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Sustainable Nature Tourism and Forest Conservation Strategies Based on Forest Wellness Tourism Demand: A Case Study of Royal Belum State Park, Malaysia

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Abstract: The importance of natural resources in tourism has been widely recognized, and the conservation of forest ecology is seen as a key factor in promoting sustainable tourism. However, there is a lack of in-depth research on sustainable nature tourism and forest ecology conservation that incorporates tourist demands. In this study, a questionnaire survey was conducted with 370 tourists from Royal Belum State Park, Malaysia, and the KANO model was combined with the Analytic Hierarchy Process (AHP) to categorize and weigh the demands. The data analysis showed that out of 22 demand indicators, 5 indicators were must-have qualities, 8 indicators were one-dimensional qualities, 5 indicators were attractive qualities, and 4 indicators were indifferent qualities. Based on the AHP, a more precise weighting between different demands was obtained, showing the importance of tourist demands. The results of the study not only enriched the theoretical framework of forest wellness tourism but also contributed to helping tourism developers in Royal Belum State Park to formulate a more targeted development strategy to promote the sustainable development of nature tourism, as well as helping to provide a scientific basis for guiding the conservation of forest ecology.

Keywords: natural tourism; sustainable development; forest wellness; forest ecosystem; tourist demand; KANO model; analytic hierarchy process

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1. Introduction

In recent years, with the improvement of health awareness and the increase in life pressure, sustainability and health-oriented forest recreation have become a notable trend, and more and more people are seeking natural therapies to enhance their physical and mental health [1,2]. Forest wellness tourism is a new industry that integrates and develops the use of forest resources and health and wellness [3], which is regarded as an essential way to meet the health demands of modern people by taking the rich forest resources and ecological culture as the basis, equipped with corresponding service facilities for wellness, recreation and medical care, and carrying out the activities of forest recreation, vacation, convalescence, and health care to promote physical and mental health [4–7]. The sustainable development of forest wellness tourism faces many challenges, primarily in protecting the forest ecological environment while promoting tourism development [8–10]. Forest ecosystems are believed to help reduce stress [11–13], and over the past decade, researchers in different fields have delved into the beneficial effects of forests on humans [14–18]. These studies provide strong evidence to support the health benefits of forest environments and provide a scientific basis for developing forest wellness tourism [2,19–21].

It is worth noting that governments and tourism sectors worldwide have also begun to recognize the potential value of forest wellness tourism. According to a report by the Global Wellness Institute, the forest wellness tourism market is projected to reach US$1 trillion by 2024, with international wellness tourists spending an average of 41% more than the average global tourist. Furthermore, studies have shown that forest wellness tourism promotes health and well-being enhances tourism attractiveness, creates jobs, and boosts local economies [22]. However, rapid forest ecosystem change and biodiversity loss pose significant challenges to the sustainability of nature tourism. This shows that effective forest ecological conservation strategies are urgently needed to ensure ecosystem integrity while realizing forest wellness tourism development.

1.1. Forest Wellness Tourism and Forest Ecological Protection

Many studies have confirmed the importance of forest ecosystems for tourism activities [23–26], and the natural environment of national parks provides opportunities for developing specific forms of tourism [27]. Forest wellness tourism is an emerging industry that offers ecological and economic advantages by combining the therapeutic benefits of the natural environment with tourism [28]. One study demonstrated that factors such as river systems, accessibility, and distance from urban centers influence the spatial distribution of recreational tourism. This suggests the need for region-specific development models to incorporate innovative ideas and promote government-market collaboration [29]. This form of tourism is becoming increasingly popular globally, with regions exploring its potential to enhance public health, contribute to sustainable development, and support local economies. For example, in Chongqing, China, the development of forest wellness tourism is guided by strategic frameworks such as Strength, Weaknesses Opportunities, and Threats (SWOT), Quantitative Strategic Planning Matrix (QSPM), and Analytic Hierarchy Process (AHP). These strategies emphasize natural beauty and unique landscapes in areas such as tea mountains and bamboo forests while addressing challenges such as inadequate infrastructure [10]. In Bali, Indonesia, geoparks use "forest bathing" as a branding theme to promote psycho-recreation while enhancing community involvement in disaster risk management. This approach attracts tourists and supports sustainable forest management and local economic development [12].

Such tourism in a forest-dominated natural environment can attract tourists seeking well-being. There is a complex relationship between the development of forest wellness tourism and forest ecological conservation. Forest ecosystems provide indispensable ecological services; however, resource destruction is undermining the sustainability of these services. In this context, nature tourism, especially forest wellness tourism, is seen as a potential means to promote ecological conservation because it not only raises public awareness of the ecological value of forests but also supports conservation programs through tourism revenues [30]. The development of tourism activities themselves may also put pressure on ecosystems, and therefore, there is a need to optimize the forest ecological management of tourism to promote the sustainable development of nature tourism and forest ecological health [31].

Forest wellness tourism is a form of health tourism that offers unique benefits compared to other forms of health tourism. Deeply rooted in the natural environment, forest wellness tourism provides ecological benefits that cannot be matched by urban health tourism. The natural beauty and unique landscapes of forests provide a tranquil environment conducive to health and relaxation [10]. Forests have inherent restorative properties that enhance mental health and well-being, making them ideal for health interventions and tourism [32]. Forest wellness tourism can contribute significantly to the local economy by creating jobs and promoting sustainable development, where forest retreats are

strategically developed to maximize socio-economic benefits [29]. Despite its significant advantages, forest wellness faces the constraints of inadequate infrastructure and needs to be strategically developed to realize its full potential [33]. In contrast, other forms of wellness tourism may offer more immediate facilities and services but lack the natural and ecological advantages inherent in the forest environment. The future holds real value in balancing these factors to achieve sustainable health tourism development.

