure tourist visit intention, adding two new variables: social media consumption and hardy tourism knowledge. The MGB has been frequently used to investigate consumer behavior in tourism and hospitality research; however, previous research has yielded mixed results regarding the casual relationships between MGB variables (Chiu & Cho, 2021). The present study usages the original MGB framework incorporating a new variable, environmental concern, and investigates the environmentally friendly intentions of trekkers. The environmental concern variable is generated using new ecological paradigm (NEP) framework.

1.3 Proposed Framework and Hypotheses

Environmental concern is a general attitude towards environmental protection, a critical determinant of changing people's behaviors to become more environmentally friendly (Bamberg, 2003; Dunlap & Van Liere, 1978). With the increase in environmental issues, researchers have addressed the role of motivation in performing specific behaviors related to the environment (Maloney & Ward, 1973). According to Bamberg (2003), environmental concerns directly affect the perception of normative, behavioral, and control beliefs and subjective norms and perceived behavioral control. Environmental concern positively influences attitude, which positively influences the purchase intention of green brands (Ahmad & Thyagaraj, 2015). Moreover, environmental concern has a strong attitude toward conserving the environment (Balderjahn, 1988). Therefore, environmental concern is considered one of the determents of eco-friendly consumption. Based on the previous literature, the assumption can be made that trekking tourists' environmental concerns influence their attitudes towards environmentally friendly activities. Therefore,

Fig. 1: Model of goal-directed behavior
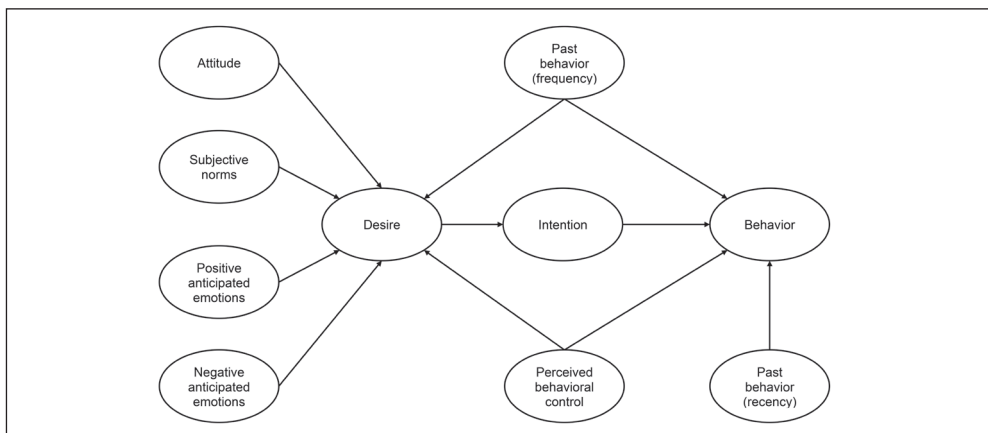
Source: Perugini and Bagozzi (2001)

the first hypothesis (*H1*) of this study is proposed as follows:

H1: Environmental concern has a positive relation to attitudes.

An individual tends to assess the potential benefits or losses from a particular behavior when deciding whether to get involved in specific action (Baker et al., 2007). Similarly, when the predicted effects of that activity are positively measured, it can be concluded that one would have a strong desire to engage in the behavior (Baker et al., 2007). The attitude towards a particular behavior signifies the general assessment of the behavior and affects one's readiness to participate in that behavior (Song et al., 2012a, 2012b). Numerous MGB studies have established the effect of attitude on desire (Lee et al., 2012; Perugini & Bagozzi, 2001). Thus, it can be concluded that if a trekker develops a positive attitude toward environmentally friendly trekking, the desire for eco-friendly trekking is strengthened. Therefore the second hypothesis (*H2*) is proposed as follows:

H2: Attitude has a positive relationship with desire.

