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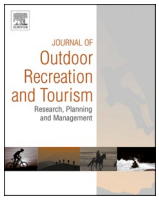

Research Article

The nexus between visitor satisfaction and expenditure behaviour in national parks: The case of Dragon Palace National Park, Guizhou, China

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ABSTRACT

Several studies have explored the relationship between visitor expenditure, experience, satisfaction, intention to recommend, and revisit intention in national parks, but there is a gap in exploring the direct relationship between satisfaction and expenditure of national park visitors. This research identifies relationships between expenditure and behaviour patterns in Dragon Palace National Park, a 5A visitor attraction in Guizhou province, China. A structured survey questionnaire was utilised to collect 412 responses from national park visitors, employing convenience sampling techniques from August to December 2022. A partial least squares-structure equation model 4.0 was used to analyse the data. Findings support the positive relationship between experience, satisfaction, intention to recommend, and revisit intention in the national park. Also, results confirm that rational and emotional dimensions effectively measure the experience level. Further, this research confirms that experience is not a predictor of expenditure and that satisfaction has a negative relationship with expenditure by providing a measurement model to examine the experience in the national park. It frames a new theoretical lens on the relationship between expenditure and satisfaction and contributes significance to national park operations, providing a reference for future research.

Management implications: The negative relationship between satisfaction and expenditure is interesting. The continuance of fostering national park visitor satisfaction for tourists cannot make sense to improve expenditure. The Dragon Palace National Park should pay more attention to overnight visitors' satisfaction and expenditure since they spend more but are less satisfied. It is vital to enhance the consuming willingness of visitors, improving the expenditure of satisfied visitors. Customising the experience, improving the cost performance of various goods and services, and enriching the experience content may work. The dimensions of the experience have been tested as effective, and the measurement model can be applied in other national parks.

1. Introduction

National parks are specific protected natural areas that can preserve ecosystems and should forbid harmful activities while offering science, education, and leisure recreation (Wu et al., 2021). National parks can represent unique tourist attractions (Mayer et al., 2010; Wall Reinius & Fredman, 2007). As vital places for people to visit and enjoy natural environments, national parks become significant tourism destinations (Driml et al., 2020).

Governments consider national park tourism as a tool to generate economic benefits for many countries or specific regions; it can provide locals with numerous opportunities associated with tourism development (Zawilińska et al., 2023). National parks may serve as the rare driver of economic development in weak regional economies due to national park visitors' expenditure (Mayer & Job, 2014). During visitors' trips to national parks, they spend money locally, in and around the protected area on food, drinks, souvenirs, etcetera. This spending generates a direct impact on the local economy. It can also indirectly impact the local economy due to the additional economic activity that results from the expenditures made by tourism businesses to support their operations. Meanwhile, visitor expenditure generates an induced impact on the local economy because of the additional economic activity and job creation that result from the spending of wages earned by employees in the tourism sector and its supply chain (Spenceley et al., 2021, pp.

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24–25). Accordingly, national park visitor expenditure has received much attention from the academic community (Job, Bittlingmaier, et al., 2021; Perles-Ribes et al., 2020; Stynes & White, 2006).

Visitor satisfaction is essential to realise national parks' economic impact, which to some extent relies on national park visitors' expenditure since visitor satisfaction usually leads to increasing rates of the retention of visitors' patronage and loyalty, which in turn affects the increased number of visitors and revenues (Hussain et al., 2023). The revenue from visitor expenditures for national parks can compensate for the opportunity cost of environmental conservation (Job et al., 2017) and benefit the community (Mayer et al., 2010). Visitor satisfaction and expenditure are significant factors in the development of national parks.

Visitor expenditure and satisfaction with destinations are crucial domains in tourism research, and several studies have analysed their relationship (Perles-Ribes et al., 2020). However, the findings of their relationships are often debated, as some studies report positive relationships while others indicate inverse relationships (D'Urso et al., 2020). A range of articles argues that it is positive (Cárdenas-García et al., 2015; Job, Bittlingmaier, et al., 2021), while Perles-Ribes et al. (2020) provided evidence that it is negative. The experience of national park visitors includes the entire process of visiting national parks (Sorakunnas, 2020), which strongly impacts national park visitors' satisfaction (Zolfaghari & Choi, 2023). However, more consensus is needed on the components used to measure experience (Godovykh & Tasci, 2020). Some studies emphasise the rational dimensions of experience, such as dining and retail (Kruger et al., 2015), while others focus on emotional experiences, including hedonism, novelty, local culture, refreshment, meaningfulness, involvement, and knowledge (Gohary et al., 2020). In addition, limited research has explored the relationship between visitor expenditure and experience.

Furthermore, behavioural intentions (intention to recommend and revisit intention) are essential concepts in the studies on visitor satisfaction, which consistently support that satisfaction leads to favourable behavioural intentions (Apriani et al., 2023). Although much literature discusses expenditure and revisits intention separately (Eren, 2019; Wicker et al., 2012), a few studies reveal their relationship (Larsen & Wolff, 2019; Rong-Da Liang et al., 2013). Job, Bittlingmaier, et al. (2021) highlighted that the perception of the economic benefits of national parks can affect the local population's attitude towards national parks. Similarly, the relationship between expenditure and intention to recommend was explored by Chulaphan and Barahona (2021), and most studies discuss them separately (Matzler et al., 2019; Song et al., 2010). Meanwhile, studies that have included and empirically estimated the visitor experience concept interrelated to satisfaction and behavioural intentions (Gohary et al., 2020; Lee et al., 2020; Li et al., 2021; Sharma & Nayak, 2019) in the context of national parks are limited. While some studies have separately explored satisfaction (Zolfaghari & Choi., 2023) and expenditure (Velmurugan et al., 2021) in the context of national parks, there is a significant need for comprehensive research that examines the interrelationships between expenditure, satisfaction, experience, intention to recommend, and revisit intention, particularly within the context of China's national parks.

This study aims to contribute to the ongoing debate regarding expenditure and satisfaction, enhance the existing literature on the relationships of expenditure with behavioural intentions, examine dimensions of measuring experience, and fill gaps in our understanding of the relationships between experience, satisfaction, and behavioural intentions within the national park context. It addresses four research questions: (1) what is the relationship between expenditure and satisfaction? (2) What are the dimensions of measuring the experience of national park visitors? (3) what is the relationship between expenditure and behaviour intentions (intention to recommend and revisit intention)? (4) How is the interplay of experience, satisfaction, and behaviour intentions in the context of national parks?

