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Modification on **PERVAL dimensions** for **protected area**: Ecotourism perceived value in today's pandemic environment

MOHAMMAD RIDHWAN NORDIN * [ridhwan.nordin@pms.edu.my]

SALAMIAH A JAMAL ** [drsalamiah@uitm.edu.my]

NOR ASMALINA MOHD ANUAR *** [noras288@uitm.edu.my]

Abstract | Previous literature on tourism and travel has done much research on perceived value, but nature reserves like national parks have yet to be studied. Hence, the primary reason for undertaking this study is to analyse the dimensionality of the perceived value concept of national parks by modifying the PERVAL measurement scale. We examined four dimensions: functional value, value for money, novelty value, and health and well-being value. A conceptual model was formulated and preliminary tested to examine the value perception of eco-tourists on their experiences in national parks. The results from a series of analyses provided significant insights into the values of health and well-being recognised by eco-tourists during the pandemic. In general, the results on the focal relationships of all variables gave insight into the practical nature of the nationally protected parks and had significant implications for marketers.

Keywords | PERVAL, protected area, national park, health and well-being, factor analysis

* **Senior Lecturer** at the Department of Tourism and Hospitality, Politeknik Muadzam Shah, Malaysia. **Doctorate** (specialisation in Ecotourism) at Universiti Teknologi MARA, Malaysia. https://orcid.org/0000-0001-5953-7679
** **Professor** of Hospitality Management at the Faculty of Hotel and Tourism Management, Universiti Teknologi MARA (UiTM) Cawangan Selangor. **PhD** at Universiti Teknologi MARA, Malaysia. https://orcid.org/0000-0001-9137-1031
*** **Senior Lecturer** of Tourism Management at the Faculty of Hotel and Tourism Management, Universiti Teknologi MARA (UiTM) Cawangan Selangor. **Postgraduate degree** in Tourism Planning at Universiti Teknologi Malaysia and a **PhD** in B.A (specialisation in Islamic Tourism and Marketing, IIUM Malaysia.

1. Introduction

Tourism was a primary industry in most countries before the pre-Covid19 period. This industry has become one of the fastest-growing economic sectors and a core engine of global socio-economic growth (Nordin & Jamal, 2020), thus contributing to the economic progress of developing countries such as Malaysia (Salleh et al., 2013). Over the last few decades, the demand and popularity of natural tourism have resulted in numerous tourism alternatives, plus ecotourism. Ecotourism has turned into an expanding area of tourism around the world (Carvache-Franco et al., 2019; Vinaya & Binoy, 2020), with an annual growth rate of 20 to 25% (Hui et al., 2020), three times quicker than tourism in general (Hultman et al., 2015).

Ecotourism is also a core tourism product heavily promoted by the Malaysian government (Abdurahman et al., 2016). As a result, Malaysia has made great efforts to promote the uniqueness of the country's ecotourism in the Visit Malaysia 2020 campaign (Ching et al., 2019). Furthermore, the government of Malaysia launched its National Tourism Policy 2020-2030 to be "The top of the mind ecotourism in the world."It shows that the government had a clear vision and direction in promoting ecotourism as a core tourism product. Researchers argued that ecotourism is nature-based surroundings that provide positive and valuable experiences and contribute to holistic wellness (Brymer & Lacaze, 2013). Eco-tourists travel to improve their well-being through more apparent recreational activities contributing to a healthier life (Nordin & Jamal, 2021). In line with the Sustainable Development Goals 2030 (SDG) agenda, ecotourism embraces tourism for SDG, promotes valuable and sustainable tourism, and emphasises the quality and well-being of people (Nordin & Jamal, 2020; Ramkisson et al., 2018). One of the ecotourism destinations that advocated the concept of combining nature, culture, and recreation for health and wellness is the national park.

Taman Negara National Park (TNNP) is one of the oldest rainforests in the world and Malaysia's most popular ecotourism sanctuary (Tan et al., 2015). It is a vast protected area that covers approximately 4,343 square kilometres and is located in the heart of Peninsular Malaysia. It is one of the oldest rainforests in the world, estimated to be over 130 million years old, and is home to an incredibly diverse range of flora and fauna. TNNP is a popular ecotourism destination frequently visited by eco-tourists, but a previous survey (Nordin & Jamal, 2020) reported that only some TNNPs had fluctuations in their arrivals between 2016 and 2019. This declining situation is anticipated to be exacerbated when a new coronavirus pandemic (Covid19) occurs worldwide.