Fishbein and Ajzen (1975) defined the subjective norm as perceived social pressure on whether to perform a particular behavior. An individual's decisions and actions are highly subjective to the influence of prominent referents (Cheng et al., 2006). Ajzen (1988) argues that central referents are individuals or groups believed to approve or disapprove of one's behavioral performance. He added that relevant, prominent referents are often parents, partners, close friends, colleagues, and, in some cases, figures like physicians and accountants. According to Ajzen (1988, p. 121), "People who believe that most of the referents they are compelled to comply with will feel social pressure to do so". Song et al. (2012b) revealed that subjective norms are crucial in forming desire. Desire can be reinforced when a subjective norm facilitates better performance in situations where other factors that affect behavioral intention remain unaffected (Lee et al., 2012; Song et al., 2012b). Therefore, it can be assumed that if an individual perceives that other people will evaluate environmentally friendly trekking as a beneficial activity, the willingness of the person to participate in an environmentally friendly trekking activity may increase. Therefore, the third hypothesis (*H3*) is proposed as follows:

H3: Subjective norm has a positive relationship with desire.

The TPB does not consider the emotional features of behavioral intention (Perugini & Bagozzi, 2001). According to Triandis (1977), people may be emotionally forward-looking about uncertain future actions. Bagozzi and Pieters (1998) argued that anticipating psychological benefits while performing a specific behavior leads to positive anticipated emotions. In contrast, the expectation of psychological damage from failing to perform such behavior contributes to negative anticipated emotions (Bagozzi & Pieters,1998). These emotions contribute to the complex self-regulatory process that evaluates behavioral success or failure (Carver & Scheier, 1990). Gleicher et al. (1995) noted that behavioral intent and actual behavior influence these predicted emotions. He further identified these anticipated emotions as prefectural, which affect intention and behavior. However, negative anticipated emotion on desire was statistically insignificant concerning tourist behavior (Lee et al., 2012; Song et al., 2012b). The combination of positive anticipated emotion about target achievement and negative anticipated emotion related to goal failure predicts desire, ultimately leading to goal pursuit (Perugini & Bagozzi, 2001). Positive and negative anticipated emotions significantly correlate with desire (Meng & Choi, 2016). Leone et al. (2004) claimed that expected emotions affect behavioral motivation because the structures of emotions reflect the hedonic motive of fostering a favorable situation and preventing a negative situation. Hence, following the above literature, it can be assumed that trekkers' anticipated emotions affect their desire. Thus, this study proposed hypotheses *H4* and *H5* as follows:

H4: Positive anticipated emotion has a positive influence on desire.

H5: Negative anticipated emotion has a negative influence on desire.

According to Perugini and Bagozzi (2001), behavioral intention is improved if resources or opportunities are organized for one's desire to perform a specific behavior. Nonetheless, if someone is in a situation where the resources or incentives are unavailable, their motivation

for action and behavioral purpose will be diminished (Song et al., 2014). For example, if individuals believe that they have the necessary resources (such as time and means of transportation) to go on vacation, they will be more likely to do the activity (Song et al., 2014). The effect of perceived behavioral control on the dimension of desire is non-volitional in the MGB (Lee et al., 2012). When necessary resources or incentives to execute the behavior are fully prepared, desire and behavioral intention for specific action increase (Perugini & Bagozzi, 2001). For example, if an individual has sufficient resources or opportunities to attend a festival, this can reinforce the desire and behavioral intention to go to that event (Song et al., 2014). Perugini and Bagozzi (2001) stated that perceived behavioral control reinforces an individual's desire, behavioral intention, and actual behavior. The present study also assumes that trekkers' perceived behavior control significantly influences their desire to act more environmentally friendly. Therefore, the two hypotheses based on these concepts are:

H6: Perceived behavioral control has a positive relationship with desire.

H7: Perceived behavioral control has a positive relationship with behavioral intention.

