

## Article

# An Impact Evaluation of the Application of Sharing Products in Tourism Services

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**Abstract:** This study is a discussion on the feasibility of, application, and promotion of sharing products in tourism services. The promotion and application of the current sharing concept are mostly aimed at a wide range of urban populations or urban service systems, while research on applications of the concept that target tourism services are few. This study hopes to demonstrate that, with the introduction of the sharing concept into the tourism industry, tourism services will benefit from sharing tourism products. Adopting the TAM model, the study surveyed tourists in the form of a questionnaire and obtained its data from 410 participants. The research investigated tourists' attitudes towards sharing tourism products and the impact of sharing products in tourism services. In the SEM model test and analysis, we found that: (1) sharing tourism products is acceptable to tourists; (2) sharing tourism products brings tourists good travel experiences and improves the quality of tourism services in scenic spots; and (3) tourists can have their special needs and concerns met by sharing tourism products. These prove that tourist sharing products are a scientific and effective way for the tourism industry to improve the travel experience of tourists and to optimize the tourism service industry, and that the sharing concept is in agreement with the climate of current economic development and the diversified needs of consumers. This research focuses on the promotion of the sharing concept in seaside tourism services. In future research, we can also try to improve the user experience, assist service management, and build a healthy economic ecological model with the application of the sharing concept in different service models and business venues.

**Keywords:** sharing; tourist sharing products; tourism services; tourists' demands



**Citation:** Ye, J.; Yang, L.; Yun, R. An Impact Evaluation of the Application of Sharing Products in Tourism Services. *Sustainability* **2022**, *14*, 7748. <https://doi.org/10.3390/su14137748>

Academic Editor: Colin Michael Hall

Received: 6 May 2022

Accepted: 23 June 2022

Published: 24 June 2022

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## 1. Introduction

In today's large and medium-sized cities in China, sharing products have grown into an ecosystem of certain maturity in the basic services of urban life [1]. They provide a service of convenience to the demands of urbanites in their daily work and life. Today, sharing products continue to expand their coverage in types and services with the help of users' using behavior, becoming an important part of the urban service system [2]. The current sharing products are mostly aimed at general urban service systems, while little thinking is given to products targeted at urban service systems with special attributes or for special groups of populations [3]. This paper intends to achieve a specialized application of products with sharing thinking, changing them from catering to a wide range of urban populations and facilitating general urban services, to targeting the specific needs of targeted groups by providing niche and customized services.

Haikou, the capital city of Hainan Island, China, which has clear tourism attributes, is chosen as an example in the paper; this paper hopes to demonstrate the feasibility of introducing tourism products into the seashore tourism industry in the form of sharing products so as to improve tourism services for tourists as well as for their positive impact on the tourist experience and tourism services.

Nowadays, academia is also watching the rapid development of sharing products and holds a rather positive attitude towards its prospects. In related research, it is believed that the benefits of sharing products are widely relevant, so this model can be widely promoted in future urban development [4]. Focusing on the intensive and environmentally friendly characteristics of shared products, it is a sustainable development strategy that is conducive to the coordination of the economy and environment [5]. Derived from traditional products, the sharing product service system can provide a more comprehensive service experience while serving their original functions. Some scholars believe that the scientific management and systematic maintenance of sharing products creates a healthy ecosystem that can adjust and optimize the industrial structure to achieve sustainable development of the market [6]. It has been confirmed that shared products have great potential for development in the future, with their industrial patterns adjusted in line with development, and service types increasingly refined [7]. The life of shared products consists of four parts—production, distribution, exchange, and consumption—and the cycle is repeated continuously, forming a value co-creation system in the sharing economy, which can promote sharing products to quickly replace traditional products in various channels and scenarios [8].

With the impact of industrial transformation and consumption upgrading in recent years, tourism services have also become the focus of many scholars [9]. The introduction of new technologies in the service industry can bring a win—win situation to both businesses and users and may achieve quantitative promotion in the service industry, forming a technological trend [10]. Some scholars believe that the seaside environment is the driving force of seaside tourism behavior; providing a service that can translate attraction into a satisfying tourist experience follows the sustainable way of development [11]. The current user demand in seaside tourism is presenting a diversified trend of development [12]. The current consumption choices in seaside tourism cannot fully satisfy the needs of tourists, and a comprehensive and rich tourism experience can be provided from the perspectives of recreational events, local food, and seaside culture [13].