The recent pandemic has significantly impacted tourist arrival and the citizens' well-being (Rathakrishnan & Kamaluddin, 2020). For instance, TNNP, the most famous national park, recorded a significant decline of 15.3% in 2019 and 32.5% in 2020 (Department of Statistics Malaysia, 2019; Tourism Pahang, 2021). Studies show that the cause of tourist arrivals reductions include negative images towards a destination and a drop in the perceived value performance below the initial expectation, leading to dissatisfaction (Akama & Keiti, 2003; Huwae et al., 2020; Mutanga et al., 2017). It influences tourist decision-making on destination choices based on the current destination image and other behaviours, including value perception, satisfaction, and future consumption (Cheng et al., 2018).

Empirical studies revealed that depleted perceived value performance leads to depleted satisfaction levels, which constitute depletion in tourist arrival (Akama & Keiti, 2003; Clerides & Pashourtidou, 2007; Mutanga et al., 2017). Hence, given the Malaysian government's focus on the ecotourism sector, assessing the perceived value of eco-tourists in this destination, as emphasised by Huber, Herrmann and Morgan (2001), is valuable and useful for the life of the industry. Com-

prehending customers' perspectives is necessary for a company to survive, particularly in a competitive market. Although the perceived value has been myriad discussed by tourism researchers in Islamic Hotel (Azhani et al., 2017), Cultural Heritage (Gallarza et al., 2021), Medical Tourism (Jeong & Kim, 2019), Event (Na et al., 2017), Food Tourism (Rousta & Jamshidi, 2020), Dark Tourism (Sharma & Nayak, 2020), empirical research on protected parks are still limited (Chin et al., 2020; Carvache-Franco et al., 2020a; Caber et al., 2020; Thapa & Lee, 2017). The primary purpose of this study is to evaluate ecotourism travel from the tourist's point of view and to gain a deeper understanding of the concept.

Researchers in tourism and hospitality denounce that knowledge around value needs to be more consistent in all settings (Gallarza et al., 2019). For instance, Jamrozy et al. (2017) contend there needs to be more to investigate ecotourist evaluation on consumption value in protected areas. However, perceived value is measured differently in the different studies and consumer characteristics (Rasoolimanesh et al., 2016), while each consumption may have different impacts on different settings (Rousta & Jamshidi, 2020). Therefore, this research intends to analyse the perceived value of TNNP's eco-tourists, as previous studies on TNNP claimed that studies on the relationship between perceived value and its consequences had been ignored (Nordin & Jamal, 2020).

This study adapted and modified PERVAL dimensions by incorporating functional, economic, and novelty and introduced a new dimension of health and well-being value, which integrates emotional value to embrace the innovative concept of the protected park as a catalyst for fostering physiological health and psychological well-being. A pilot study was performed as it is a valuable model modification tool. It allows researchers to test the model in a controlled environment and to identify any issues or areas for improvement before implementing it on a larger scale (Figueiredo et al., 2012). By refining the model through a pilot study, researchers can improve its accuracy and effectiveness and increase the likelihood of success when implementing the model in the real world (Nunkoo & Ramkissoon, 2010).

2. Literature Review

2.1. Perceived Value (PERVAL)

From the service marketing perspective, value is imperative in consumption and decision-making (Gallarza & Saura, 2006; Hettiarachchi & Lakmal, 2018). This concept of value is old and endemic to the marketing philosophy and understanding of consumer behaviour (Gallarza & Saura, 2006, 2020; Schoeman et al., 2016). Even though this concept is considered endemic, Khalifa (2004) highlighted that the concept has become one of the most overused and misused concepts in social sciences and management literature.

Over the past three decades, perceived value has been essential in consumer and decision-making behaviour because it is the most critical determinant of customer behaviour (Jeong & Kim, 2019). Zeithaml (1988) defined perceived value as "the consumer's overall assessment of the utility of a product based on perceptions of what is received and what is given" (Ahn & Kwon, 2019). Prior studies conceptualised perceived value as a unidimensional and multidimensional perspective. Zeithaml (1988) has conceptualised a perceived value based on a unidimensional (trade-off between benefit and sacrifice). However, other researchers (Babin et al., 1994; Sweeney & Soutar, 2001) disagreed and argued that 'perceived value' is a multidimensional perspective. Thus, the present study stands with a multidimensional perspective and contends that perceived value is a holistic, diverse, comprehensive, and modifiable construct that involves more than a mere trade-off assessment of benefit and

sacrifice.