In previous studies on the decision-making process, desire has not been considered a variable to bridge a gap between cognitive and conative processes (Bagozzi, 1992; Lee et al., 2012; Perugini & Bagozzi, 2001). Perugini and Bagozzi (2001) argued that if someone has a propensity for specific activities due to deep thoughts or feelings, they will be incentivized to undertake the related behavior. They added that, although they may have ample confidence to perform a specific behavior, the action may not be executed as a motivating commitment to that behavior without desire. Desire is a state of mind by which an entity has a personal incentive to accomplish an action or a purpose (Perugini & Bagozzi, 2001). In the MGB, desire mediates the initial three antecedents of the TPB and behavioral intention by capturing a higher proportion of total behavioral intention variance (Perugini & Bagozzi, 2001). Furthermore, desire has predicted visitors' intention at the festival to investigate eco-related variables (Song et al., 2012b; Song et al., 2014). Therefore, this study assumes that desire is crucial in trekkers' environmentally friendly intentions. Thus, the following hypothesis is proposed:

H8: Desire has a positive relationship with behavioral intention.

Fig. 2: Proposed research model
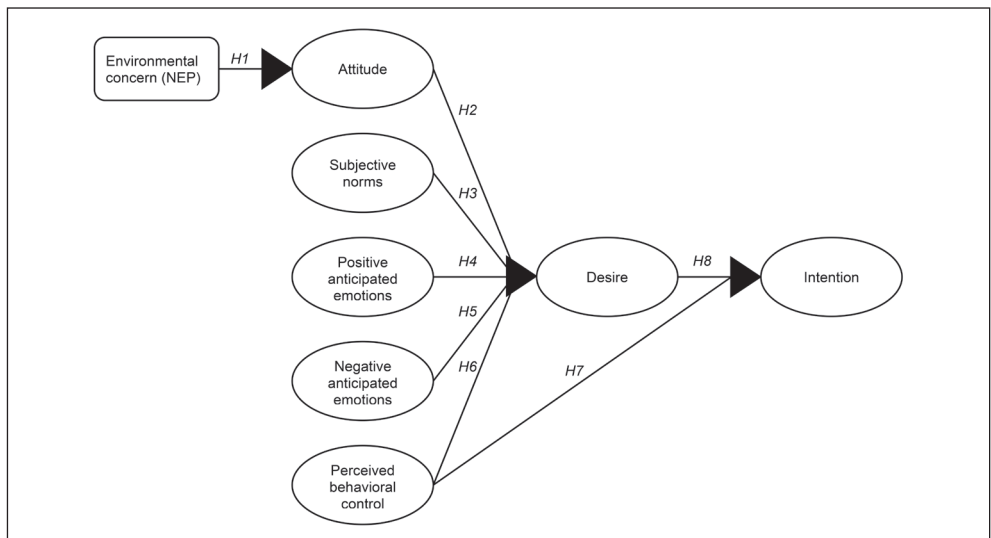
Source: own

The research model (Fig. 2) has been proposed using the eight hypotheses above. The two theoretical frameworks new ecological paradigm scale (Dunlap et al., 2000) and the model of goal-directed behavior (Perugini & Bagozzi, 2001), are integrated to form a proposed theoretical framework.

2. Research Methodology
2.1 Research Instruments
The primary purpose of this paper is to investigate the pro-environmental behavioral intention of trekkers. Close-ended self-administered questionnaires were used to measure trekkers' attitudes and behavioral intentions. The new ecological paradigm (NEP) scale (Dunlap et al., 2000) investigated the respondents' environmental concerns, and the model of goal-directed behavior (MGB) (Perugini & Bagozzi, 2001) was used to determine the intention to participate in environmentally friendly activities. The original MGB was modified to fit the context of environmentally friendly trekking. The questionnaires were adapted from previous literature, and statements were revised according to the trekking context and reviewed by experts. The selected 36 statements were tested with an initial pilot study of 50 responses. According to the pilot study results, unnecessary statements were removed and improved 30 statements were used for the main survey.