1.2. Tourist Demand

Tourist demands are those that tourists feel are lacking psychologically and physiologically. These demands drive their tourism activities [34], and they often seek emotional and psychological benefits from landscapes, such as improved well-being, aesthetic needs, and emotional satisfaction. Emotional responses to landscapes, including calm and contentment, affect tourist satisfaction [35]. Landscape quality, closely related to emotions, is also a key factor. Scenic and well-maintained landscapes evoke positive emotions and enhance the tourist experience [36]. Typicality and diversity of aesthetic qualities play an important role in moderating the relationship between tourist interest and aesthetic pleasure [37]. In addition, tourist expenditure data are equally considered. Understanding expenditure patterns helps in decision-making and marketing, emphasizing the need for conservation measures to sustain tourism [38].

Understanding tourist demand and using practical analytical tools is of outstanding value in enhancing the tourist experience across various sectors, from heritage sites to online platforms. Combining economic theory with econometric and statistical modeling provides a comprehensive framework for analyzing tourism demand. This approach allows for estimating how changes in economic conditions, such as income and prices, affect tourism demand in different regions and periods [39,40]. A phenomenological study of sites suggests that the tourist experience is multidimensional, involving activities, social interactions, and learning opportunities. This suggests that site management should improve the physical environment, people interactions, and marketing strategies to meet tourist demands better [41]. Although these studies emphasize the importance of understanding tourist demands and using appropriate analytical tools, it is also crucial to consider the limitations of each approach. For example, qualitative methods may not cover the full range of tourist interactions, and quantitative data can be overwhelming without appropriate visualization tools [40]. Balancing these methods can provide a more complete picture of tourist demands and behaviors.

Therefore, this study combines the demand theory, KANO model, Analytic Hierarchy Process (AHP), and sustainable development theory with the Royal Belum State Park in Malaysia as a single case study, aiming to analyze tourist demand in-depth and provide a scientific basis for the sustainable development of forest wellness tourism and the strategy of forest ecological protection. Firstly, Maslow's Hierarchy of Demand Theory provides the basis for understanding tourist demand in this study. Secondly, the KANO model provides a multi-dimensional perspective for analyzing tourist demand by dividing demand into must-have qualities, one-dimensional qualities, indifferent qualities, and indifferent qualities. It also clarifies the relationship between different demand types and tourist satisfaction. Combined with AHP, the weights of different demand types and each demand are more precisely obtained, which provides a scientific basis for exploring more targeted sustainable nature tourism and forest ecological protection strategies. Finally, the sustainable development theory provides a balanced framework of ecological protection and tourism development, emphasizing that while promoting the development of forest wellness tourism, it is necessary to consider the sustainable use of resources and the

long-term protection of the environment. These theories provide theoretical support for this study.

Royal Belum State Park in Malaysia has ancient tropical rainforests and rivers over 130 million years old, a large number of charismatic wildlife, and rare plant species [42], and these resources provide a better foundation for the development of forest wellness tourism in this park [43–45]. However, at present, many tourists and developers' perceptions of tourism remain at the sightseeing level [46,47], and most of the existing studies have focused on exploring the benefits of forest wellness tourism on tourist physiological and psychological health and the mechanism of influencing tourism behaviors [7,48–53], with less attention paid to the relationship between tourist demands and forest conservation [54,55], especially how to achieve an effective combination of sustainable nature tourism and forest ecological conservation by incorporating tourist demands for forest wellness tourism demand to realize the effective combination of sustainable nature tourism and forest ecological conservation. While tourists are key participants in tourism activities [56], their behaviors and demands constitute the fundamental driving force for tourism development and directly affect forest ecosystem protection and management. Therefore, exploring tourist demands in forest wellness tourism and coordinating tourism and forest ecological conservation goals are important for realizing the sustainable development of nature tourism and forest conservation.

To address this research question, this study categorizes and weights tourist demands. The KANO model effectively identifies key factors affecting tourist satisfaction [57,58]. At the same time, AHP further clarifies the relative weights among demands, providing a scientific basis for developing more targeted sustainable nature tourism strategies. This study aims to identify the types of tourist demands and their importance in forest wellness tourism in Royal Belum State Park. It also hopes to provide practical guidance for sustainable tourism management in the park by integrating with forest ecological conservation. Figure 1 clearly shows the research approach of this study.

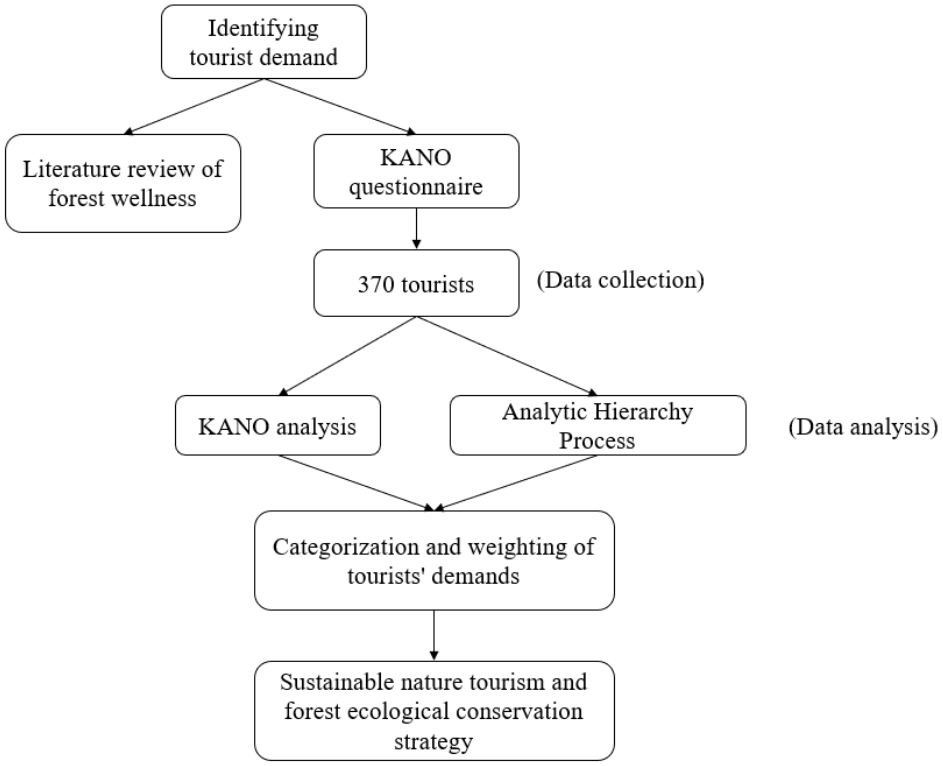

Figure 1. Research approach map.