PERVAL is a multidimensional construct introduced by Sweeney and Soutar (2001). As summarised in Table 1, the evolving chronology of PERVAL dimensions in multidimensions streams begins from the extension of the consumption theory by Sheth et al. (1991). It was initially employed to study consumer perceptions of material commodities in the retail industry. PERVAL consists of four dimensions and 19 items: functional value (six items), economic value (four items), emotional value (five items), and social value (four items). Through replication and prior empirical results, William and Soutar (2009) extended previous Sweeney and Soutar (2001) work by incorporating the novelty value as a pivotal determinant of adventure tourism consumption experiences. Their scale is considered more updated and complies with tourism settings for model testing (Chen et al., 2016; Wang et al., 2018).

Table 1 | The Chronology of Multidimensions Stream of Perceived Value

Authors	Year	Dimensions				
Sheth et al.,	1991	Functional value	Social value	Emotional value	Epistemic value	Conditional value
William & Soutar	2000	Functional value	Emotional value	Social value	Epistemic value	
Sweeney & Soutar	2001	Functional (quality)	Economic (price)	Emotional Social	Social value	
William & Soutar	2009	Functional value	Economic value	Emotional value	Social value	Novelty value

Source: Author compilation

2.2. Perceived Value in Ecotourism

In the context of tourism perspective, perceived value is generally referred to as a tourist evaluation of functional values (travel product quality and price) and socio-psychological elements (emotions and social factors) (Ariya et al., 2017; Carvache-Franco, 2020b; Chiu et al., 2014; Oviedo-Garcia et al., 2016). Several recent scholars have shared consensus regarding the definition of perceived value from a tourism perspective, which was most appropriate for this study (Chen & Tsai, 2007; Cheng et al., 2018; Aliman et al., 2014; Wu & Chen, 2018). In their studies, the perceived value was defined as tourists' overall appraisal of a travel product and service based on what is received (quality and benefits from the trip) and what is given (costs and sacrifice for the trip).

Research on the perceived value of tourists who prefer contact with nature emphasises the significance of knowing how and what destination attributes a traveller prioritises during a travel experience (Carvache-Franco et al., 2020b). Examining the perceived values of ecotourism is important in generalising the findings and contributing to the literature on the subject (Carvache-Franco et al., 2020b). Multifaceted perceptions of value have already been considered in the context of ecotourism, but empirical research on the health and well-being aspects of protected areas has been lacking (Nordin & Jamal, 2020). This study adapts and modifies PERVAL dimensions by incorporating functional, economic, and epistemic and introduces a new dimension of health and well-being value, which integrates emotional value to embrace the innovative concept of the protected park as a catalyst resource in terms of fostering physiological health and psychological well-being.

2.3. Functional Value

Sheth et al. (1991, p. 160) defined functional value as the "perceived utility acquired from an alternative's capacity for functional, utilitarian, or physical performance". Ecotourism regards func-

tional values as including quality. Dependability, endurance or another specific utility characteristic that the destination offers. For example, the number of attractions visited, e.g., to experience remote, unspoiled and undisrupted nature (Tao et al., 2010), punctuality of the tour, convenience, speed, efficiency, price, administrative help, safety and security; information about the natural environment, and an adequate number of guides on the tour, accessibility, amenities, available packages and quality places (Buhalis, 2000; Chan & Baum, 2007; Tao et al., 2010).

A prior study in Korea's ecotourism destinations (Kim & Park, 2016) revealed that functional values were found to have a significant effect on the overall value, but conceptualising the perceived value solely on its functional aspect may be inappropriate, as consumers also pay attention to other values such as economic and psychological aspects of consumption, especially in the context of a service, such as tourism (Holbrook & Hirschman, 1982; Sheth et al., 1991).

2.4. Economic Value

One of the crucial elements in ensuring tourist satisfaction is the perception of receiving value for money (Du Plessis & Saayman, 2015). Barnett et al. (2010) defined "value for money"as a term that is used to describe "an explicit commitment to ensuring the best results possible are obtained from the money spent". Functional value (price/value for money), as determined by Sweeney and Soutar (2001), is "the utility derived from the product due to the reduction of its perceived short-term and longer-term costs."value for money is expressed as the price paid for the product or service by the customer.

Gallarza and Saura (2006) stated that perceived value comparatively evolved from two key perspectives of consumer behaviour, which are: utilitarian (value is linked to prices, known as transaction value) and psychological perception (emotional aspects of consumers in decision-making). In order to measure perceived value in utilitarian terms, value for money is the trade-off between consumers sacrificing price and receivables (Kashyap & Bojanic, 2000). Wang et al. (2004) identified a direct and positive effect of functional value (price/value for money) on customer satisfaction. The price value significantly impacts customer satisfaction in many settings, such as the hotel industry (El-Adly, 2019) and the airline industry (Rajaguru, 2016).