Some scholars have noticed and approved the advantageous properties of sharing products, their development prospects, and the experience-oriented, diversified, and specialized trend of development of tourism services. With the existing research, taking sharing products as a means with which the goal to improve tourism services is achieved, we make a possible conjecture that to exploit the advantages of the sharing products deployed in scenic spots for tourists, i.e., a targeted application of sharing products in travel services, can be an effective way to improve tourism services.

Based on the above analysis, this paper proposes the idea that tourism services can be optimized to improve travel experience for tourists through the use of tourist sharing products during their seaside tourism behavior [13]. Data analysis is expected to demonstrate: (1) the degree of acceptance of sharing products for tourism by tourists; (2) the relevance between sharing products and tourism service systems; and (3) the sharing products that tourists have high demand for, and why. After analysis of the results from these three aspects, this paper demonstrates the feasibility of promoting and applying sharing products in tourism services and provides reference data for research on their directional development and popularization [14]. The purpose of this article is to probe the directional application of sharing products in the tourism services of coastal cities, to prove the method and potential of the directional application of the sharing concept in meeting the needs of target groups, and to provide reference for the directed development and promotion of sharing products [15].

## 2. Literature Review

### 2.1. Related Theories

#### 2.1.1. Tourism Service

The tourism service is an activity of operation realized through management of various forms of facilities, equipment, methods, means, approaches, and service personnel, which, in the process of meeting their physical and psychological needs, creates a harmonious

atmosphere that generates a spiritual and psychological effect on tourists, arousing psychological resonance in them, so as to make them feel comfortable and happy in the process of receiving services, who are then more inclined to communicate and consume [16].

Some scholars believe that tourism services should be diversified, personalized, and specialized so that, on the basis of the existing conditions of the scenic spots, tourists may receive a richer tourism experience by selecting different consumption choices; the relevant tourism products could be a feasible way to achieve this [17]. However, some scholars believe that excessive product consumption in scenic spots will bring additional burdens, such as environmental pollution, facility damage, security management, etc. [18].

Based on the viewpoints in the previous research, this paper tries to apply the sharing model, in the form of tourist sharing products, to alleviate the negative effects caused by the promotion of product consumption in tourist attractions and help to further optimize the tourism service system [19].

### 2.1.2. The Concept of Sharing

The increasingly perfect service economy and experience economy system prompts various industries to explore new business models to adapt to them. The concept of sharing relies on the service quality to optimize the user experience and has become an effective approach for their transformation and development [20]. The concept of sharing is a brand-new business concept with service as its core. It has changed the concept of profit and the standard of value in traditional industries by breaking the restrictions of physical trade and defining value from the perspective of service, selling the right to use resources instead of the ownership of resources, and based on the current business model of sharing and leasing [21]. The concept of sharing has been tried and applied in more and more industries as it can effectively improve the service quality and optimize the user experience [22].

Scholars generally believe that the concept of sharing can be widely used in various industries, and it is an intensive and efficient approach of operation that fits the times [23]. In the research of some scholars, it was pointed out that the concept of sharing can effectively improve business operation and management to optimize services [24]. Other scholars believe that the application of the concept of sharing can create a “connected network” as a form of user communication mechanism, which is conducive to the in-depth acquisition of user data, analysis of user demands, and realization of targeted service optimization, to lead a healthy trend of development [25].

So far, the academic community has reached a consensus on the advantages of the sharing concept in commercial applications. Therefore, applying the sharing concept in tourism services will provide channels for innovation in and development of tourists’ tourism experience, tourism service quality, tourism industry management, etc.