Three statements of the revised NEP scale adapted from Dunlap et al. (2000) were used to determine environmental concerns. Our proposed the extended MGB framework has eight constructs, and all constructs were measured with relevant statements. Trekkers' attitudes and subjective norms were measured with five items, whereas perceived behavior control was evaluated with two items. Intention and desire were measured with three statements. Anticipated emotions were categorized into nine items, five for positive anticipated emotions and four for negative anticipated emotions. All statements were adapted from previous literature (Ajzen, 1985, 1991; Perugini & Bagozzi, 2001) and modified according to the research context. All items were measured on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree).

2.2 Data Collection
This research used the extended goal-directed behavior framework model to explore trekkers' environmentally friendly behavioral intentions.

The participants in this study were above 18 years old and had at least one trekking experience in Nepal. The Google form survey was generated and forwarded to the participants via email and social media messenger services. Responses were collected in November 2019. Local trekking agencies in Nepal were contacted to reach out to target respondents. On top of that, we have also utilized social media groups (especially Facebook groups related to trekking in Nepal) to collect responses. The questionnaire started with a simple definition of environmental activities, followed by a filter question. The filter question asked participants whether or not they had prior trekking experience in Nepal's trekking routes. Those who agreed with the filter questions were allowed to complete the rest of the survey. A total of 350 questionnaires were distributed, 311 were received, and 310 were used for further statistical analysis. The descriptive, factor, reliability, and validity analyses were performed using SPSS 24.0. Furthermore, structural equation modeling (SEM) was conducted using AMOS 22.0 to test the constructs' structural relationships.

3. Research Results
3.1 Demographic Profile of Respondents
Of the 310 respondents, 64.8% were male, and 35.2% were female. Most of the respondents were aged 20 to 39, comprising 85.8%. The remaining 14.2% of participants were over 40 years old. Participants were highly educated, showing that 71.9% of respondents reported that they earned a graduate degree, followed by an undergraduate degree (21.3%), high school (3.5%), and two years of college (3.2%). Regarding marital status, the percentage of single status was 51.0%, followed by married 46.5%. In addition, most respondents had trekking experiences with their friends (61.6%). Respondents with trekking experience, alone and with a spouse, accounted for 13.5%, followed by families at 11.3%. Respondents with more than two times trekking experiences accounted for 52.6%. The remaining 47.4% of participants had a one-time trekking experience. Regarding nationality, 68.1% were domestic trekkers, and 31.9% were international trekkers. The demographic characteristics of the sample are shown in Tab. 2.

Tab. 2: Demographic information and trip characteristics of respondents (*N* = 310)

Variable	Category	Frequency	Percentage (%)
Gender	Male	201	64.8
	Female	109	35.2
Age (years old)	20–29	154	49.7
	30–39	112	36.1
	40–49	28	9.0
	50–59	15	4.8
	More than 60	1	0.3
Education level	High school	11	3.5
	College (2 years)	10	3.2
	Undergraduate	66	21.3
	Graduate	223	71.9
Marital status	Single	158	51.0
	Engaged	8	2.6
	Married	144	46.5
Type	Domestic	211	68.1
	International	99	31.9
Companion	Alone	42	13.5
	With family	35	11.3
	With friends	191	61.6
	With spouse	42	13.5
Times visited	One time	147	47.4
	Two times	68	21.9
	Three times	46	14.8
	Four times	13	4.2
	More than five times	36	11.6
Total			100.0

Source: own

3.2 Measurement Model Estimation

The relationships between observed and latent variables or factors were examined using a confirmation factor analysis (CFA) on the theoretical framework (Wongpakaran et al., 2018). The results of the analysis confirmed the model fit to data (CMIN = 621.706; df = 369; CMIN/DF = 1.685; *p* = 0.000; CFI = 0.959; NFI = 0.905; NNFI = 0.951; IFI = 0.959; RMSEA = 0.047; RMR = 0.046; PGFI = 0.701; PNFI = 0.768) and met statistical criteria (Hair et al., 2009). All observable variables were significantly loaded into their corresponding latent constructs (*p* < 0.01). Moreover, the factor loading value ranged from 0.614 to 0.891, which exceeded the standard value of 0.5. We found CR statistically significant; the construct reliability ranged from 0.719 to 0.947 (standard value: ≥0.7), shown in the range. The calculated average variances (AVE) of constructs ranged from 0.598 to 0.781 and were found significant, higher than the standard value of ≥0.5. The AVE