2. Materials and Methods

Forest wellness tourism combines the concepts of forest ecosystems and health orientation, aiming to improve tourist physical and mental health through the forest environment. This study used a combination of the KANO model and AHP to accurately identify the demand and importance ranking of tourists in Royal Belum State Park regarding forest wellness tourism [59], thus providing a valuable reference for exploring the strategies of forest wellness tourism and sustainable nature tourism and forest conservation. We formalized the data collection after obtaining approval from the ethical review board. From 1 August to 1 September 2024, this period included the recruitment and screening of the target population and the subsequent data collection. Written informed consent was obtained from participants throughout the process.

2.1. Study Area and Target Population

The researchers collected data from tourists at Royal Belum State Park in Malaysia. Classified initially as Belum Forest Reserve in 1971 [60] and subsequently reclassified as a state park in 2007, Royal Belum State Park covers a total area of 117,500 hectares, spanning the northern part of Peninsular Malaysia's undisturbed and pristine lowland Loblolly and montane Loblolly. It spans the undisturbed pristine lowland Leucaena, montane Leucaena, and low mountain forests of northern Peninsular Malaysia (approximately 1533 m above sea level). It forms the northern and strategic component of the Central Forest Spine (CFS). As shown in Figure 2. It is considered one of the oldest, protected, undisturbed, and pristine landmasses in Peninsular Malaysia, with some of the world's oldest tropical rainforests and rivers more than 130 million years old [42] and an abundance of charismatic wildlife, such as the elephant maximus and the Malayan tiger, and rare plant species such as the maharaja flower, including endangered species [61], such as the Sumatran rhinoceros.



Figure 2. Map of Royal Belum.

This study adopted a stratified sampling strategy to collect a minimum of 370 valid data from different periods and groups of tourists in order to minimize the risk of sample bias. The study concluded that the total population size affects the sample size and that a sample size equal to or less than 370 is appropriate when the total population size (N) is less than 10,000. In order to ensure the validity of data collection, the number of 370 tourists will be used as the minimum valid sample size. Considering the unavoidable factors during the questionnaire collection process, this study will distribute 20% more questionnaires. This study strictly follows ethical norms, and all participants were provided with a de-

tailed study description and informed consent form before the start of the questionnaire, clearly informing participants that their data would be anonymized and used for academic research only.

2.2. Tourist Demand Index

This study refers to the support of some scholars' related literature [61–64], and through optimization and screening, finally constructs a tourist demand system with 22 demands in four dimensions, including resource environment, infrastructure, service facilities, and functions (Table 1).

Table 1. Tourist demands system.

Dimension	Code	Demand	Demand Description
Resource Environment	A1	High forest coverage rate	Large forest coverage area
	A2	Varied wildlife	Abundant animal and plant resources
	A3	Comfortable climate	Climatic conditions are pleasant, such as temperature and humidity
	A4	Good air quality	The air is clear and rich in various beneficial factors.
	A5	Good water quality	Clean and clear, harmless to health
	A6	Unique human resources	Unique historical culture, art, folk customs, etc.
Infrastructure	B7	Convenient traffic	With perfect transportation facilities, the accessibility of vehicles is high
	B8	Reasonable route layout	The main roads and tourist routes are well-laid and reasonably set
	B9	Reasonable public facility setting	Reasonable layout of leisure kiosks, chairs, garbage bins and toilets
	B10	Detailed boot identification	Clearly defined road map, functional instructions, etc., to reduce the confusion of getting lost
Service Facilities	C11	Clean sanitation	Good overall sanitary environment and timely disposal of all kinds of garbage
	C12	Good accommodation facilities	Comfortable accommodation, good room environment and complete facilities
	C13	Healthy diet	Healthy, safe and balanced catering with local characteristics
	C14	Shopping with a good experience	During consumption, such as quality, variety, price, moderate service, comfortable shopping environment, etc
	C15	Efficient and rapid medical emergency	Able to respond quickly in case of emergency and provide timely medical services
	C16	Equipped with professional health care staff	Have received professional training and can provide rehabilitation, nursing or other health-related professional services for tourists
	C17	Abundant projects	Various activities and projects in the region can meet the different demands of tourists
Function	D18	Entertainment	Conducive to leisure and relaxation
	D19	Knowledge learning	During the tour, learn about culture, history, nature, and other knowledge
	D20	Recovery and recuperation	It can help restore health and improve physical and mental state
	D21	Exercise and fitness	It can promote health
	D22	Parent–child activities	There are interactive activities suitable for families and children to participate in, which can strengthen parent–child relationships

2.3. Questionnaire Design

The questionnaire in this study is designed as a KANO model questionnaire. The questionnaire will be divided into two parts. The first part will be the essential information, including seven questions such as gender, age, education, income, etc. The second part will be the KANO questionnaire containing 22 specific demand indicators. Each demand indicator question consists of positive and negative questions to understand the tourist perceptions of each demand. In this questionnaire, the positive questions measure the tourist evaluation when they have this demand, and the negative questions measure the tourist evaluation when they lack this demand and are scored using a 5-point Likert scale. The design of the questionnaire is shown in Table 2. Meanwhile, the reliability of the questionnaire was tested, and the test results are displayed in Section 3.1.