### 2.1.3. Sharing Products

Shared products are put on the market in physical form based on the concept of sharing [26]. Shared products are accepted by most users for their new access method that charges by time and is growing popular rapidly in large and medium-sized cities in China with advantages in user services and user experience [27]. Common sharing products in the current Chinese market are car sharing, bike sharing, power sharing banks, umbrella sharing, and the sharing of other daily travel tools and necessities, etc. In the review article “What are the Characteristics of Shared Products” on “Great Wall”, it is pointed out that sharing products have three main characteristics, namely: rigid demand, high frequency, and sore spot. There should be an objective demand of the necessity, inevitability, and irreplaceability of shared products, and such demand is not accidental, but occurs frequently [28]. At the same time, some scholars have shown that there are many inconveniences in the acquisition, use, and maintenance of traditional products. The use of shared products can effectively remove these problems and consumers’ concerns. This is the reason why sharing products can be widely accepted by users [29].

The relationship between the existing service value system and targeted customer of sharing products is similar to that between the existing tourism service system and tourists. It is logically possible to integrate sharing products into tourism behaviors by virtue of the consumer demand of tourists.

#### 2.1.4. Sharing Products for Tourism

Sharing products refers to the existing conventional products integrated in the form of sharing products that cater to tourists' product use and consumption demands in tourist attractions and are put on the market for tourists to use in order to provide better tourism services [30]. The introduction of modern science and technologies into the service industry will have a positive impact on the original service system [31]. Tourist sharing products, as the carrier of the sharing concept promoted in the tourism services, build a new service and consumption mechanism through their promotion, and change the original consumption habits of tourists; they also improve the tourist experience and the quality of tourism services for tourists with the systematic management of the tourism service that provides high returns at a low price [32].

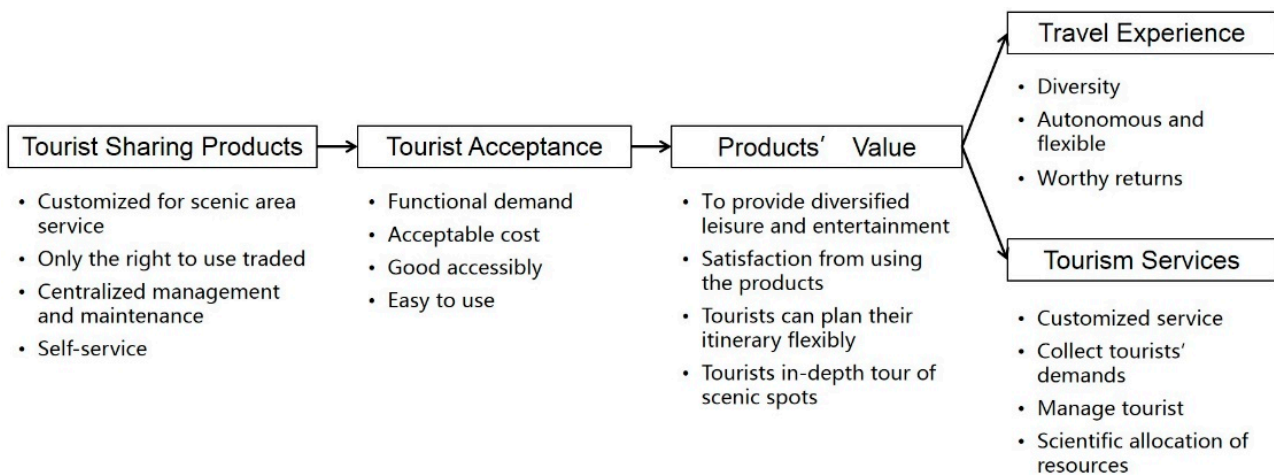
In this paper, seashore tourism in Haikou City, Hainan, is selected as a case for in-depth study. To the tourist sharing products herein refer to the consumer goods regularly produced in seaside tourism. A total of 20 representative products were selected as feasibility test samples, which are mainly divided into two categories—daily necessities and recreational products—and will be analyzed from the perspective of tourists in later questionnaires [33].