Tab. 3: Results of confirmatory factor analysis (CFA) for the measurement model – Part 1

Factors & items	Std. loadings	T-values	CR*	AVE**
Environmental concern (NEP)				
If things continue on their present course, we will soon experience a major ecological catastrophe.	0.664	7.501***	0.719	0.461
Humans are seriously abusing the environment.	0.623	7.360***		
When humans interfere with nature it often produces disastrous consequences.	0.614	N/A		
Attitude				
I think that environmentally friendly trekking is positive.	0.720	12.904***		
I think that environmentally friendly trekking is attractive.	0.696	12.345***		
I think that environmentally friendly trekking is valuable.	0.783	N/A	0.906	0.658
I think that environmentally friendly trekking is necessary.	0.740	13.356***		
I think that environmentally friendly trekking is benefit.	0.738	13.304***		
Subjective norms				
Most people who are important to me think it is okay for me to go for environmentally friendly trekking.	0.814	16.300***		
Most people who are important to me support that I go for environmentally friendly trekking.	0.851	17.632***		
Most people who are important to me understand that I go for environmentally friendly trekking.	0.811	N/A	0.922	0.704
Most people who are important to me agree with me about going for environmentally friendly trekking.	0.793	16.012***		
Most people who are important to me recommend going for environmentally friendly trekking.	0.760	14.800***		
Perceived behavioral control				
Whether or not I go environmentally trekking is completely up to me.	0.764	13.856***	0.847	0.736
I am capable of environmentally friendly trekking.	0.878	N/A		
Intention				
I intend to go environmentally friendly trekking in the near future.	0.827	17.208***		
I am planning to go environmentally friendly trekking in the near future.	0.855	N/A	0.879	0.708
I will make an effort to go environmentally friendly trekking in the near future.	0.806	16.615***		
Positive anticipated emotions				
If I succeed in achieving my goal (going for environmentally friendly trekking), I will feel proud.	0.820	N/A		
If I succeed in achieving my goal (going for environmentally friendly trekking), I will feel happy.	0.855	18.012***		
If I succeed in achieving my goal (going for environmentally friendly trekking), I will feel satisfied.	0.832	17.389***	0.947	0.781
If I succeed in achieving my goal (going for environmentally friendly trekking), I will feel glad.	0.860	18.130***		
If I succeed in achieving my goal (going for environmentally friendly trekking), I will feel excited.	0.851	15.944***		

Tab. 3: Results of confirmatory factor analysis (CFA) for the measurement model – Part 2

Factors & items	Std. loadings	*T*-values	CR*	AVE**
Negative anticipated emotions				
If I fail in achieving my goal (going for environmentally friendly trekking), I will feel worried.	0.884	20.670***	0.855	0.598
If I fail in achieving my goal (going for environmentally friendly trekking), I will feel disappointed.	0.891	N/A		
If I fail in achieving my goal (going for environmentally friendly trekking), I will feel angry.	0.762	16.323***		
If I fail in achieving my goal (going for environmentally friendly trekking), I will feel unsatisfied.	0.753	16.026***		
Desire				
I want to go for environmentally friendly trekking in the near future.	0.827	18.799***	0.911	0.774
I am eager to go environmentally friendly trekking in the near future.	0.888	N/A		
I wish to go for environmentally friendly trekking in the near future.	0.842	19.381***		
Model fit: CMIN = 621.706; df = 369; CMIN/DF = 1.685; p = 0.000; CFI = 0.959; NFI = 0.905; NNFI = 0.951; IFI = 0.959; RMSEA = 0.047; RMR = 0.046; PGFI = 0.701; PNFI = 0.768				

Source: own

Note: All items were measured on a 5-point Likert scale from 1 = strongly disagree to 5 = strongly agree; *construct reliability; **average variance extracted.

of environmental concern was lower than 0.5, while the composite reliability was greater than 0.6; thus, the construct's convergent validity is sufficient (Fornell & Larcker, 1981). The result of the confirmatory factor is reported in Tab. 3.