This study has two innovative facets. First, it integrates emotional and rational experiences to examine the overall experience level and further examine the satisfaction level in the context of national parks, which was not covered previously (Zolfaghari & Choi, 2023). Second, this study establishes the relationship between expenditure and behaviour patterns and confirms the relationship between expenditure, satisfaction, and revisit intention. The finding on the relationship between satisfaction and expenditure by national park visitors is uncommon (Perles-Ribes et al., 2020).

This study is structured in six parts. After the introduction, which illustrates the research gap, the second part reviews the literature on the primary constructs and relationships of expenditure with experience, satisfaction, and behaviour intentions; the third part depicts methodology; the fourth part is findings; the fifth part discusses the findings; and the sixth section concludes.

2. Review literature and hypotheses development

2.1. National park tourism

It is imperative to preserve Protected Areas (PAs) to the highest standard of ecological integrity and naturalness; tourism in PAs is a vehicle for achieving sustainable conservation and development outcomes (Job et al., 2017). Mayer et al. (2010) pointed to the importance of assessing the regional economic impact exerted by PAs because it is practical information for shaping public policy. In many cases, tourism's primary benefits are the creation of salaried jobs in accommodation and gastronomy businesses in PAs. These developments generate benefits that flow to various segments of local communities, thereby providing incentives for conserving protected areas, e.g. in Namibia (Naidoo et al., 2016). Zbaraszewski et al. (2022) conducted socio-economic research in the borderlands between Poland and Germany. They analysed visitor satisfaction, economic impacts, and park-people relationships of PAs in Euroregion Pomerania, revealing the importance of PA tourism development.

National parks protect and preserve the world's most valuable flora, fauna, natural landmarks, and wonders, allowing visitors to explore high-quality natural environments and unique places (Velmurugan et al., 2021). As a prominent category of PAs, national parks play an essential role in ecological and educational events. They are crucial visitor destinations providing tourism services and facilities, attracting millions of visitors annually (Job, Majewski, et al., 2021). Besides, they have a tremendous contribution to economic development. According to Swancey (2023), in 2022, 312 million park visitors spent an estimated $23.9 billion in local gateway regions while visiting National Park Service lands across the US. These expenditures supported 378 thousand jobs, $17.5 billion in labour income, $29.0 billion in value-added, and $50.3 billion in economic output in the national economy. National park tourism can also benefit regional economic development. Zbaraszewski et al. (2022) assessed the economic impact of tourism in Wolin National Park, Poland and found that the estimated number of day-trippers and their expenses were 2.78 million Euro of the total value of production in the region; the effect of the overnight visitors' expenses was much higher, reaching to 75 million Euro, which brought the total economic impact to the level of 78 million Euro. Although there are some threats from national park tourism to the local communities, such as disturbance and damage to nature, PA tourism can be regarded as beneficial to improve their income and quality of life (Reimann et al., 2011). The economic significance of national park tourism to the nation, region, and community is generated by the expenditure of visitors (Stynes & White, 2006).

2.2. Visitors' expenditure in national parks

Visitors'expenditure is a vital topic in the research of national parks (Stynes & White, 2006). do Val Simardi Beraldo Souza et al. (2019) explored that the average spending on regional visitor destinations in Brazilian protected areas is between USD 21.11 and USD 59.84. Further,

Mayer et al. (2010) confirmed that the daily expenditure per person of national park visitors is considerably below the national averages for tourists in Germany; day-trippers spend between 7 and 13 Euro per day, whereas overnight visitors spend between 37 and 57. Tourist spending can be divided into the following seven types: accommodation, meals, gas and oil, local transportation, retail stores, activities and guided tours, and other expenses in assessing the economic impact of tourism in protected areas of Brazil (do Val Simardi Beraldo Souza et al., 2019). Similarly, the recreation spending categories of dark sky tourism in national parks on the Colorado Plateau in the USA were retail sales, recreation, auto and transportation-related spending, grocery, restaurant, and lodging (Mitchell & Gallaway, 2019). Spenceley et al. (2021) suggested that spending categories typically include accommodation, food and drink, tours, activities, entertainment, souvenirs, transportation, and other context-specific spending categories (p. 45). The categories of spending vary in articles, implying that it is necessary to identify the spending category in different contexts. As for the determinants of visitor expenditure in national parks, Kruger et al. (2010) suggested that there were province of origin, group size, length of stay and accommodation preference.

2.3. The correlation between expenditure and satisfaction

One of the latest definitions of satisfaction is a composite construct of an overall evaluation of the degree to which the level of fulfilment is pleasant or unpleasant (Rachão et., 2021). Satisfaction and expenditure within destination contexts have been well explored individually; however, Perles-Ribes et al. (2020) highlighted that the correlation between satisfaction and expenditure needs to be thoroughly explored. Further, most studies have concluded a positive correlation between satisfaction and expenditure (Cárdenas-García et al., 2015; D'Urso et al., 2020). Bernini and Galli (2019) argued that the positive correlation between both constructs is not linear and relies on goods or services or demand within the segment in question. D'Urso et al. (2020) integrated the double-hurdle model and fuzzy set theory to create a new hybrid fuzzy double-hurdle model to examine the correlation between expenditure and visitor satisfaction levels. They revealed that the more the tourists are satisfied with the destination, the higher the spending on "other services" because they enjoy the entertainment the destination offers. Smolčić Jurdana and Soldić Frleta (2016) performed a regression with the log of daily expenditure as a dependent variable and four satisfaction dimensions derived by principal component analysis as independent variables. Their research revealed that the satisfaction dimension related to the diversity of facilities can positively determine the visitor expenditure in the destination. However, an ambiguous and even negative correlation between both constructs is possible because satisfaction is an inelastic factor in expenditure in Calp, a consolidated destination on the Spanish Mediterranean coastline (Perles-Ribes et al., 2020). Considering the controversial relationship between the two constructs, the following hypothesis is established.

Hypothesis 1. The higher the visitors' satisfaction level, the lower their expenditure.

2.4. The correlation between expenditure and experience

Experience has several different meanings and has been defined in many different ways, resulting in different components (Godovykh & Tasci, 2020), for instance, educational, escapist, esthetic, and entertainment (Pine & Gilmore, 1998); emotional, informative, practice, transformation (D'Urso et al., 2020); and hedonism, refreshment, involvement, meaningfulness, knowledge, local culture, and novelty, which are known as memorable tourism experience (MTE) model (Kim et al., 2012).