2.5. Novelty Value

Novelty value in tourism studies is the level of tourists' curiosity aroused in a destination, influencing their decision-making processes (Sheth et al., 1991). Examples of novelty value are changes from routine life, escape, thrill, adventure, and surprise to alleviate boredom (Williams & Soutar, 2009). This value scale has been tested in a tourism context, such as adventure tourist experiences (Williams & Soutar, 2009) and particular interest or niche tourism, e.g., gastronomy tourism (Choe et al., 2019), panda tourism (Mazaruddin & Anuar, 2019), and ecotourism (Li et al., 2020a). Williams and Soutar (2009) examined adventure tourists' values and found novelty to be an essential contributor to tourists' satisfaction.

Tourists seek novelty in the form of tourist destinations with different customs and traditions than those they have at home, new, extraordinary situations, and a change of atmosphere. Tourists look for a total experience, including adventure recreation, culture, education, and social interaction (De Rojas & Camarero, 2008). Therefore, tourists visit rural areas every weekend and holiday with different and attractive cultures, nature, society, and traditions (Pujiastuti, 2017). It shows a shift in how tourists decide which tourist destination they will visit.

Thus, in the same vein, ecotourism gives dif-

ferent values than other tourist attractions, providing authentic experiences for eco-tourists through direct interaction with nature, culture and community. An ecotourism destination aims to provide visitors with knowledge of ecology, positive excitement and adventure. As a study in Malaysia showed, eco-tourists sought novelty and knowledge through participating in eco-activities (e.g., horseback riding, safari and splendid culture) and by learning about nature and the environment (Chan & Baum, 2007). Huntsman et al. (2015) found that seeking motivations influenced positive attitudes toward ecotourism. In line with this, the novelty value was adapted and measured in the present study as pursuing new and different experiences is one of the motives in ecotourism.

2.6. Health and Well-being Value

Perceived value is a dynamic variable which can alter with time, actors, and circumstances (Holbrook, 1994). In addition, as Sheth et al. (1991) advised, those values act digressively and independently of each other depending on the situation and the product or service (Zauner et al., 2015). A previous study that employed PERVAL by Williams and Soutar (2009) has delineated the conceptualisation of perceived value as the personal evaluation of travel products such as functional, economic, emotional, social and novelty. In the current study, the researcher proposed to merge the emotional value into health and well-being values and omitted social values for several reasons.

Firstly, tourism activities were a super-spreader of the Covid-19 virus (Luck & Aquino, 2021). The new normal movement behaviour requires tourists to comply with the SOP by avoiding the 3Cs (crowded space, confined space, intimate conversation) and employing 3Ws (wash, wear, warn). These include putting on a mask in public is obligatory, conducting small-group visits and maintaining a social distance of one meter even in nature surrounding like protected parks and reserve forests. Looking back, the dimension of the social value of the tourism experience, as foreseen by Sheth et al. (1991), is becoming obsolete in this current unprecedented era of a pandemic.

As tourists perceive challenges to caring for themselves and others during crises, interacting with other tourists or surrounding people becomes less critical in their touristic experiences as tourists can infect others before they experience any symptoms (Leder et al., 2020). It coincides with a prior study that revealed social value as less significant among eco-tourists as they are more likely to be involved in what the eco-site offers rather than socialising with others (Chen et al., 2016; Lee & Jan 2018; Li et al., 2020). In addition, travel behaviour, tourism preferences, tourist lifestyle, and consumption pattern changed from collectivism to individualism, psychocentric to allocentric, and city centre to nature immersed as the impact of Covid-19 (Wen et al., 2020).

Attaining higher levels of health and well-being has always been one of the main objectives of tourists (Ferrari & Gilli, 2017), as the common belief is that touristic experiences enhance tourists' well-being and contribute to their physical health, leading to happiness (Aziz et al., 2020; Choi et al., 2015; Vada et al., 2020). Well-being comprises objective and subjective dimensions. Objective well-being is evaluated by health-related well-being, while subjective well-being encompasses mental constructs such as happiness and hedonism (Uysal et al., 2015). For now, the unprecedented pandemic crisis has affected humanity's physiological (objective) and psychological (subjective) well-being. Hence, tourists and humanity must stay fit amid soaring medical costs.