Table 2. KANO questionnaire.

Question:	Very Satisfied	Should Be Like This	Does Not Matter	Tolerable	Dissatisfied
How do you feel if it has this function?					
How do you feel if it does not have this function?					

2.4. Data Collection

From 1 August to 1 September 2024, the researcher collected data from tourists at Royal Belum State Park, Malaysia. A total of 444 questionnaires were distributed in this study to ensure a valid sample size of 370 tourists. Participants needed approximately 5–10 min to complete the questionnaire, which was developed anonymously and collected by scanning the code to fill in the questionnaire. The tool used was Questionnaire Star. Users can create and distribute questionnaires and collect data through Questionnaire Star. Once the questionnaire is released, the researcher can obtain feedback from the participants instantly so that the questionnaire data can be obtained quickly and the data collection security can be guaranteed.

2.5. Data Analysis Approach

2.5.1. KANO Model

The KANO model, proposed by Noriaki Kano in 1984, is an effective tool for categorizing and prioritizing user demands. It provides insight into how different attributes of tourism services affect customer satisfaction and helps identify which features are essential, which enhance satisfaction, and which features, if not present, may lead to dissatisfaction [65]. The Kano model categorizes service attributes into five types: must-have qualities, one-dimensional qualities, attribute qualities, different qualities, and reverse qualities.

The KANO model has been widely used in healthcare [66,67], manufacturing [68], services [69,70], tourism [71], etc. In addition, integrating the KANO model with other analytical frameworks further enhances its utility in tourism and can provide a more balanced approach to service design and improvement. For example, for regional attractions such as art streets, the KANO model helps to identify attractive factors that enhance the area's appeal to tourists. This includes integrating regionally distinctive visitor demands to create an engaging tourist experience [72]. In recreational tourism, such as in suburban areas, integrating the Kano model with the means-end chain (MEC) theory provides insight into the cognitive structure of tourists. This integration can help prioritize management

decisions for recreational resources, focusing on attributes such as water resources and hiking trails that tourists most value.

It determines the attribute categorization by calculating the better–worse coefficient. This method of analysis helps assess the degree of impact of a feature on increasing satisfaction or reducing dissatisfaction.

The specific calculation formula of the better–worse coefficient is as follows:

$$\frac{\text{Better}}{\text{SI}} = \frac{(\text{O}+\text{A})}{(\text{M}+\text{O}+\text{A}+\text{I})} \tag{1}$$

$$\frac{\text{Worse}}{\text{DSI}} = -1 \times \frac{(\text{O}+\text{M})}{(\text{M}+\text{O}+\text{A}+\text{I})} \tag{2}$$

When the absolute values of the better and worse coefficients are more significant than 0.5, the current demand is categorized as a one-dimensional quality.

When the absolute values of the better and worse coefficients are less than 0.5, it is classified as an indifferent quality.

When the better coefficient is more significant than 0.5, and the absolute value of the worse coefficient is less than 0.5, it is labeled as an attractive quality.

When the better coefficient is less than 0.5, and the absolute value of the worse coefficient is more significant than 0.5, it is deemed a must-have quality.

A quadrant chart is constructed by calculating each function's better–worse coefficients. Within each quadrant, functions with higher, better values are generally prioritized.

2.5.2. Analytic Hierarchy Process

In addition, due to the limitations of the KANO model, it cannot accurately assess the importance of different demands. Therefore, based on this, we introduced the Analytic Hierarchy Process (AHP) to rank the demand weights. AHP was proposed by Thomas Saaty in the 1970s, and he described it entirely in his later book [73]. AHP is a systematic decision support methodology widely used to analyze and solve complex decision problems. It mainly applies to situations where different alternatives must be evaluated based on multiple criteria [74]. AHP usually involves a goal layer, criterion layer, and alternatives layer [75] and calculates the relative weight of each decision element by constructing a judgment matrix [76] designed to help decision-makers clarify their priorities and select the best solution.

In applying AHP, it is first necessary to construct a judgment matrix by comparing the elements in the decision problem two by two. The elements of each judgment matrix represent the relative importance of decision elements i and j [77]. Table 3 is the criteria for relative importance ratio. Based on this, AHP can calculate the weight of each decision element using the geometric mean method, weighted average method, eigenvalue method, consistency ratio method, and so on [34]. Adopting this method to assess and determine the importance and priority of each element [78], which, to a certain extent, makes up for the shortcomings of the KANO model in statistical analysis. In addition, the application process for AHP is as follows:

Firstly, construct a judgment matrix:

$$A = \begin{bmatrix} a_{11} & a_{12} & \cdots & \cdots & a_{1n} \\ a_{21} & a_{22} & \cdots & \cdots & a_{2n} \\ \cdots & \cdots & a_{ij} & \cdots & \cdots \\ \cdots & \cdots & \cdots & \cdots & \cdots \\ a_{n1} & a_{n2} & \cdots & \cdots & a_{nn} \end{bmatrix} \tag{3}$$

Secondly, the importance of judgment of the matrix elements.

Thirdly, calculate the weight vector of the decision element.
(1) Normalize the matrix with the formula:

$$b_{ij} = \frac{a_{ij}}{\sum_{i=1}^{n} a_{ij}} (i, j = 1, 2, Ln) \quad (4)$$

(2) Sum the elements of the matrix:

$$\overline{w}_i = \sum_{j=1}^{n} b_{ij} (i, j = 1, 2, Ln) \quad (5)$$

(3) For $\overline{w_i}$ in the above equation, normalize the calculation:

$$w_i = \frac{\overline{w}_i}{\sum_{i=1}^{n} \overline{w}_i} (i = 1, 2, Ln) \quad (6)$$

(4) Test CI:

$$\mathrm{CI} = \frac{\lambda_{max} - n}{n-1} \quad (7)$$

(5) Test CR:

$$\mathrm{CR} = \frac{\mathrm{CI}}{\mathrm{RI}} \quad (8)$$

In this study, the researcher validates the reasonableness of the judgment matrix through consistency, thus ensuring that it provides a valid basis for subsequent analysis.