As the attributes of experiences in destinations vary and there is no consensus on them, this current study adopts thirteen dimensions, including the rational and emotional experience (Pham, 2007), to examine the overall experience. According to Pham (2007), experience includes rational and emotional impressions. Pine and Gilmore (1998) suggested that experience includes emotional or spirit-level impressions (p. 99). Sorakunnas (2020) illustrated that "experience is the sum of cognitive, emotional, sensorial, and behavioural responses produced during the buying process. Therefore, the experience of national park visitors includes the entire process of visiting national parks of visitors, comprising rational and emotional dimensions. In the context of the national park, the rational experience consists of the rational impressions of the facilities of visitors during the whole process of visiting the national park (Sorakunnas, 2020). Emotional experience is the national park visitors' emotional or spirit-level impressions (Pham, 2007; Pine & Gilmore, 1998). Based on previous studies, for the practical context of national parks, the rational dimensions of experience comprise entrance, accommodation, dining, retailing, shopping, and transportation, containing the whole visiting process in a national park (Gohary et al., 2020; Kruger et al., 2015; Sorakunnas, 2020). The emotional dimensions of experience consist of the seven dimensions of MTE, namely, hedonism, refreshment, involvement, meaningfulness, knowledge, local culture, and novelty (Kim et al., 2012), which are well-known and universally acknowledged by scholars (Rasoolimanesh et al., 2022; Zhang et al., 2018), reflecting the emotional impressions of the national park on visitors. Various studies have extensively investigated the visitor experience, focusing individually on either rational physical or emotional dimensions, as noted by Kruger et al. (2015) and Gohary et al. (2020) respectively. Integrating both rational and emotional dimensions is essential for detecting the overall experience of national park visitors. It can offer valuable insights for national park management from rational and emotional elements.

Regarding the correlation between experience and expenditure, Rachão et al. (2021) explored it in the context of food and wine tourism. Marksel et al. (2017) argued that experiences with transportation services critically affect the expenditure of cruise passengers in the context of cruise tourism. Buonincontri et al. (2017) pointed out that experience can determine expenditure, satisfaction, and happiness. Nella and Christou (2014) revealed that visitors involved in wine tourism experiences will spend more on on-site purchases. Reis et al. (2021) examined how visitors' spending on a trip to Porto related to experiences based on interviews with domestic and foreign tourists via Ordinary Least Squares (OLS) estimation. They revealed that the experience in destination plays a significant and positive role in visitors' spending. Hence, the following hypothesis is considered.

Hypothesis 2. The more positive the visitor's experience, the higher their expenditure in the destination.

2.5. The correlation between expenditure and intention to recommend

A few studies have explored the relationship between expenditure and intention to recommend (Smith et al., 2010). Rong-Da Liang et al. (2013) explored how food expenditure influences positive intention to recommend festival tourism and disclosed the negative relationship between expenditure and intention to recommend. Chulaphan and Barahona (2021) used an autoregressive distributed lag model, a panel-estimated generalised least square (ELGS), and a dataset of 31 countries from 2010 to 2017 to discover the determinants of visitor spending per capita. The result revealed that spending was driven by word of mouth (WOM), income, and increasing prices at visitor destinations. Matzler et al. (2019) conducted a large-scale empirical study to determine the effects of price on WOM and revealed a negative correlation between expenditure and WOM for first-time visitors. However, it did not affect returning visitors. Hence, the following hypothesis is considered.

Hypothesis 3. The higher the level of visitors' intention to recommend, the higher their expenditure.

2.6. The correlation between expenditure and revisit intention

Revisit intention is defined as an individual's readiness or willingness to make a repeat visit to the same destination (Stylos et al., 2016). Kim et al. (2011) identified the role of expenditure on revisit intention and suggested the direct relationship between expenditure and revisit intention in food tourism. Eren (2019) conducted a study with 407 foreign visitors to investigate perceptions of Turkish cuisine, intention to revisit, and visitor expenditure. Meanwhile, Larsen and Wolff (2019) analysed data from 2011 to 2018 to compare revisit intentions, likelihood of word-of-mouth recommendations, satisfaction levels, and spending patterns between domestic and international visitors. Their findings indicated that domestic visitors tended to revisit and spend more than their international counterparts. Based on this existing research, the following hypothesis is formulated.

Hypothesis 4. The higher the level of visitors' revisit intention, the higher their expenditure.

2.7. The correlation between experience and satisfaction

According to Jung et al. (2015), experience predicts and positively affects satisfaction. Emotional determinants of satisfaction with a destination are captured in Memorable Tourism Experiences (MTEs), which consist of seven dimensions of emotional experiences. For example, Gohary et al. (2020) assessed the effect of MTEs on destination satisfaction and confirmed a positive relationship between MTEs and satisfaction. Meanwhile, Suhartanto et al. (2020) indicated that rational and emotional responses to visitor attractions can affect satisfaction levels and behaviour intentions. Rational experience is affected by accessibility, attractions, accommodation, and amenities (Ivars-Baidal et al., 2019). Lee et al. (2020) employed the experience economy model to investigate how different types of experience influence satisfaction. They revealed that theme parks' educational and esthetic experiences significantly influenced visitors' satisfaction. Zolfaghari and Choi (2023) utilised a topic modelling method to derive the attribute of experience quality. They uncovered that experience attributes are strong antecedents of satisfaction in the context of Canadian national parks. Given this recent literature, the following hypothesis is considered.

Hypothesis 5. The more positive the visitors' experience level, the higher their satisfaction with the destination.

2.8. The correlation between satisfaction and intention to recommend

Satisfaction closely correlates with behavioural intentions (Job et al., 2017). Visitors with high satisfaction levels are more likely to recommend an attraction to others and to revisit the attraction (Bigné et al., 2001). Any informal discussion or recommendations of products through noncommercial and person-to-person were defined as WOM (Sweeney et al., 2020). Apriani et al. (2023) confirmed that satisfaction is the determinant of intention to recommend, resulting in satisfied visitors being more willing to recommend the destination to others. In contrast, dissatisfied visitors will likely spread the negative intention to recommend (Hosany et al., 2017). Given these debatable topics, the following hypothesis is established.

Hypothesis 6. The higher the visitors' satisfaction level, the higher their intention to recommend the destination.

2.9. The correlation between satisfaction and revisit intention

The relationship between satisfaction and revisit intention has been investigated (Mohseni et al., 2018). Chan et al. (2022) used partial least squares structural equation modelling (PLS-SEM) to study the relationships between service quality, satisfaction, and revisit intention at Semenggoh Nature Reserve, Malaysia. They found that service quality positively impacts satisfaction and subsequently affects the revisit intention. Dayour and Adongo (2015) argued that satisfaction was a determinant of revisit intention. Therefore, the following hypothesis is considered.

Hypothesis 7. The higher the visitor satisfaction level, the higher their revisit intention to the destination.

Overall, the seven hypotheses proposed in this study have been tested, and the findings are shown in Table 1.