Previous studies on perceived wellness value have been examined in the tourism context (Choi et al., 2015 - Spa; Ahn & Back, 2019 - Cruise). Moreover, it is essential to note that those studies were subjective evaluations of the available wellness benefits such as spa and cruise while predo-

minantly being Western-centric. However, to the best of the researcher's rigorous literature search and in line with prior reviewed work by Kamdi et al. (2018), none of the studies verified the positive effects of perceived wellness value in nature-based experience in ecotourism sites such as the national park, particularly towards the physiological benefit and psychological well-being especially in Eastern-centric countries in Asia-Pacific (Li, 2020).

If physiological benefits in addition to psychological benefits value could be verified, such scientific evidence could be used more effectively and precisely focused on the marketing of ecotourism as an innovative destination promoting the vitality of tourist health and well-being (Ohe et al., 2017), with a "new market for the healthy" (Hartwell et al., 2016). Consequently, better collaboration between parks, protected areas, and health institutions can be promoted, requiring new and innovative transdisciplinary partnerships (Romagosa et al., 2015). Therefore, this study proposed to examine functional, economic, novelty and health and well-being values for the present study. Table 2 summarises the adoption of perceived value dimensions after considering the relevance of the present study.

Table 2 | Dimensions of perceived value in the current study

Dimensions of Perceived Value	Sources	No. of Items
Functional	Ercsey and Jozsa (2016) William and Soutar (2009) Rasoolimanesh et al. (2016) Prebensen et al. (2012)	6
Economic	Wang et al. (2018) Rousta and Jamshidi (2020) Rasoolimanesh et al. (2016)	5
Novelty	Wang et al. (2018) Kim and Thapa (2017)	4
Health and Well-being	Prebensen et al. (2013) Ahn and Back (2019) Gallarza et al. (2017)	7

Source: Author

2.7. The Conceptual Framework

The current study explores the multiple dimensions of perceived value (PERVAL) as developed by Williams and Soutar (2009), which is innate by Sheth et al. (1991). These dimensions have been tested and applied by various studies that fit into the tourism phenomenon (Chen et al., 2016b), resulting in five key dimensions of perceived values: functional, economic/monetary, emotional, social, and novelty / epistemic. Therefore, these dimensions of values were adapted to the present ecotourism study. However, the researcher adapted and modified the PERVAL dimensions by incorporating functional, economic, and novelty and introduced a new dimension, that is, health and well-being value which is an integration of emotional value to embrace the innovative concept of protected parks as a catalyst resource, particularly in terms of fostering physiological health and psychological well-being.

As per the discussion above and the references to the PERVAL scale, the proposed dimensionality of perceived value is constructed. Figure 1 depicts the conceptual framework developed by the current study.

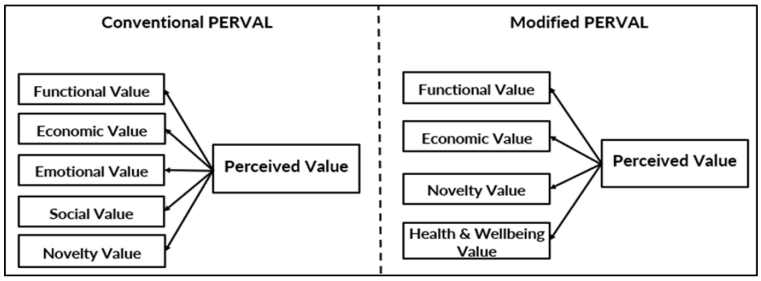

Figure 1 | Proposed conceptual framework
Source: Author

3. Methodology

The methodology employed is crucial in achieving the aim of any study. A cross-sectional research approach was used in this pilot study to establish reliable measurements of modified PERVAL construct among domestic eco-tourists to TNNP. The approach to this study is quantitative, and the data was collected using a self-administered online questionnaire. A systematic literature review was conducted to explore items measuring the perceived value construct. The items were adapted and modified to fit the needs of this study. A 22-item structured questionnaire on a 10-point interval scale from 1 = strongly disagree to 10 = strongly agree was developed to determine the perceived value measures among domestic eco-tourists. The modified items were subjected to pre and pilot tests to improve them before they were included in the final questionnaire. A pre-test sought experts' examination of the questionnaire to ascertain that every question was suitable and that any required changes had been made before distribution (Zikmund et al., 2013). Three experts examined the content validity in this study, and their opinions were considered. In addition, an English language expert undertook face validity, and a statistician expert reviewed criterion validity.