Table 3. Criteria for relative importance ratio.

Scale	Expression Meaning
1	Comparing the two factors, they have the same importance.
3	Comparing the two factors, the former is more important than the latter.
5	Comparing the two factors, the former is more important than the latter.
7	Comparing the two factors, the former is more important than the latter.
9	Comparing the two factors, the former is more important than the latter.
2, 4, 6, 8	The median value of two adjacent factors.
Reciprocal of the above value	The reverse comparison of the two factors is the reciprocal of the original comparison value.

3. Results

3.1. Reliability and Validity Test

In this study, the reliability test was mainly conducted using SPSS, and the results of the reliability test of each scale are shown in Table 4. The results showed that Cronbach's α of both positive and negative questions were greater than 0.7, and the reliability was relatively reliable. Meanwhile, the exploratory factor analysis using SPSS showed that the KMO values were all > 0.7, and Bartlett's spherical test was significant ($p < 0.001$), indicating that the validity of the data was good, as in Tables 5 and 6.

Table 4. KANO Questionnaire Reliability results.

Question	Cronbach's α	Number
Positive question	0.792	22
Negative question	0.769	22

Table 5. Positive Question KMO and Bartlett's Test.

Sample suitability quantity		0.741
Bartlett's sphericity test	Last chi-square read	7201.697
	Freedom	210
	Significance	0.000

Table 6. Negative Question KMO and Bartlett's Test.

Sample suitability quantity		0.721
Bartlett's sphericity test	Last chi-square read	6403.326
	Freedom	210
	Significance	0.000

3.2. Results of KANO

In this study, 444 questionnaires were distributed, and 396 were actually returned. Of these, 29 took less than 90 s to fill out, 19 had obvious errors in their answers, and both were invalid questionnaires, with a recovery rate of 89.2%. We can determine each tourist demand by calculating the better and worse coefficients; the statistical data results are shown in Table 7.

Table 7. Analysis result of tourist's demand.

Index	Dimension	A (%)	O (%)	M (%)	I (%)	Better	Worse	Attribute
A1	Environmental Resources	10.26	21.96	54.18	13.60	0.3222	−0.7613	M
A2		26.01	17.42	44.39	10.50	0.4417	−0.6286	M
A3		13.13	23.63	50.84	12.41	0.3675	−0.7446	M
A4		19.81	26.01	44.39	8.83	0.4627	−0.7108	M
A5		17.18	22.20	25.06	34.84	0.3966	−0.4760	I
A6		45.35	16.95	24.82	11.46	0.6320	−0.4237	A
B7	Infrastructure	41.53	29.12	24.11	3.10	0.7220	−0.5439	O
B8		29.59	30.79	27.68	10.98	0.6096	−0.5904	O
B9		25.06	32.46	26.01	13.84	0.5907	−0.6005	O
B10		26.25	14.08	22.91	36.75	0.4033	−0.3699	I
C11	Service Facilities	33.89	35.08	22.91	5.97	0.7049	−0.5927	O
C12		23.60	25.32	34.64	8.12	0.5336	−0.6540	O
C13		28.40	26.49	36.75	7.40	0.5542	−0.6386	O
C14		39.62	19.81	24.58	14.08	0.6058	−0.4526	A
C15		52.27	15.51	22.20	8.59	0.6877	−0.3826	A
C16		52.27	15.51	22.20	8.59	0.6877	−0.3826	A
C17		34.84	34.61	21.00	6.92	0.7132	−0.5711	O
D18	Function	33.41	37.47	26.49	1.67	0.7157	−0.6458	O
D19		26.01	13.84	21.96	38.19	0.3986	−0.3580	I
D20		53.46	24.58	16.95	2.39	0.8015	−0.4265	A
D21		25.78	14.08	23.87	36.28	0.3986	−0.3795	I
D22		44.39	18.85	29.12	5.49	0.6463	−0.4902	A

According to the results from the data, five indicators are must-be qualities, which are high forest coverage rate (A1), varied wildlife (A2), comfortable climate (A3), good air quality (A4), and efficient and rapid medical emergency (C15); eight are one-dimensional qualities, which include convenient traffic (B7), reasonable route layout (B8), reasonable public facilities setting (B9), clean sanitation (C11), good accommodation facilities (C12), healthy diet (C13), abundant projects (C17), and entertainment (D18); five items are one-dimensional qualities include entertainment (D18); five are of attractive quality, including unique human resources (A6), shopping with a good experience (C14), equipped with professional health care staff (C16), recovery care staff (C16), recovery and recuperation (D20), and parent–child activities (D22); 4 are different qualities, including good water quality (A5), detailed boot identification (B10), knowledge learning (D19), and exercise and fitness (D21). There were no reverse qualities. Also, based on the better–worse values of the 22 tourist demands, we can obtain a quadrant map, as shown in Figure 3.