3.3 Structural Model
The structural equation modeling (SEM) results are shown in Tab. 4 and Fig. 3. The model fit of the structural model (model fit: CMIN = 671.241; df = 379; CMIN/DF = 1.771; *p* = 0.000; CFI = 0.952; NFI = 0.898; NNFI = 0.945; IFI = 0.953; RMSEA = 0.050; RMR = 0.073; PGFI = 0.714; PNFI = 0.782) indicates that the research model is appropriate and suitable. According to the SEM modeling results, six out of eight hypotheses were supported. We found a significant relationship between environmental concern and attitudes, supporting the first hypothesis (EC → ATT = 0.266). However, the relationship between attitude and desire was insignificant, rejecting our second hypothesis (ATT → DE = 0.080). Similarly, the third hypothesis was also rejected, showing that subjective norm has an insignificant relationship with desire (SN → DE = 0.021). However, the

positive anticipated emotion has positively influenced desire, which supported our fourth hypothesis (PAE → DE = 0.504). Next, our fifth hypothesis was about the relationship between negative anticipated emotion and desire. We found the substantial influence of negative anticipated emotion on desire, supporting our assumption (NAE → DE = 0.159). The sixth research hypothesis, which explains positive relations between perceived behavioral control and desire, was supported (PBC → DE = 0.252). Moreover, the significant influence of perceived behavioral control on behavioral intention was reported to support our seventh hypothesis (PBC → BI = 0.288). Finally, our eighth hypothesis about the positive relationship between desire and behavioral intention was supported (DE → BI = 0.582).

4. Discussions
This study investigated trekkers' environmental concerns and environmentally friendly trekking intentions using an extended goal-directed behavior model. According to the results, trekkers showed a high level of environmental awareness. Trekkers knew that if people continued to ruin the environment, the world

Structural parameter estimates

	Hypotheses	Estimate	*T*-values	C. R.	Results
H1	Environmental concern (EC) → attitude (ATT)	0.266	0.058	4.582***	Supported
H2	Attitude (ATT) → desire (DE)	0.080	0.107	0.976	Rejected
H3	Subjective norms (SN) → desire (DE)	0.021	0.080	−0.281	Rejected
H4	Positive anticipated emotions (PAE) → desire (DE)	0.504	0.081	6.786***	Supported
H5	Negative anticipated emotions (NAE) → desire (DE)	0.159	0.034	3.462***	Supported
H6	Perceived behavioral control (PBC) → desire (DE)	0.252	0.085	3.029**	Supported
H7	Perceived behavioral control (PBC) → intention (I)	0.288	0.087	3.797***	Supported
H8	Desire (DE) → intention (I)	0.582	0.091	7.192***	Supported

Model fit: CMIN = 671.241; df = 379; CMIN/DF = 1.771; p = 0.000; CFI = 0.952; NFI = 0.898; NNFI = 0.945; IFI = 0.953; RMSEA = 0.050; RMR = 0.073; PGFI = 0.714; PNFI = 0.782

Source: own

Note: *p < 0.05; **p < 0.01; ***p < 0.001.

would soon face a significant ecological catastrophe. Similarly, respondents agreed that people are seriously abusing the environment. Therefore, they acknowledged the negative impact of human behavior on the environment. In addition, trekkers depicted a high level of environmentally friendly attitudes. The agreement with the NEP statements shows that the trekkers have superior environmental consciousness. This finding is consistent with previous research (Paudel et al., 2019; Son et al., 2012b).