Connelly (2008) and Hill (1998) stated that the sample size for a pilot test is 10% of the target sample size for the actual data collection. However, 30 and above individuals are commonly advocated since the number is derived from the Central Limit Theorem, which states that a sample size of 30 or more ensures that all samples from the reference group are equal to that of the population (Memon et al., 2017). Based on power analysis conducted using G*Power 3.1 software, the study required a minimum sample of 119 respondents. Thus, a minimum of 41 sample sizes were targeted for this pilot study. Target were domestic eco-tourists aged at least 18 years old and had visited the TNNP Kuala Tahan during the year of pandemic (2020) onward.

The online questionnaire had been set with screening questions (i.e., "have you been to Taman Negara Kuala Tahan in 2020 onward") so that if the respondents tick 'NO', the questionnaire will automatically manoeuvre the respondents to send the response. It ensures that only domestic eco-tourists visiting TNNP Kuala Tahan from 2020 onward were recorded. Online surveys are widely used in tourism studies and are reliable tools for gathering data on respondents' perceptions, attitudes, and behaviour intentions (Evans & Mathur, 2005; Quoquob et al., 2020; Yang et al., 2018). Data were collected in early August 2021 and took approximately two weeks. A Google form link enabled with a single response setting was distributed to WhatsApp groups of academicians and students at one Community College in Malaysia for data quality assurance. For the past two years, WhatsApp has dominated the worldwide instant messenger industry (Bucher, 2020). In addition, most people favour WhatsApp interaction due to its easy usage, significant user participation, and the crea-

ted WhatsApp groups (Sutikno et al., 2016).

Fifty-two responses were collected, and 11 were discarded for not fulfilling the screening question criteria. Then, the study performed a data cleaning process to screen for all possible errors (missing data, blank responses and straight-lining). All respondents completed the entire questionnaire without missing data or blank responses. However, 38 responses were finally retained after three were discarded because of the straight-lining (Sarstedt & Mooi, 2019). The descriptive and factor analyses were performed cautiously on the 38 samples by carefully selecting a limited number of variables and checking for normality and multicollinearity (Sekaran, 2003). This study adapted and modified the instruments to suit the need of the present study. Thus, the exploratory factor analysis was performed to examine the dimensionality of perceived value: functional, economic value, novelty value and health and well-being. The factor analysis comprises measurement of sampling adequacy of the Kaiser-Meijer-Olkin (KMO) and Bartlett's test, the total variance explained (TVE) and items factor loading, scree plot, and item's reliability analysis by reporting the Cronbach's Alpha (Baistaman et al., 2020; Ehido et al., 2020).

4. Findings

All the mean scores for individual items that measure the perceived value variable, as shown in table 3, were relatively high (ranging from 8.32 to 9.50). In contrast, the standard deviation is (ranging from 0.718 to 1.534). This indicates that visiting the national park such as TNNP, Kuala Tahan during the pandemic environment seemed to have a positive impact towards their health and well-being value, especially for items "relieved my tension", "benefit my physical health", "benefit my mental well-being" and "makes me happy".

Table 3 | Descriptive Statistic

Descriptive Statistics

Item Code	Statement The attraction...	Mean	Std. Deviation	N
FV1	is clean and hygienic	8.79	1.018	38
FV2	well organised	8.47	1.156	38
FV3	acceptable standard of quality	8.71	1.137	38
FV4	provides sufficient basic amenities	8.32	.989	38
FV5	easily accessible	8.45	1.083	38
FV6	the local community was hospitable	8.74	1.245	38
EV1	entrance fee is reasonable	8.42	1.388	38
EV2	worth for the money on activities	8.87	1.256	38
EV3	great value for the money spent	8.87	1.143	38
EV4	local foods and beverages are reasonably priced	8.11	1.556	38
EV5	handicrafts sold were worth buying	8.16	1.534	38
NV1	makes me feel adventurous	9.32	.842	38
NV2	satisfies my curiosity	9.34	.815	38
NV3	provides authentic experiences	9.29	.835	38
NV4	provides many things to do	9.18	.766	38
HW1	makes me relax	9.24	.943	38
HW2	makes me happy	9.39	.790	38
HW3	relieved my tension	9.50	.647	38
HW4	boosts up my energy	9.11	.981	38
HW5	benefits my physical health	9.39	.718	38
HW6	benefits my mental well-being	9.39	.718	38
HW7	helps me to forget work-related activities	9.34	.847	38

a. For each variable, missing values are replaced with the variable mean.
b. Items were measured on a 10-point Likert-type scale with "strongly disagree" and "strongly agree"

Source: Author

Kaiser-Meyer-Olkin (KMO) general acceptability index is more than 0.6. Therefore, this study's KMO value of 0.775 is excellent because it exceeds the recommended threshold of 0.6. Also, a significant value for the Bartlett Spherical Test must be less than 0.05 to accept the factor analysis. In table 4, the significant value for Bartlett's test is 0.000, which is less than the required significance value of 0.05 (Zainol et al., 2019; Aimran et al., 2017). Consequently, a KMO score close to 1.0 and Bartlett's test significance value close to 0.0 show that the data are adequate and suitable for continuing the reduction operation.