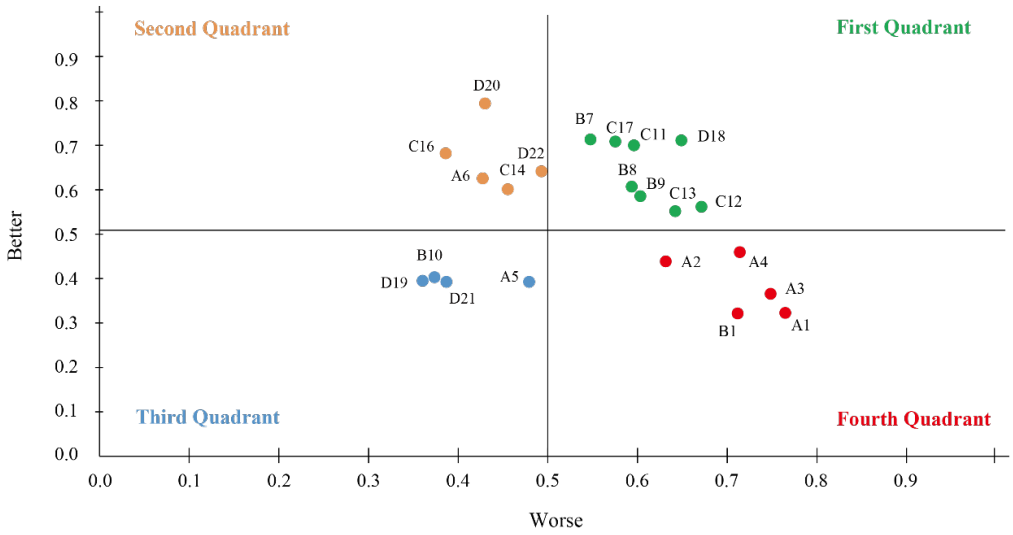

Figure 3. Four-quadrant diagram based on the better–worse coefficient.

The demands in the first quadrant are one-dimensional qualities, characterized by relatively high absolute values of better and worse. The fulfillment or non-fulfillment of this type of demand significantly impacts tourist satisfaction: if Royal Belum State Park can enhance this type of demand, tourist satisfaction will follow; conversely, a decrease in satisfaction will occur. The second quadrant represents attractive quality; the absolute value of better is high, and the absolute value of worse is low. When this type of demand is not met, tourist satisfaction will not decrease; however, if it is met, satisfaction will increase significantly. The demands in the third quadrant are of indifferent quality, with low absolute values of better and worse, which means that these demands have no significant effect on tourist satisfaction, and tourists are indifferent. Demands in the fourth quadrant correspond to must-have qualities, with a low absolute value of better and a high absolute value of worse. When these demands are met, tourist satisfaction does not increase significantly, but if they are not met, satisfaction decreases significantly.

3.3. Results of AHP

The indicator evaluation system (Table 8) was constructed based on the results of KANO (Table 7), where an indifferent quality means that the tourists' attitudes towards demands are neutral. Therefore, A5, B10, D19, and D21 are not analyzed.

Table 8. Index system.

Dimension	Index
Must-have Quality	A1 A2 A3 A4 C15
One-dimensional Quality	B7 B8 B9 C11 C12 C13 C17 D18
Attractive Quality	A6 C14 C16 D20 D22

In this part, the researcher evaluated by inviting 11 experts from related fields. To ensure the reliability of the assessment results, a consensus was reached through expert discussions and adjustments to ensure that all experts had the same opinion during the assessment process. Subsequently, the assessment results were synthesized and converted into final weight values to ensure that the weight calculation for each decision element was consistent with the overall hierarchy and that the assessment results were broadly representative and reliable.

By constructing the comparison matrix, the researcher calculates the weight values of all the secondary demand indicators under the must-have quality indicator, one-dimensional quality indicators, and attractive quality indicators, respectively, to check if they meet the consistency test criteria. All the results are shown in Tables 9–13.

According to the formula, it was found that CR = 0.0079 < 0.10, which satisfies the consistency test.

Table 9. Weight of first-level demand index.

	Must-Have Quality	One-Dimensional Quality	Attractive Quality	Weight
Must-have Quality	1	2	3	0.5390
One-dimensional Quality	1/2	1	2	0.2973
Attractive Quality	1/3	1/2	1	0.1638

Table 10. Weight of secondary indexes that are must-have qualities.

	A1	A2	A3	A4	C15	Weight
A1	1	4	2	3	6	0.4258
A2	1/4	1	1/3	1/2	2	0.0972
A3	1/2	3	1	2	4	0.2591
A4	1/3	2	1/2	1	3	0.1590
C15	1/6	1/2	1/4	1/3	1	0.0588

CR = 0.0111 < 0.10 in must-have qualities, satisfying the consistency test.

Table 11. Weight of secondary indexes of one-dimensional qualities.

	B7	B8	B9	C11	C12	C13	C17	D18	Weight
B7	1	5	6	4	8	7	3	2	0.3531
B8	1/5	1	2	1/2	2	2	1/2	1/3	0.0760
B9	1/6	1/2	1	2	1/2	1	1/3	1/4	0.0577
C11	1/4	2	2	1	2	2	1/2	1/3	0.0916
C12	1/8	1/2	1/2	1/2	1	1	1/3	1/4	0.0416
C13	1/7	1/2	1	1/2	1	1	1/2	1/3	0.0503
C17	1/3	2	3	2	3	2	1	1/2	0.1287
D18	1/2	3	4	3	4	3	2	1	0.2009

CR = 0.0347 < 0.10 in one-dimensional qualities, satisfying the consistency test.

Table 12. Weight of secondary indexes of attractive qualities.

	A6	C14	C16	D20	D22	Weight
A6	1	2	1/2	1/4	1/3	0.0972
C14	1/2	1	1/3	1/6	1/4	0.0588
C16	2	3	1	1/3	1/2	0.1590
D20	4	6	3	1	2	0.4258
D22	3	4	2	1/2	1	0.2591

CR = 0.0111 < 0.10 in attractive qualities, satisfying the consistency test.

Table 13. Weight result of the index system.