We found that most respondents were aware of current and future environmental conditions. Specifically, they were conscious of the limitations of natural resources and had positive attitudes regarding environmental issues such as the impact of trekking on the environment (e.g., footprints and vegetation protection). Other works (Han & Meng, 2016; Ibrahim et al., 2021; Li et al., 2019; Paudel et al., 2019) reported similar results. In his research, Holden (2003) also found that two-thirds of trekkers are convinced that trekking is harmful to the environment. Furthermore, our findings showed that emotions are vital drivers of the desire to protect the environment, supporting our assumption of the positive influence of emotions on desire. Particularly positive anticipated emotions showed a significant influence on desire. This means trekkers' emotions are positive towards environmentally friendly activities. Previous studies also reported that emotions play a significant role in environmentally friendly activities (Han & Meng, 2016; Lee et al., 2012). Thus it can be concluded that trekkers are also emotionally attached to environmental conservation.

Trekkers' perceived behavior control significantly influenced both the desire and intention of environmentally friendly trekking. This indicates that the available resources influence their future environmentally friendly trekking intention. Moreover, those who go on nature-based tourism have the resolution to conserve the environment and the self-belief to engage in environmentally friendly trekking. Similar results were reported by Lee et al. (2012) and Han et al. (2018), investigating environmentally friendly festival visiting intention and visiting intention of the environmentally friendly responsible museum.

Similarly, our study revealed a strong relationship between perceived behavioral control and environmentally friendly intentions, indicating that trekkers have strong beliefs and control toward environmentally friendly intentions. Other researchers (Li et al., 2019; Paudel et al., 2019; Song et al., 2012a, 2012b; Song et al., 2014) also found similar findings demonstrating a strong relationship between behavioral control and desire. Next, we have found the significant positive influence of desire toward the intention. This indicates that trekkers who desire to conserve nature tend to engage in environmentally friendly activities.

The relationship between desire and intention is crucial from environmental and ecological perspectives. Previous research evidence also confirmed that desire is critical in behavioral decision-making (Song et al., 2012a, 2012b; Song et al., 2014).

The relationship between environmental attitudes and desire did not show significance. This rejection depicts that trekkers lack a healthy attitude toward environmentally friendly activities. Typically attitudes are considered as evaluative appraisals (Bagozzi, 1992). Attitude will lead to the intention to perform or not perform the act if the evaluations are strong enough. Sometimes the particular behavior does not necessarily desired to perform but can always be intended (Perugini & Bagozzi, 2001). Moreover, Fishbein and Stasson (1990) claimed that desire could be considered a proxy of intention since both variables are constructed on the motivational process. Thus, attitude does not necessarily influence desire, as supported by earlier studies (Perugini & Bagozzi, 2001; Won et al., 2021).

Similarly, there was no significant relationship found between subjective norm and desire. The reason behind it is the lack of social pressure to consider environmental conservation. Also, trekkers are likely to care more about their approaches, involvement, capability, and attitude toward the environment while not being concerned about other people's thoughts. In addition, the volitional nature of desire also plays a role in this result because environment conservation or protection is a straightforward and must-do activity. Trekkers' strong environmental inclination causes them to act more mindfully. Thus they do not want to be enforced by others; instead, they want to engage themselves. This finding is consistent with studies by Park et al. (2017) and Bui and Kiatkawsin (2020) on the wetland visiting decision-making process and hard adventure tourists' visit intention.