Table 4 | The value for KMO Bartlett's test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.775
Bartlett's Test of Sphericity	Approx. Chi-Square	789.195
	Df	231
	Sig.	.000

Source: Author

Total variance explained (TVE) is extracting items into a component before further analysis. Components with eigenvalues exceeding 1.0 are extracted during this process and split into individual components (Pallant, 2007). The findings in table 5 illustrate that the PCA method extracts the four dimensions or components of the PV constructs. Figure 2 exhibits a scree plot of this configuration's four components from the EFA procedure. Thus, the elements are grouped into four dimensions or components and considered for further analysis. Consequently, the total variance explained is 76.34%, more significant than the 60% recommended for the configuration to be valid.

Table 5 | Total variance Explained for PERVAL construct

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	10.885	49.477	49.477	10.885	49.477	49.477
2	2.991	13.598	63.075	2.991	13.598	63.075
3	1.670	7.592	70.666	1.670	7.592	70.666
4	1.249	5.676	76.343	1.249	5.676	76.343
Extraction Method: Principal Component Analysis.						

Source: Author

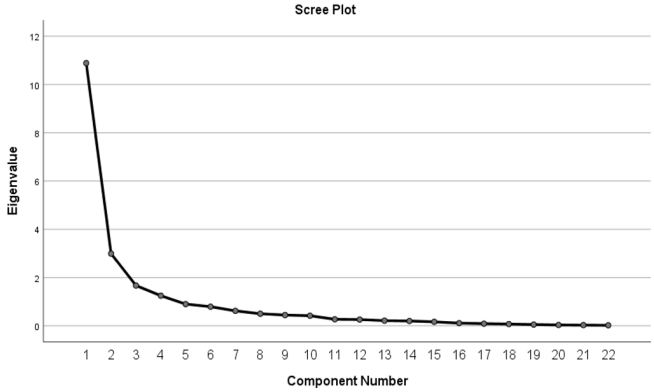

Figure 2 | The Scree Plot for PERVAL constructs extracted four components
Source: Author

Table 6 shows the factor loadings for the 22 items. The items with factor loading higher than 0.50 (Hair et al., 2014) were retained. All the loading scores for individual items are higher than 0.50, which was anticipated, as all were well-established scales. Thus, 22 items remained appropriate to evaluate the perceived value construct. This indicates that the primary driver for eco-tourists in their experiences includes functional, economic, novelty, and health and well-being value. Eco-tourist values the functional aspect of the experience, which includes the accessibility and availability of basic amenities of the park. They also place value on the connection with local people and cultures meaningfully. Price-wise, reasonable entrance and participation fees are deemed essential. They also perceived that ecotourism allows them to seek out experiences off the beaten path, offering a deeper understanding of the natural world. Finally, ecotourism allows travellers to disconnect from everyday life stresses and spend time in natural environments that can promote physical, mental, and emotional well-being.

Table 6 | Factor loadings for PERVAL construct

Item Code	Statement The attraction...	Factor loadings FV	EV	NV	HW
FV1	is clean and hygienic	.638			
FV2	well organised	.612			
FV3	acceptable standard of quality	.650			
FV4	provides sufficient basic amenities	.755			
FV5	easily accessible	.825			
FV6	The local community was hospitable	.674			
EV1	entrance fee is reasonable		.548		
EV2	worth for the money on activities		.607		
EV3	great value for the money spent		.630		
EV4	local foods and beverages are reasonably priced		.543		
EV5	handicrafts sold were worth buying		.666		
NV1	makes me feel adventurous			.807	
NV2	satisfies my curiosity			.785	
NV3	provides authentic experiences			.765	
NV4	provides many things to do			.831	
HW1	makes me relax				.782
HW2	makes me happy				.767
HW3	relieved my tension				.640
HW4	boosts up my energy				.782
HW5	benefits my physical health				.661
HW6	benefits my mental well-being				.834
HW7	helps me to forget work-related activities				.683

Extraction Method: Principal Component Analysis.
a. 4 components extracted

Source: Author

The final test is to ascertain Cronbach's alpha value and check the internal consistency of the indicators used to measure the perceived value construct. For an item to achieve high internal reliability, Cronbach's alpha value must be higher than 0.7 (Rovai et al., 2014). Table 7 illustrates Cronbach's alpha of the four components that evaluate the perceived value construct between .788 and .951. Therefore, these items have a Cronbach value higher than 7, indicating acceptable internal reliability for all four components examined.