Dimension	Weight	Index	Weight	Comprehensive Weight	Sequence
Must-have Quality	0.5390	A1	0.4258	0.2295	1
	0.5390	A2	0.0972	0.0524	7
	0.5390	A3	0.2591	0.1397	2
	0.5390	A4	0.1590	0.0857	4
	0.5390	C15	0.0588	0.0317	10
One-dimensional Quality	0.2973	B7	0.3531	0.1050	3
	0.2973	B8	0.0760	0.0226	13
	0.2973	B9	0.0577	0.0172	14
	0.2973	C11	0.0916	0.0272	11
	0.2973	C12	0.0416	0.0124	17
	0.2973	C13	0.0503	0.0150	16
	0.2973	C17	0.1287	0.0383	9
	0.2973	D18	0.2009	0.0597	6
Attractive Quality	0.1638	A6	0.0972	0.0159	15
	0.1638	C14	0.0588	0.0096	18
	0.1638	C16	0.1590	0.0260	12
	0.1638	D20	0.4258	0.0697	5
	0.1638	D22	0.2591	0.0424	8

In summary, in this study, we categorize and rank tourist demands by the KANO model and AHP (Table 14), and we can obtain the following results:

Table 14. Results.

Classification Item	Sequence
	Must-have quality > One-dimensional quality > Attractive quality > Indifferent quality
Must-have quality	A1 > A3 > A4 > A2 > C15
One-dimensional quality	B7 > D18 > C17 > C11 > B8 > B9 > C13 > C12
Attractive quality	D20 > D22 > C16 > A6 > C14

Table 14. *Cont.*

Classification Item	Sequence
Environmental Resources	A1 > A3 > A4 > A2 > A6 > A5
Infrastructure	B7 > B8 > B9 > B10
Service Facilities	C15 > C17 > C11 > C13 > C12 > C16 > C14
Function	D18 > D20 > D22 > D19 > D21

According to the data, we found that the must-have qualities are the most important; they are the basic demand that tourists think forest wellness tourism must have. In terms of weight ranking, the order of these indicators is high forest coverage rate (A1), comfortable climate (A3), good air quality (A4), varied wildlife (A2), and efficient and rapid medical emergency (C15). Next are the one-dimensional qualities: a potential demand for tourists, and it is not mandatory. However, the presence of such demand would be a tremendous competitive advantage. In terms of weighting, the rankings of these indicators are convenient traffic (B7), entertainment (D18), abundant projects (C17), clean sanitation (C11), reasonable route layout (B8), reasonable public facilities setting (B9), healthy diet (C13), and good accommodation facilities (C12). Attractive qualities become less important than the two types of demands we mentioned earlier. These demands belong to the category where tourist satisfaction will increase if they are present and will not decrease if they are not. They are ranked in the following order: recovery and recuperation (D20), parent–child activities (D22), equipped with professional healthcare staff (C16), unique human resources (A6), and shopping with a good experience (C14). The last is indifferent quality, which does not affect tourists whether it is available or not.

In addition, in the environmental resources dimension, four items are categorized as must-have qualities, of which a high forest coverage rate (A1) is considered the most important by tourists, followed by comfortable climate (A3), good air quality (A4), and varied wildlife (A2). In addition, the unique human resources (A6) index is categorized as an attractive quality whose fulfillment is conducive to increasing tourist loyalty. At the same time, good water quality (A5) belongs to the category of indifferent qualities, whose presence or absence does not affect tourists.

In the infrastructure dimension, except for detailed boot identification (B10), convenient traffic (B7), reasonable route layout (B8), and reasonable public facilities setting (B9) are categorized as one-dimensional quality. The data show that convenient traffic is the most important to tourists, followed by reasonable route layout and reasonable public facilities setting, which are the areas that tourists think should be improved to increase their satisfaction.

In the service facilities dimension, efficient and rapid medical emergency (C15) belongs to the must-have quality with the first weight, and among the four demand elements belonging to the one-dimensional qualities, including abundant projects (C17) are considered the most important by tourists, followed by clean sanitation (C11), healthy diet (C13), and suitable accommodation facilities (C12). As an attributed quality, being equipped with professional healthcare staff (C16) was significantly more important than shopping with a good experience (C14).

In the function dimension, entertainment (D18) is considered a must-have quality, and recovery and recuperation (D20) and parent–child activities (D22) belong to the attractive quality. We will find that during forest wellness tourism, tourists show a desire for physical recovery and family bonding. In addition, knowledge learning (D19) and exercise and fitness (D21) are considered indifferent qualities.

4. Discussion

This study used the KANO model with AHP to assess tourist demands in forest wellness tourism in Royal Belum State Park. It revealed the different effects of each demand dimension on tourist satisfaction and loyalty. Differentiated strategic programs were adapted more precisely by categorizing tourist demands into four categories: must-have qualities, one-dimensional qualities, attractive qualities, and indifferent qualities. These findings not only expand the theoretical research in forest wellness tourism and provide accurate data support for tourism managers but also provide new perspectives for the research on sustainable nature tourism and forest ecological conservation.

The study results show that a high forest coverage rate is the most basic demand of tourists and is considered the core condition to be prioritized. This finding is consistent with the existing literature, indicating that the quality of the natural environment is an important factor in forest wellness tourism [23–27]. It not only affects the experience of tourists but also directly influences the destination's attractiveness. Therefore, protecting ecological resources is essential to ensure Royal Belum State Park's competitiveness and long-term sustainability. Also, it was found that a comfortable climate, good air quality, varied wildlife, and efficient and rapid medical emergency were similarly identified as key factors affecting the tourist experience. These basic demands reflect the unique value of forest ecosystems as a tourism resource for wellness tourism, proving that the ecological environment promotes tourist physical and mental health [48,49]. Especially after COVID-19, tourists increasingly emphasized mental and physical health. These findings are consistent with previous research emphasizing the profound impact of the natural environment on tourist health and well-being [51–53]. Failure to meet these core demands may trigger tourist dissatisfaction and significantly diminish the overall tourism experience, which agrees with the established literature on the importance of natural tourism resources [3,19], reflecting the close relationship between tourist experience and environmental qualities.