Despite significant research efforts aimed at enhancing destination performance to ensure a satisfying experience for visitors, minimal studies have explored the concept of the visitor experience and its empirical connections to satisfaction and behavioural intentions (Gohary et al., 2020; Lee et al., 2020; Li et al., 2021; Sharma & Nayak, 2019). Additionally, few studies have investigated the relationship between expenditure and behavioural patterns (Perles-Ribes et al., 2020). Furthermore, the expenditure of visitors is a vital driver of the economic impact of national parks on the nation, region, and community (Stynes & White, 2006). Subsequently, based on the previous studies (Gohary et al., 2020; Kruger et al., 2015; Suhartanto et al., 2020) and the practical context of national parks, a conceptual framework is developed that models the experience, satisfaction, revisit intention, intention to revisit, and expenditure. The overall theoretical framework is shown in Fig. 1.

3. Methodology

3.1. Survey instrument

The questionnaire, comprising four parts, is designed to collect data for this research. The first part is on socio-demographic information. The second section is on travel information, including stay length, origin, and travel group size, which is conducive to segmenting visitors (Spenceley et al., 2021, p. 43). The third section is on the expenditure of visitors. National park visitors are asked to complete the questionnaire on every type of expenditure and the total expenditure per person per trip, which refers to the trip to the national park. Based on the research of Stynes and White (2006), the expenditure is divided into nine types: transportation, food and beverage, accommodation, admission fees, shopping, retail outlets, camping fees, entertainment, and other

Table 1
Summary of literature review on hypotheses.

Hypotheses	Literature	Context	Conclusion
H1 Satisfaction -> Expenditure	D'Urso et al., (2020), Smolčić Jurdana and Soldić Frleta (2016).	City tourism, Beach tourism	Positive Positive
	Perles-Ribes et al. (2020)	Beach tourism	Negative
H2 Experience- > Expenditure	Marksel et al. (2017), Buonincontri et al. (2017).	Cruise tourism, City tourism	Positive Positive
H3 Intention to recommend- > Expenditure	Chulaphan and Barahona (2021)	Thailand tourism	Positive
	Matzler et al. (2019).	Ski tourism	Negative
H4 Revisit intention - > Expenditure	Eren (2019),	Cuisine tourism	No clear relationship
	Larsen and Wolff (2019)	Norway tourism	Positive
H5 Experience- > Satisfaction	Gohary et al. (2020), Lee et al. (2020), and Zolfaghari and Choi (2023).	Ecotourism (forest and desert), Theme park, and National park	Positive Positive Positive
H6 Satisfaction- > Intention to recommend	Apriani et al. (2023)	Beach tourism	Positive
H7 Satisfaction- > Revisit intention	Chan et al. (2022), Dayour and Adongo (2015).	Protected area tourism and Northern Ghana tourism	Positive Positive

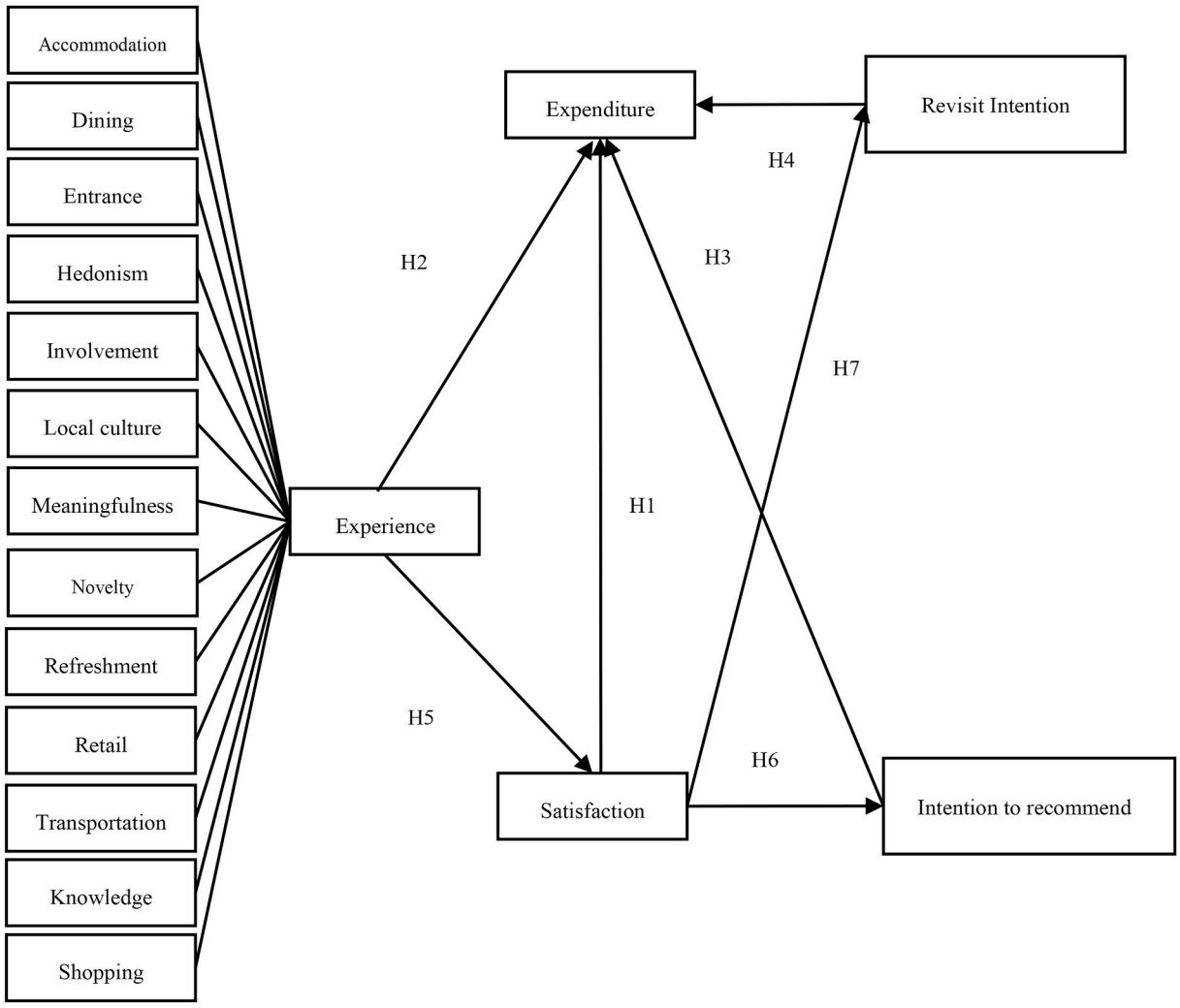

Fig. 1. The conceptual framework.

expenses. The fourth section addresses behaviour patterns, including 55 items designed based on the study of Gohary et al. (2020), including experience (45 items), satisfaction (4 items), intention to recommend (3 items) and revisit intention (3 items). A 5-point Likert scale is used for all measurements (1 = Strongly disagree; 5 = Strongly agree). The pilot study was conducted in July 2022, and 110 responses were received. The reliability of the questionnaire was tested by SPSS 27.0. The inter-item correlation of the items was between 0.3 and 0.9, the result of mineral Corrected Item-Total Correlation (CITC) of every construct, which is used to reflect the reliability of the questionnaire, was higher than 0.3, and Cronbach's alpha was 0.993, higher than 0.7, indicating the questionnaire was reliable. The questionnaire is shown in the appendix.