This finding can also be interpreted concerning the demographics of the respondents. Most participants are from Nepal, and Nepal's trekking trails are home to the respondents. Therefore, they are familiar with and well aware of the local circumstances. This kind of localness to the environment creates less interest in the attitude and desire toward conservation. Furthermore, social pressure for Nepalese trekkers is less relevant than trekkers from other countries. Similar results were investigated by Cheng et al. (2013), researching Chinese tourists' environmentally friendly behavior. Ghazvini et al. (2020) also showed that domestic visitors are less concerned about the environment than international visitors. Jansen (2011) studied international trekkers' behavior and found that foreign trekkers perceive themselves as more environmentally friendly when they trek in Nepal. Although our study does not consider place attachment to affect pro-environmental behavior, Daryanto and Song (2021) recently investigated that foreign tourists show more assertive pro-environmental behavior than residents. They argued that locals develop their sense of attachment to the place differently than international tourists. Therefore, we speculate that local trekkers' perception of local trails differs from that of international ones. However, this localness effect on environmental behavior requires more research and investigation.

Conclusions

The modern world struggles with pollution, increased waste production, deforestation, overfishing, urbanization, and other environmental issues. However, interest in environmental conservation and protection is also growing as people are becoming more aware of environmental protection. Tourism activities have constantly threatened nature because of the extreme closeness to the environment and vegetation. Nature-based tourism is sensitive to the ecosystem because of the excessive movement of people, which is a constant threat to the ecosystem. Trekking is one of the popular forms of nature-based tourism activities. However, there is inadequate research regarding trekking behavior following the environmental concern. The trekkers' behavior and attitude play a significant role in protecting the trails and the local environment. This study tested an existing decision-making framework with additional constructs in the context of nature-based tourism, particularly trekking. The findings indicate that emotions and desire play a significant role in predicting environmentally friendly intentions.

This study presents several significant findings to fill the existing tourism research gap with an essential contribution to the literature. This study confirms that the MGB is an enhanced model to improve TPB's capacity by adding desire and anticipated emotions (Perugini & Bagozzi, 2001). This study also identified

trekkers' emotions, perceived behavioral control, norms, beliefs, and desires as essential predictors of forming environmentally friendly trekking intentions. Desire was an essential mediator in the environmentally friendly decision-making process. Attitude, positive and negative emotions, and environmental concerns are other crucial constructs in the extended MGB framework. Therefore, this research successfully investigated that desire is a unique variable conceptually different from behavioral intentions (Perugini & Bagozzi, 2001) in the nature-based tourism trekking activity. Moreover, the present study tested and developed an extended version of MGB to investigate trekkers' behavioral intentions. The additional construct incorporating MGB is an environmental concern derived from the NEP scale.

The findings of this study provide some practical implications. According to the results, trekkers want to preserve the environment. Therefore, policymakers and planners in nature-based tourism should consider trekkers' behavioral intentions towards the environment while planning environmental programs. The significant replication of the desire for environmentally friendly behavioral intentions is optimism toward conserving trekking routes and natural vegetation. Emotions were found to be a strong predictor of desire. Therefore, the stakeholder policymakers should design such programs to enhance trekkers' positive emotions toward environment conservation. The result will help stakeholders recognize the importance of trekkers' desire and take benefit of the strong desire of trekkers to promote conservation programs. Moreover, most trekkers are aware of the limitation of natural resources; thereby, developers and government sectors should collaborate with trekkers for sustainable use of resources while having trekking activities.

The present study also has limitations and room for future development. First, our study was conducted in the context of trekking in Nepal, and it cannot be applied to other geographical areas for obvious reasons. Second, the sample size is relatively small, and most respondents were from Nepal. Larger sample size and more diversity in respondents' profile would yield more effective results. Third, this study did not include trekkers' past behaviors, environmental ethics, or knowledge. The perceptions and data from this study also provide an intriguing avenue for further research. Additional variables and indicators can be incorporated with the MGB framework. For instance, the comparative demographic study with ages, gender, and land of origin can be further added in future work. In addition, future work can be extended with perception, motivation, place attachment, and other environmental variables. Finally, little research has been carried out in the trekking context, and more research is encouraged to explore the trekker's decision-making process about environmentally friendly activities. It is required to extend the MGB framework to additional nature-based tourism fields.

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