#### 2.2. Perspective of the Research

The tourism industry is now searching for a more wide-range and efficient development approach, and the innovation of tourism services is becoming a topic of concern for the tourism services and related scholars. To rebuild the communication channels between participants, join new intelligent technologies, etc., such discussions and attempts making use of multidisciplinary knowledge are constantly unfolding. For example, the use of information intelligence technology seeks breakthroughs in providing better service by establishing a good cross-industry communication mechanism for all participants [34]. Translating academic knowledge into the service industry will help create products and services, thereby promoting the development of the tourism industry [35].

In tourism services, tourists' perceptual experience of the travel process will have a significant impact on their overall evaluation of the trip [36]. It will be an effective way to improve the quality of tourism services to seek new ways to improve the tourist experience of tourists by focusing on tourists' perceptual system. Some scholars create experiences for tourists based on their perceptual cognition of their destinations [37]. Others propose to develop smart tourism from the perspective of integrated, intelligent, and immersed service to improve travel experience [38].

By introducing the sharing concept into tourism peripheral products as a start, this research intends to explore directions of innovations that are based on improving tourism experience and optimizing tourism services, to let tourists have a more comprehensive travel experience in the contact and use of tourist sharing products. From the perspective of the tourism industry, proposing a point-to-point service based on the needs of the user can effectively regulate tourism resources scientifically and ultimately transfer and distribute resources through shared tourism products. Figure 1 shows the logic that tourists accept the product, discover the value of the product, and use the product to improve their travel experience, which also promotes the development of the scenic spot service. This is the underlying research framework of this paper.



**Figure 1.** Logic of the research.

### 2.3. Research Model

The TAM model used in this study was built on the basis of the theory of reasoned action (TRA) in 1989 and used to study users' adoption and acceptance of new information technologies and information systems [39]. Based on the basic model, this study adjusted and built a model for the research of tourist sharing products.

The TAM model is a method of usually used to analyze and research the impact of attitudes of users on the surroundings. This model is often used for simulated measurement of the expected impact: for example, in research on the elderly and smart health devices from the perspective of products, this model is used to assess the acceptance of these products and their related impacts [40]; in research on travel consumption, the model is used to analyze consumption patterns [41]; and it is also used in research on user acceptance of new technology such as online streaming and users' demands [42], and research on users' attitudes towards and experiences of social mobile applications [43]. That the model can scientifically measure users' acceptance of and willingness to use sharing products and the possibility for linear analysis of related factors fits to the aim of this research. Therefore, this paper connects the external variables of tourists' perception of tourist sharing products, such as the perceived usefulness, ease of use, and perceived enjoyment, and users' willingness to use, and simulates the impact of the willingness to use on their expectations.

### 2.4. Research Hypothesis

Tourist sharing products are products that scenic spot managers plan to deploy in scenic areas, so they should have the advantages of sharing concept and sharing products and will make corresponding impact on scenic spot services. According to this supposition, we propose the result hypothesis from the following perspectives.

#### 2.4.1. Tourists' Perceived Usefulness

The perceived usefulness of a product is a prerequisite for a product to be accepted by users. Only when users have a need for the functions provided by the product will they accept the product and have an intention to use it [44]. The products are only valuable when they are needed [45]. The usefulness of products is the main reason why sharing products can be accepted by the majority of users [46]. Therefore, this paper proposes the hypothesis:

**H1.** *Perceived usefulness has a positive effect on intention to use.*

#### 2.4.2. Tourists' Perceived Ease of Use

The ease of use of a product can directly affect the user's product experience. Excellent product experience can directly affect the user's view of the product, and their view and word-of-mouth will have an impact on other user's willingness to use [47]. An excellent product acceptable to users should focus on their ease of use, for a simple and easy-to-use product will create a good experience for users [48]. Sharing products are accepted by a wide range of users because of their excellent ease of use [49]. Therefore, this paper proposes the hypothesis:

**H2.** *Perceived ease of use has a positive effect on intention to use.*

#### 2.4.3. Tourists' Perceived Enjoyment

Enjoyment is the attribute that distinguishes tourist sharing products from other conventional sharing products. During tourism behavior, tourists hope to increase entertainment by consuming tourism peripheral products [50]. The design of tourism peripheral products should be in line with how tourist attractions provide entertainment, so as to provide more approaches to entertain tourists with the products [51]. Excellent tourism products not only need to build the connection between tourists and the environment but also contribute to the communication and interaction between tourists to give tourists a memorable trip [52]. Diversified entertainment and communication are tourists' demands for products, and these demands have an impact on tourists' willingness to purchase products. Therefore, this paper proposes the hypothesis:

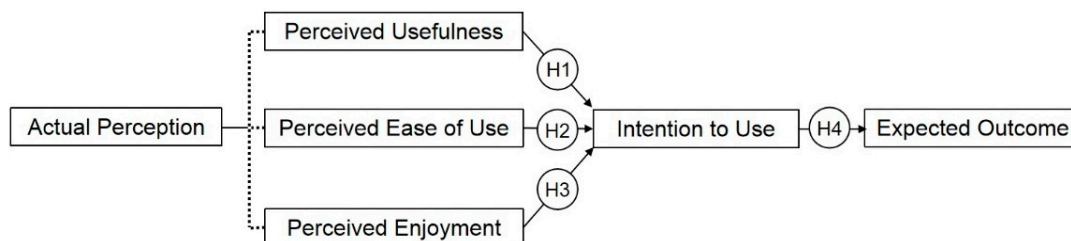
**H3.** *Perceived enjoyment has a positive effect on intention to use.*

#### 2.4.4. Tourists' Willingness to Use and Tourism Service

There is a relationship between tourists' willingness to use tourist sharing products and tourism services in scenic spots. In the research on Hainan Province of China, there is a positive correlation between the amount of consumption by tourists in scenic spots and the services of scenic spots: normally the existence of consumption in scenic spots indicates the existence of corresponding services, and tourists' willingness to make various consumptions is the recognition of scenic services [53]. On the other hand, the profit of the scenic spot from the consumption of tourists can help the scenic spot to invest into the improvement of its services. There is a relationship between the consumption behavior of tourists and their emotional experience during travel: when they trust the scenic spot, the consumption behavior will occur, and one of the important factors to build trust is the service provided in the scenic spot [54]. Therefore, this paper proposes the hypothesis:

**H4.** *Intention to use has a positive impact on the expected outcome of tourism services.*

The models used in the research is shown in Figure 2.



**Figure 2.** Models in the research.

### 3. Methodology

#### 3.1. Research Objective

This study aims to demonstrate that shared tourism products can improve the tourism experience for tourists, and that the acceptance of shared products in tourism behavior

can be a way to improve the quality of tourism services. Shared products are now widely used in urban service systems, and their advantages are recognized by many urban service industries, which means that they can also be used in different areas to address the needs of specific consumer groups [55]. This research is an attempt at study in the tourism industry.

### 3.2. Research Methodology

This study was conducted as a survey by means of a questionnaire. This method can directly collect opinions and data from the interviewed population and is convenient to conduct objective scientific analysis to obtain results providing that a good return rate, efficiency, and quality of answers are ensured. It is widely used in research on tourists' feelings, emotions, and acceptance in the field of tourism service. This method that relying on smart services can improve tourists' sense of happiness during trips [56]. Similarly, there is a guiding relationship between tourists' emotional intelligence and travel intention [57]. Based on the experience of related research, this research focuses on tourists' perception and willingness, with this method being used to help obtain accurate data from tourists' questionnaire.

### 3.3. Questionnaire Structure

The questionnaire consists of 30 questions in total. The questionnaire consists of three parts: the first part is the basic demographic information of the respondents. The second part investigates tourists' "actual perception", "intention to use" of tourist sharing products and "expected impact" of the promotion of sharing products. The actual perception includes three aspects: "perceived usefulness", "perceived ease of use", and "perceived enjoyment". In this part, 17 evaluation factors are sorted out, and a five-scale Likert scale is used, which includes "strongly disagree", "somewhat disagree", "not sure", "very agree" and "strongly agree", and 1 to 5 points are assigned to them, respectively. The third part investigates tourists' choice of tourism sharing products and the concerns they have when making the choice, which is presented in multiple-choice form.