3.2. Study site

This study was performed in the Dragon Palace National Park in Guizhou province, China. It was opened in 1984 and was rated as one of the first batch of national parks in China in 1988 and the first batch of national 5A tourist attractions in 2007 (Guizhou Statistical Yearbook, 2020). 5A is the honour awarded for the most significant and best-maintained visitor attraction by the People's Republic of China (Yuan et al., 2021). Dragon Palace National Park is well known for its underground river caves, with a total area of 60 square kilometres, integrating dry caves, canyons, waterfalls, peak forests, cliffs, streams, stone forests and other karst geological and landform landscapes. It has the longest water cave in China and the largest cave in China. It has won two world records for the most flood and drought karst caves, the most concentrated and the lowest natural radiation dose rate. It also has a variety of magical and beautiful karst landscapes, of which four are the most highly regarded by visitors, attracting 500,000 visitors in 2022 (Liu et al., 2023).

China established and announced its first batch of national parks in 1982; by 2017, there were 244 national parks under the old national park system, 18 of which are located in Guizhou province (Guizhou Statistical Yearbook, 2020).In March 2018, the Chinese government enacted an institutional reform and established a new protected area system with three types of protected areas. The three protected areas are national parks, nature reserves, and natural parks (Yuan et al., 2021). In October 2021, five of ten trial national parks were officially designated as national parks, symbolising the birth of the new national park system (Xinhua News, 2023). Subsequently, the development path of national parks under the old national park system proposes new problems and has obtained the attention of scholars. Hence, Dragon Palace National Park is the study area (Fig. 2).

3.3. Data collection

On-site data collection was carried out in Dragon Palace National Park for those who finished their trip to it. The sample size of 318 was determined by G-power 3.1 based on the pilot study data. In total, 454 visitors were surveyed at the exit of Dragon Palace National Park,

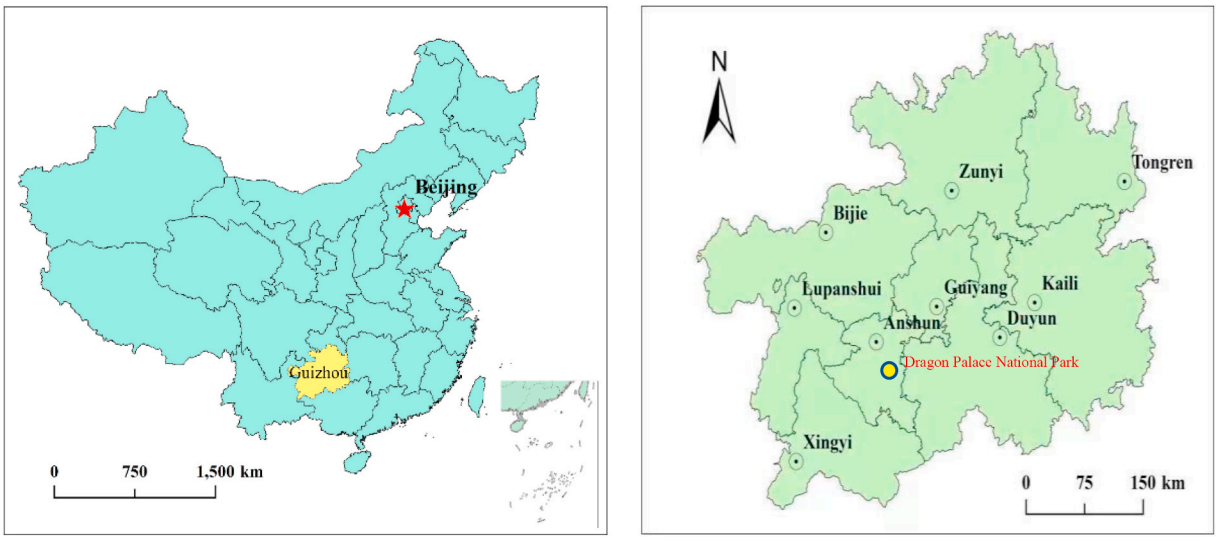

Fig. 2. The location of Dragon Palace National Park.

utilising convenience sampling from August to December 2022. During data cleaning, 42 responses were excluded as the respondents were below 18 years of age or the sum of each spending category did not match the total amount of spending reported. Finally, 412 valid responses were carried out for data analysis.

3.4. Data analysis

SPSS 27.0 is applied to do the preliminary data analysis. Structural equation modelling (SEM) via partial least squares (PLS) (Hair et al., 2021) is performed to test whether the measured indicators reliably reflected the hypothesised latent variables via confirmatory factor analysis (CFA). Partial Least Squares Structural Equation Modelling (PLS-SEM) is conducive to coping with a complex model with a small sample size, non-normally data distribution, and predictive and exploratory research (Purwanto & Sudargini, 2021). A two-step approach is employed to analyse the data in this study. The first step is the PLS-SEM algorithm, and the second step is bootstrapping. The model's reliability and validity are estimated before testing the model's structure via the PLS-SEM algorithm (Purwanto & Sudargini, 2021), and bootstrapping was carried out to assess the significance level of path coefficients (Hair et al., 2021).

The initial estimated model establishes the relationship among expenditure, experience, satisfaction, revisit intention, and intention to recommend. However, the explanation power is low, and the discriminant validity can not meet the standard (Kusumah et al., 2022). Hence, two control variables are added to the model, and two satisfaction and revisit intention items are deleted. The control variables are the length of stay (Smolčić Jurdana & Soldić Frleta, 2016) and origin (Mayer & Vogt, 2016), which have been justified as determinants of expenditure.

Respondents are separated by the stay length into two groups: (1) one-day visitors, represented by 0; (2) overnight visitors, represented by 1. Meanwhile, respondents are segmented by the distance between Dragon Palace National Park and visitor origin into six groups: (1) visitors from Guizhou, represented by 1; (2) visitors from Guangxi, Yunnan, and Hunan represented by 2; (3) visitors from Hubei and Zhejiang, represented by 3; (4) visitors from Henan and Shanxi, represented by 4; (5) visitors from Hebei, represented by 5; (6) visitors from Beijing represented by 6. Accordingly, the improved model, which enhances the R^2 of expenditure and meets the discriminant validity requirement, is established.