Table 7 | Reliability Analysis for PERVAL Constructs

Components	N of items	Cronbach's Alpha
Perceived Value	6	0.884
Economic Value	5	0.848
Novelty Value	4	0.916
Health and Well-being	7	0.915
Total	22	0.941

Source: Authors

5. Discussion and Conclusion

The study reveals that the scale to measure modified PERVAL of domestic eco-tourists to TNNP, Kuala Tahan, Pahang has excellent reliability and validity. The modified PERVAL construct measures a four-component to assess the perceived value of domestic ecotourism to TNNP. The EFA results showed that the four components of the modified PERVAL instrument explained 76.34% of the variance. Additionally, all four components possessed high reliability (Cronbach's α ranged between .884 to .915). Therefore, the modified PERVAL instrument with four components and 22 items with a factor loading of more than .50 has been established in this study.

The modified PERVAL instrument can help ensure that the evaluation tool is relevant, accurate, and effective in assessing the performance and quality of ecotourism experiences in TNNP. Modifying the PERVAL instrument can have several potential benefits. First, the instrument should improve relevance and accuracy by ensuring that the questions and criteria used to evaluate eco-tourists experiences are relevant and accurate to the specific context and goals of the study. Second, the established instrument can help ensure that the study results are comparable to other studies using similar evaluation tools. This can facilitate cross-study comparisons and improve understanding eco-tourist experiences in different destinations. Finally, modifying the PERVAL instrument can provide policymakers and destination managers with valuable insights into the performance and quality of visitor experiences in the destination. It can help inform policy and decision-making processes, leading to more sustainable and effective tourism development strategies.

An essential contribution of this study is to establish a new dimension of health and well-being value which is an integration of emotional value to embrace the innovative concept of the protected area as a catalyst resource, particularly in terms of fostering physiological health and psychological well-being. Moreover, the study utilised credible suggestions from three content experts, one criterion expert, and one language expert to validate the instrument at its early phase of the development process. As a construct, the modified PERVAL is defined by four interrelated sub-constructs, which were shown to demonstrate good psychometric properties in this study.

According to the results of the EFA, the new value dimension has proven that protected areas such as TNNP may offer domestic eco-tourist a chance to enhance their psychophysiological health and well-being. Therefore, it is an opportunity for marketers, park management, and government bodies to promote and segment TNNP in Malaysia, which goes beyond its traditional value as an ecotourism destination for cultural sustainability, conservation, preservation and appreciation. However, the emphasis is on the hidden potential benefits of an "eco-wellness"destination (Brymer & Lacaze, 2013; Ferrari & Gilli, 2017).

In addition, close-to-nature travel destinations may be targeted by tourists after facing a crisis. Therefore, there is an excellent opportunity to explore the impact of nature's perceived values on people and the role of nature reserves in improving eco-tourists quality of life and well-being, especially in the post-COVID-19 crisis (Nordin & Ja-

mal, 2020). This corresponds to the statement of Wen et al. (2020) that nature-based activities (hiking, trekking, wildlife observation, or interpretation of nature), such as in protected areas, can be an opportunity to be marketed to tourists after the COVID-19 aftermath. The activities will allow them to breathe fresh air, connect with nature, and relax after being overwhelmed by stress due to the pandemic.

6. Limitation

One significant limitation is that the present study was a pilot study. Due to the small sample size, it is crucial to interpret the factor analysis results cautiously and consider them preliminary findings rather than definitive ones. Second, the results only represent the TNNP population and cannot be generalised to other populations. National parks can vary from one another in several ways, including their location, geography, size, biodiversity, cultural and historical significance, management practices, and visitor experiences. Future studies could address this limitation by designing context-sensitive studies and comparing findings across multiple destinations. Third, the present study was a cross-sectional study. Data on post-trip domestic eco-tourist perceptions were collected using an online questionnaire survey due to the COVID-19 pandemic (August–November 2021). Since then, considerable progress has been made in vaccinations, allowing restriction-free travel. It is, therefore, likely that some perceptions might have shifted. Future studies could consider a longitudinal design.

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