The evaluation of indicators in the second part of this questionnaire was compiled and summarized by the authors based on the research results presented by the existing research data (Table 1). The four items related to tourists' actual perceived usefulness of shared tourism products and the four items related to subsequent intention to use of products have been made reference to Zou Ling's research on the continuous intention to use and behavior of bike sharing [58]. A total of three items related to perceived ease of use is based on the service convenience model created by Berry in his research [59]. The three indicators on perceived entertainment come up with reference to research by Tang Daijian and Lyu Lulu on the attributes of traveling products of activities [60]. The expected outcome includes three items, which are extracted and summarized from spatial layout scheme construction for space system design and future urban technology by Xu Yuqing, Wu Fan, and Wang Yixuan [61].

**Table 1.** Definition of evaluation indicators.

Variables	Definition	Bibliography	
Personal Perception	Perceived Usefulness	To evaluate the usefulness of tourist sharing products from the four observation indicators, diversity, convenience, labor-saving, and price.	Zou L. (2020) [58]
	Perceived Ease of Use	The ease of use of shared tourism products can be reflected in three dimensions: accessibility convenience, transaction convenience, and benefit convenience.	Berry L.L., Seiders K., Grewal D. (2002) [59]
	Perceived Enjoyment	When tourists choose sharing tourism products based on scenarios, they will enjoy the entertainment experience using product from three perspectives: theme, timing, and activity maintenance.	Tang D.J., Lv L.L. (2020) [60]

**Table 1.** *Cont.*

Variables	Definition	Bibliography
Intention to Use	Tourists' intention to use tourist sharing products will be seen from their use experience(satisfaction). Important evaluation criteria include the user's product using experience, choice, attractiveness, and intention to continue using the product.	Zou L. (2020) [58]
Expected Outcome	To provide solutions to the problems of space configuration and service in current tourism services, and to improve tourism services by means of tourist sharing products, application of people-oriented technology and space technology.	Xu Y.Q., Wu F., Wang Y.X. (2022) [61]

### 3.4. Validity

This study selected two seaside tourist attractions, Xixiu Beach and Baishamen Beach, in Haikou City, Hainan Province. Before the official launch of this questionnaire, the authors distributed 50 preliminary questionnaires in advance on 10 January 2022, and finally obtained 46 valid questionnaires. In this study, Cronbach's alpha was used as the measure to test the consistency and stability of the questionnaire items. In general research, the reliability  $\alpha$  coefficient of the evaluation scale should be at least 0.7 to be acceptable [62]. After testing, the alpha coefficients of "actual perception", "intention to use", and "expected impact" are 0.856, 0.798, and 0.819, respectively, indicating that the designed questionnaire is acceptable and further formal investigation may proceed.

### 3.5. Data Collection

A total of 450 copies of questionnaire were distributed simultaneously at two seaside tourist attractions, Xixiu Beach and Baishamen, Haikou City, Hainan Province, on 15 January 2022. After recovery and screening, 410 valid questionnaires were collected, with an effective rate of 91.11%, which meets the quantity requirement required for the analysis. The demographic characteristics of the samples are shown in Table 2.

**Table 2.** Demographic characteristics of the sample.

Item	Options	Frequency	Percentage %
Sex	Male	211	51.5
	Female	199	48.5
Age	Age 20 and below	7	1.7
	21–30	125	30.5
	31–40	204	49.8
	41–50	57	13.9
	51–60	16	3.9
	61 and above	1	0.2
Education	Junior high school and below	4	1
	high school	20	4.9
	college	216	52.7
	Undergraduate	130	31.7
	Postgraduate	40	9.8
Marital Status	Married	352	85.9
	Single	58	14.1



Table 2. Cont.