4. Findings

4.1. Descriptive data analysis

SPSS 27.0 was utilised for descriptive statistical analysis. Table 2 shows the respondents' socio-demographic and travel information. 86.4% of respondents were from Guizhou province, and 13.6% were from other parts of China. The average stay length is 1.94 days. Day-trippers accounted for 39.8%, and 60.2% were overnight visitors.

Table 2
Socio-demographic and travel information of respondents of Dragon Palace National Park (n = 412).

Gender	Frequency	Percentage
Male	160	38.8
Female	252	61.2
Total	412	100
Age (years)	**Frequency**	**Percentage**
18–25	244	59.2
26–35	112	27.2
36–45	36	8.7
46–55	12	2.9
56–65	4	1.0
>65	4	1.0
Total	412	100.0
Education Level	**Frequency**	**Percentage**
Middle school and below	36	8.75
High school degree	44	10.7
Bachelor's degree	320	77.7
Master's degree	8	1.9
Doctoral Degree	4	1.0
Total	412	100.0
Origin	**Frequency**	**Percentage**
Guizhou	356	86.4
Hunan	12	2.9
Guangxi	12	2.9
Yunnan	8	1.9
Others	24	5.8
Total	412	100
Stay length	**Frequency**	**Percentage**
One day visit	164	39.8
One night (two days)	112	27.2
Two nights (three days)	132	32.0
Three nights (four days)	4	1.0
More than three nights (More than four days)	0	0
	412	100
The average stay length		
Mean	1.94	
SD	0.869	

Table 3 shows the average spending of respondents in each category, highlighting a total average spending of USD 272.4 per person per trip. More specifically, there is an average of USD 44.4 (16.30%) on food and beverage, USD 57.8 (21.23%) on transportation, USD 39.8 (14.62%) on accommodation, and less than 10% on admission fees (USD 25.7), shopping (USD 24.5), other expenses (USD 29.8), retail outlets (USD 19.3), entertainment (USD 12.7), and camping fees (USD 18.4).

Table 4 lists the indicators of Dragon Palace National Park respondents in different micro areas of experience: hedonism, novelty, local culture, refreshment, meaningfulness, involvement, knowledge, entrance, retail, shopping, dining, accommodation, and transportation. A 5-point Likert scale was used to collect the data, which helped identify the experience-based micro areas of the respondents and implement improvements. As seen, the experience score was approximately four points. The perception scores of the hedonism and refreshment variables were relatively high, while those of retail, shopping, dining, and accommodation were lower than 3.8.

As shown in Table 5, the Dragon Palace National Park respondents reported a satisfaction level of 3.9660 based on the 5-point Likert scale. Therefore, the respondents were almost satisfied with their Dragon Palace National Park trip. Meanwhile, the revisit intention and intention to recommend were 3.7443 and 3.877, respectively, implying visitors tended to recommend and revisit.

4.2. Measurement model

Table 6 illustrates the improved measurement model developed based on confirmatory factor analysis (CFA). Factor loadings, composite reliability(CR), and average variance extracted (AVE) were used to test the measurement model's reliability and validity based on the CFA result. As shown in Table 6, the factor loadings of all the items exceeded the recommended value of 0.7. The CR value, which illustrates how indicators explain latent variables, exceeded the required value of 0.7. Furthermore, the required value of the AVE, which describes the overall variance in the indicators and accounts for the latent constructs, exceeded 0.5 (Wong, 2013). In this table, SAT 3,4 represents the third and fourth items of satisfaction, RI1,2,3 represents the three items of revisit intention, and IR2 represents the second item of intention to recommend.

Meanwhile, in the improved measurement model, the heterotrait-monotrait (HTMT) ratio used to determine the discriminant validity is less than 0.9, as shown in Table 7. Therefore, discriminant validity has been established among the four reflective constructs (Kusumah et al., 2022). In this sense, the measurement model is acceptable.

4.3. Structural model

Once the measurement model has been examined, the structural model should be analysed to test the correlation of the latent variables. Bootstrapping was carried out to test the hypotheses' significance level of the path coefficient. In this sense, Fig. 3 presents the improved structural model evaluation.

As shown in Fig. 3, the corrected R^2 in the blue cycle is the explanatory power of the predictor variable (s) on the respective construct. Respondent experiences can predict 59.4% of respondent satisfaction levels ($R^2 = 0.594$), which, in turn, can predict 62% of respondent revisit intention ($R^2 = 0.62$) and 70.4% of their intentions to recommend ($R^2 = 0.704$). The four constructs, experience, satisfaction, intentions to recommend, and intentions to revisit, could predict 14.5% of

Table 3
Average expenditure of respondents from Dragon Palace national park (n = 412).

Micro Areas of Expenditure	Mean (USD)	Percentage
Transportation	57.8	21.23%
food & beverage	44.4	16.30%
Accommodation	39.8	14.62%
Other expenses	29.8	10.96%
Admission fees	25.7	9.43%
Shopping	24.5	8.98%
Retail outlets	19.3	7.08%
Camping fees	18.4	6.74%
Entertainment	12.7	4.67%
Total	272.4	100%

Table 4
Experience-based micro areas of respondents from Dragon Palace national park (n = 412).

Variable	Mean	SD
Hedonism	3.8762	0.76961
Novelty	3.8155	0.79763
Local Culture	3.8608	0.67956
Refreshment	3.9320	0.65642
Meaningfulness	3.8835	0.69868
Involvement	3.8544	0.73777
Knowledge	3.8511	0.76236
Entrance	3.8447	0.68181
Retail	3.7994	0.71645
Shopping	3.7152	0.75190
Dining	3.7379	0.70647
Accommodation	3.6343	0.69059
Transportation	3.8544	0.66369

Table 5
Satisfaction, revisit intention, intention to recommend of respondents from Dragon Palace national park (n = 412).

Variable	Mean	SD
Satisfaction	3.9660	0.69237
Revisit intention	3.7443	0.82696
Intention to recommend	3.8770	0.71593

Table 6
The reliability and validity of the improved measurement model.