The study further found that convenient traffic, reasonable route layout, and reasonable public facilities are important infrastructures for enhancing tourist satisfaction, which play a key role in improving the tourist experience and enhancing loyalty [79]. Compared with other studies [19,54], convenient transportation, in particular, directly affects tourist convenience and comfort and demonstrates significant value in reducing time wastage and enhancing overall tourism efficiency. This result reveals, to a certain extent, the strong demand of modern tourists for efficient and convenient services, especially in the current accelerating pace of life, which is particularly important. Moreover, the reasonable route layout and public facility settings improved the tour flow for tourists. They avoided unpleasant experiences such as getting lost, which is consistent with the findings in other tourism destination studies [61,80].

Notably, recovery recuperation and parent–child activities significantly impact tourist satisfaction. Although this kind of demand is a potential demand, and its absence does not directly lead to a decrease in satisfaction, if satisfied, it will significantly enhance the overall experience and satisfaction of tourists. Thus, we can glimpse the gradual pursuit of diversifying and personalizing tourist demands. In addition, this finding is consistent with the findings presented by Wang et al. (2023) [81]. It suggests that they attract a wider group of tourists and enhance their loyalty, especially in the context of family travel. Through these activities, Royal Belum State Park can meet the current market demand and develop a new group of tourists, which will lead to a more competitive market.

In addition, the study results show that human resources is a unique strength of Royal Belum State Park. The organic combination of local ecological culture and traditional practices adds a unique cultural experience to ecotourism in the park [30]. This result supports recent studies on the integration of culture and nature [82,83] and emphasizes the

importance of cultural factors in enhancing tourism attractiveness. With the changes in the tourism market, tourists are increasingly emphasizing the cultural depth and personalized experience of a destination [84]. At the same time, their demands are no longer limited to traditional sightseeing tourism; they also pay more attention to physical and mental health and family relationship tourism experience, as shown in this study. Therefore, natural resources and humanistic features should be fully integrated into future tourism development to increase tourists' understanding of local culture and sense of participation through innovative cultural experience activities to ensure that Royal Belum State Park can maintain long-term advantages in the fierce market competition.

5. Conclusions

This study systematically assesses tourist demands in forest wellness tourism in Royal Belum State Park, Malaysia. It reveals the impact of different demand dimensions on tourist satisfaction and loyalty. The study clarified the categorization of demands and their relative importance through the KANO model and AHP and proposed specific development strategies. The study results show that environmental resources such as forest coverage, air quality, and climatic conditions are the core elements affecting tourist satisfaction and should be the core focus of tourism development and ecological protection. Meanwhile, infrastructure and service facilities are important in enhancing tourist experience, especially regarding transportation accessibility, route planning, and public facilities. Regarding function, introducing experiential services such as therapeutic programs and parent–child activities brings added value to tourists. It enhances the attractiveness and competitiveness of the destination. These analyses provide comprehensive data support and precise development strategies for Royal Belum State Park, laying the foundation for the sustainable development of its wellness tourism.

5.1. Theoretical and Policy Implications

The practical contributions of this study are manifested on several levels. First, through the combination of the KANO model and AHP, it provides a framework for accurately identifying tourist demands, which helps managers of Royal Belum State Park to understand better the specific demands for enhancing tourist satisfaction and loyalty and provides a new perspective for the construction and sustainable development of the park. Second, this study fills the gap between the theories of forest wellness tourism, sustainable development, and forest ecological protection and proposes a sustainable development model that combines the protection of ecological resources with tourist demands, thus promoting the development of theories that harmonize tourism and environmental protection.

In addition, at the policy level, the findings of this study provide a practical basis for formulating policies related to forest wellness tourism. First, priority should be given to protecting forest ecosystems and ensuring the sustainable use of forest resources to maintain the attractiveness of forest wellness tourism. Second, the study suggests that improving infrastructure (e.g., transportation, etc.) is critical to the tourist experience, and policies should support investments and improvements in this area. In addition, as tourist demands diversify, policies can improve the destination's competitiveness by attracting a wider group of tourists through innovative tourism products (e.g., parent–child activities and health retreat programs). Ultimately, this study emphasizes the importance of cultural factors, and policies should encourage incorporating local cultural features in tourism products to increase the destination's unique appeal.

5.2. Limitations and Recommendations

Despite the valuable results obtained in this study, several limitations remain. First, this study's cross-sectional data collection method has limitations in capturing the dynamic demands and complex behaviors of tourists. Tourists' demands adjust over time and in response to changes in the external environment, and thus may not fully reflect trends in tourist demands over time. Second, the sample for this study focused on tourists visiting Royal Belum State Park, whose demands and preferences may differ from those of tourists in other recreation tourism destinations. Therefore, the external generalizability of the study's findings may be limited. Additionally, although this study explored several infrastructure and service elements, there will still be specific indicators not identified by this study that may play an equally important role.

Future research can be expanded in the following areas further to promote the development and innovation of forest wellness tourism. First, longitudinal studies should be conducted to continuously track changes in tourist demand and analyze how tourist preferences adjust with time, season, or external environment from a dynamic perspective. This will help managers predict demand trends in advance and optimize the flexibility and adaptability of tourism services. Second, future research could explore the role of cultural background and emotional connection in the tourist experience. There may be significant differences in the demands and preferences of tourists from different cultural backgrounds in recreational tourism, which can be analyzed through cross-cultural comparisons to reveal the impact of these differences on tourist satisfaction and loyalty. Third, it is recommended to identify specific indicators through a more comprehensive approach, such as using a systematic literature review, which will enhance the content validity of the survey indicators. Finally, future research should enhance the exploration of environmental sustainability, especially in finding a balance between tourism development and ecological conservation. Research could focus on how tourist environmental awareness affects their tourism behavior, and could explore the development potential of green wellness projects.

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