Variable	Item	Loading	CR	AVE
Expenditure	Total Spending	1		
Experiences	Accommodation	0.735	0.970	0.709
	Dining	0.868		
	Entrance	0.898		
	Hedonism	0.740		
	Involvement	0.889		
	Local Culture	0.834		
	Meaningfulness	0.888		
	Novelty	0.744		
	Refreshment	0.892		
	Retail	0.888		
	Transportation	0.810		
	Knowledgement	0.907		
	Shopping	0.827		
Satisfaction	SAT3	0.977	0.953	0.955
	SAT 4	0.978		
Revisit intention	RI1	0.954	0.945	0.894
	RI2	0.945		
	RI3	0.937		
Intentions to Recommend	IR2	1		

Table 7
Discriminant Validity of the improved measurement model.

	1	2	3	4	5
Expenditure					
Experience	0.087				
Intention to recommend	0.054	0.821			
Revisit intention	0.012	0.786	0.889		
Satisfaction	0.064	0.791	0.884	0.807	

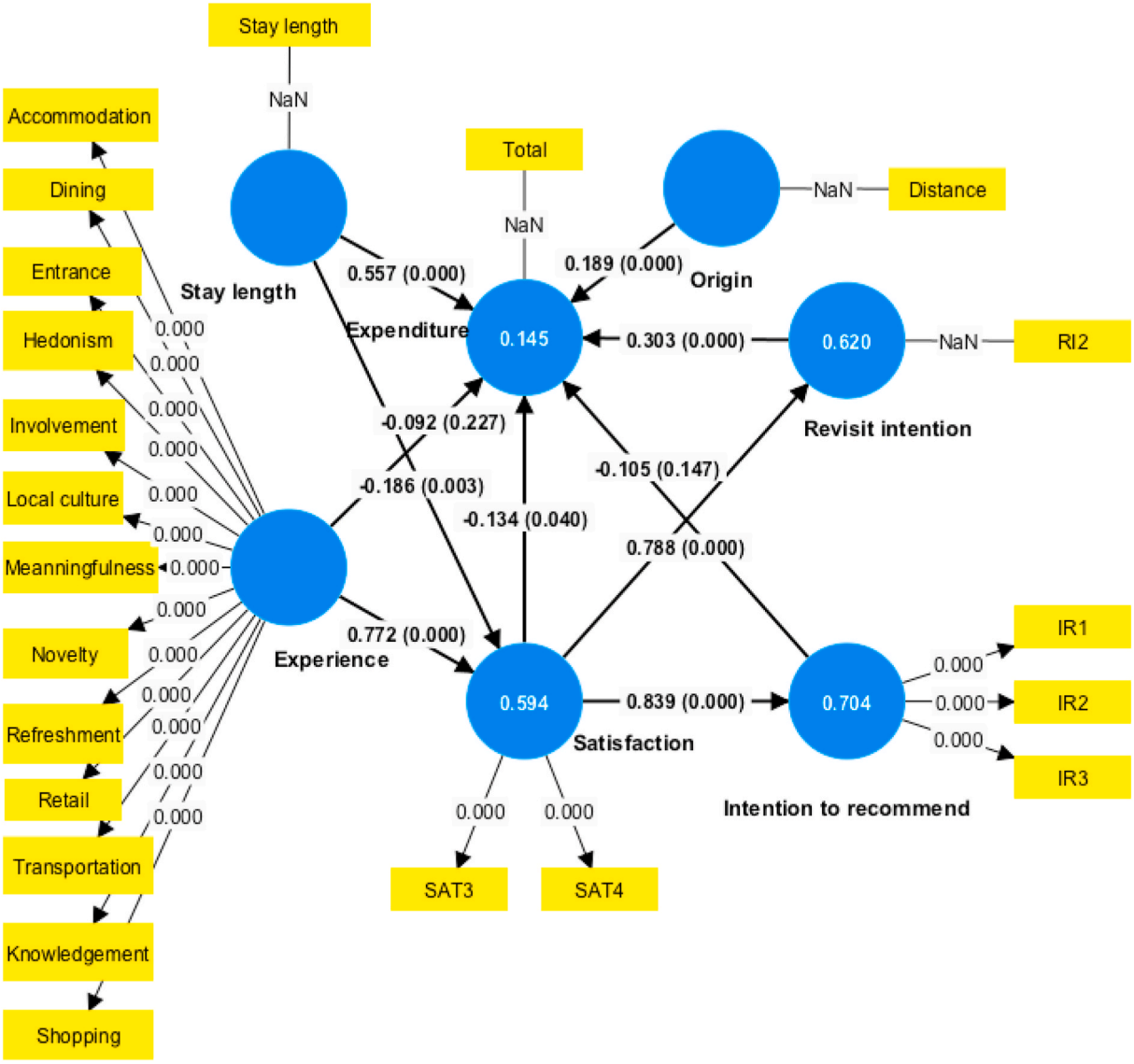

Fig. 3. Improved structural model of respondents' behaviour patterns.

respondents' expenditure ($R^2 = 0.145$) under the effect of control variables (stay length and origin). Meanwhile, Fig. 3 reveals the causal relationships between constructs, shown in the arrows and the numbers on the arrows (the path coefficient and p-value). There is a negative relationship between experience and expenditure; the relationship between satisfaction and expenditure is also inverse; both relationships are weak since the path coefficient is less than the 0.20 cut-off (Hair et al., 2021). Similarly, the path coefficient between expenditure and intention to recommend is negative and weak, while the relationship between revisit intention is positive.

Table 8 reveals the conclusion drawn from estimating the hypotheses based on the structural estimates performed by PLS-SEM 4.0 for the hypothesis test.

Table 8
Structural estimates.

Hypothesis	T statistic	P value	conclusion
H1 Satisfaction - > Expenditure	2.051	**0.040**	Support
H2 Experiences - > Expenditure	1.209	0.227	Reject
H3 Intentions to Recommend - > Expenditure	1.449	0.147	Reject
H4 Revisit Intention- > Expenditure	4.648	**<0.001**	Support
H5 Experiences - > Satisfaction	37.783	**<0.001**	Support
H6 satisfaction - > Intentions to Recommend	33.544	**<0.001**	Support
H7 Satisfaction - > Revisit intention	27.462	**<0.001**	Support

As shown in Table 8, the results of the t-statistics and P values of the structural model verify relationships between the latent variables using a two-tailed bootstrapping with 5000 samples at a significance level of 5%. As the t-statistics exceed 1.96 (Wong, 2013), experience strongly impacts Satisfaction ($P < 0.05$), which, in turn, strongly impacts the intention to recommend ($P < 0.05$) and intention to revisit ($P < 0.05$). Experience and intention to recommend are not determinants of visitor expenditure ($P > 0.05$), but satisfaction and revisit intention are ($p < 0.05$). More specifically, the relation between expenditure and revisit intention is positive, while the relation between satisfaction and expenditure is negative.

5. Discussion

In our expected understanding, visitors with higher satisfaction levels would spend more on the destination (D'Urso et al. (2020). However, the relationship between expenditure and satisfaction in the previous literature is controversial, and the debate is ongoing. Furthermore, the existing literature has solely discussed expenditure and behaviour intentions, but minimal literature has identified the

relationship between both. The memorable experience is universally acknowledged to determine satisfaction. Nevertheless, the memorable experience model (Kim et al., 2012) only includes the emotional dimension and ignores the rational dimensions, which cannot overwhelmingly reveal the experience level of national park visitors. Besides, the interplay of experience, satisfaction, and behaviour intentions is not well established in the context of national parks. This study has answered the research questions, and some findings are unexpected.

As the previous study stated, visitor spending is affected by satisfaction (Mayer & Vogt, 2016). This study finds a negative relationship between expenditure and satisfaction. It implies that in the context of the Dragon Palace National Park, enhancing the level of satisfaction cannot increase the expenditure of national park visitors; to some extent, raising the satisfaction level decreases the expenditure level. This contradicts most previous studies (Bernini & Galli, 2019; Perez & Juaneda, 2000; Disegna & Osti, 2016). Only a few studies have had the same finding as this current research. Perles-Ribes et al. (2020) reported ambiguous and negative correlations between visitor satisfaction and expenditure. Since the path coefficient of expenditure and satisfaction in this present study is −0.134, less than 0.2, there is a weak and negative correlation between the satisfaction levels and expenditure of national park visitors. National park visitors with higher satisfaction inversely spent less, possibly because of the length of stay of visitors. The path coefficient of stay length to expenditure is −0.186 ($p = 0.003$) (Fig. 3). Still, the path coefficient of stay length to satisfaction is 0.557 ($p < 0.001$) (Fig. 3), indicating overnight visitors spent more but were less satisfied than day-trippers. The model's R^2 of expenditure is 0.145, indicating that satisfaction, experience, revisit intention, and intention to recommend can explain 14.5% of expenditure variances under the effect of two control variables (origin and stay length). Hence, behaviour pattern variables are not the main determinants of expenditure (Perles-Ribes et al., 2020).

As for the dimension of experience, the results obtained by this current study indicate that in the case of Dragon Palace National Park, the viewpoint that some rational experience elements, such as B&B experiences (Oh et al., 2007), retail experiences, and dining experiences (Kruger et al., 2015), are vital when measuring experiences and can be generalised. This study extends the MTE model dimensions that Kim et al. (2012) developed. The extended MTE model combines rational and emotional elements to determine experience and satisfaction, and it has been tested as effective.

Concerning the relationship between visitor expenditure and behaviour intentions, this study finds no relationship between expenditure and intention to recommend. It differs from Chulaphan and Barahona's previous study (2021). On the other hand, the current study confirms a positive relationship between visitor spending and revisit intention; the relationship between the two constructs varies depending on the context.

The findings of this study endorse that experience positively affects satisfaction, which in turn predicts behaviour intentions; it is consistent with the previous study (Jung et al., 2015). The interplay of experience, satisfaction, and behavioural intentions is well established in other contexts, and the relationships have been verified by multiple studies on the satisfaction of a destination (Kastenholz et al., 2018; Lončarić et al., 2021; Veasna et al., 2013; Yuan et al., 2021), tourist revisit intentions (Chan et al., 2022; Dean & Suhartanto, 2019; Zhang et al., 2018), and tourist intentions to recommend (Coudounaris & Sthapit, 2017; Isa et al., 2020; Zenker et al., 2017). The correlations between experience and satisfaction (Gohary et al., 2020) and between satisfaction and behaviour intentions (Job et al., 2017) are positive. This present study similarly confirms that experience positively affects satisfaction, and satisfaction affects people's intentions to recommend and revisit, implying that the correlations are not controversial in the context of national parks.

6. Conclusion

National parks play an essential role in biodiversity and ecological integrity preservation; they are a vital component of the tourism industry, a driver facilitating regional economic development, and beneficial to adding income and improving the quality of life of surrounding communities. Thus, understanding visitor expenditure for national parks becomes a critical topic. Tourism literature commonly asserts that visitor satisfaction significantly influences visitor expenditure at the destination. The level of satisfaction is a factor that boosts the tourism competitiveness of the destination (Zbaraszewski et al., 2022) and the economic impact that the sector has on it (D'Urso et al., 2020). Meanwhile, the relationship between expenditure, experience, revisit intention, and intention to recommend must be clarified. Examining expenditure relationships with behaviour patterns requires special attention to the case-specific conditions relevant to national parks, which is critical for sustainable development.

This study addresses the research gaps in the ongoing debate on the relationship of expenditure with satisfaction and the uncharted connection of expenditure with experience and behaviour intentions in the case of Dragon Palace National Park, a well-known national park in Guizhou, China.

Concerning the theoretical implications, firstly, this study confirms the relationship of expenditure with satisfaction and revisit intention, enriching the existing literature on this domain; secondly, this present study creates a new model to measure the visitor experience based on the MTE model (Kim et al., 2012). It includes seven dimensions of memorable visitor experiences and six dimensions of rational experience. The empirical examination verified the reliability and validity of the measurement model, which can be generalised to other national parks.

As for the practical implications, it is notable that stay length affects the satisfaction level of visitors (Fig. 3). The satisfaction level of overnight visitors is less than that of one-day visitors. Hence, the Dragon Palace National Park manager should pay more attention to overnight visitors, exploring which experience element weakens the satisfaction of overnight visitors. Meanwhile, it is vital to enhance the consuming willingness of visitors, improving the expenditure of visitors with high satisfaction levels. The Dragon Palace National Park can consider customising the experience, improving the cost performance of various goods and services, and enriching the experience content.

Although the findings of this study have provided directions for national park development based on visitor behaviour patterns, it has limitations. Firstly, as the finding of this study is unanticipated, the reason behind the inverse relationship between expenditure and satisfaction can not be deeply explored due to methodological limitations. Qualitative research is required to provide evidence to explain the uncommon relationship between expenditure and satisfaction. Hence, the in-depth interview can be applied in future studies. Secondly, even though this study was conducted after the height of the COVID-19 pandemic, it still affected the number of national park visitors, the provinces that they were from, and their spending patterns as international, inter-province, and even intercity travel restrictions were still in place in China in 2022 (Fan et al., 2023). In any case, the work carried out represents an advance in the existing literature on the subject.

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CRediT authorship contribution statement

Zeli Hu: Writing – review & editing, Writing – original draft. **Jeetesh Kumar:** Writing – review & editing, Supervision. **Suresh Kannan:** Supervision. **Qu Qin:** Funding acquisition.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jort.2024.100803.

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