Item	Options	Frequency	Percentage %
Profession	school students	24	5.9
	personnel in cultural, education, or technical professions	69	16.8
	government public servants	57	13.9
	enterprise administrators	43	10.5
	private business owner or freelancers	85	20.7
	ordinary staffers or workers	91	22.2
	retirees	1	0.2
	others	40	9.8
Monthly Income	RMB 3000 and below	56	13.7
	RMB 3001–6000	226	55.1
	RMB 6001–9000	109	26.6
	RMB 9001–12,000	16	3.9
	RMB 12,001 and above	3	0.7
Traveler Status	local residents	117	28.5
	Tourists	293	71.5
Number of fellow travelers	0–2	237	57.8
	3–5	170	41.5
	6–10	3	0.7
Relationship with fellow travelers	Alone	4	1
	Family and Relatives	169	41.2
	Friends and Classmates	162	39.5
	Colleague	55	13.4
	With tour group	1	0.2
Others	19	4.6	
Number of visits	First time	180	43.9
	Second time	155	37.8
	Third time and above	75	18.3
Sharing product experience	never use	3	0.7
	occasional use	83	20.2
	uncertain	79	19.3
	frequently used	121	29.5
	use every time	124	30.2

#### 4. Data Analysis

##### 4.1. Descriptive Analysis

The analysis results of tourists' "actual perception", "intention to use", and "expected outcome" of sharing product promotion are shown in Table 3. The average value of the 17 questions is between 3.42 and 3.92.

Table 3. Analysis results of tourists' actual perception, intention to use, and expected outcome.

Item	Mean Value	Standard Deviation	DF
Q1 To help make better travel plans	3.79	1.108	1.229
Q2 To help arrange reasonable travel schedule	3.42	1.164	1.355
Q3 To receive a more in-depth seashore travel experience	3.72	1.121	1.257
Q4 To increase the times of consumption per trip	3.63	1.112	1.236
Q5 easy to apply, receive, and use	3.77	1.086	1.180
Q6 The products are convenient to access and return	3.77	1.089	1.186

Table 3. Cont.

Item	Mean Value	Standard Deviation	DF
Q7 Users can proficiently use the seashore tourism peripheral products	3.72	1.064	1.131
Q8 To experience more modes of recreation and leisure	3.76	1.199	1.437
Q9 To increase fun in travel	3.79	1.192	1.421
Q10 To increase interaction with peers	3.81	1.212	1.470
Q11 To use travel sharing products	3.81	1.164	1.354
Q12 To experience different kinds of travel sharing products	3.84	1.189	1.415
Q13 To try tourist sharing products from other natural scenic spots	3.92	1.142	1.304
Q14 To recommend friends to use	3.85	1.171	1.372
Q15 To improve seaside hygiene environment	3.74	1.214	1.475
Q16 To improve the distribution of coastal tourism resources	3.88	1.188	1.411
Q17 To optimize the planning of seaside recreation areas	3.73	1.185	1.405

#### 4.2. Reliability Analysis

The reliability test of the questionnaire refers to the test of the reliability and credibility of the questionnaire. It mainly reflects the extent of the veracity of the measured data according to the consistency or stability of the results obtained by the test tool. The reliability of the variables was tested by Cronbach's alpha coefficient in this study: the alpha coefficient is very good between 0.80 and 0.90, good between 0.70 and 0.60, and acceptable between 0.61 and 0.65. Cronbach's alpha coefficient is proportional to the reliability of the measured items; that is, the larger the coefficient, the higher the reliability of the measurement content [63]. After the reliability test of the data, the reliability value of each variable in this study is shown in Table 4: the Cronbach's  $\alpha$  coefficients of the five variables are all greater than 0.8, indicating good reliability.

Table 4. Scales and reliability analysis.

Dimension of Measurement	Measurement Question	Cronbach's $\alpha$
Perceived usefulness	To help make better travel plans	TP1 0.844
	To help arrange reasonable travel schedule	TP2 0.803
	To receive a more in-depth seashore travel experience	TP3 0.773
	To increase the times of consumption per trip	TP4 0.818
Perceived ease of use	Easy to apply, receive, and use	TU1 0.788
	The products are convenient to access and return	TU2 0.822
	Users can proficiently use the seashore tourism peripheral products	TU3 0.811
Perceived enjoyment	To experience more forms of recreation and leisure	TE1 0.910
	To increase fun in travel	TE2 0.932
	To increase interaction with peers	TE3 0.879
Intention to Use	To use travel sharing products	PT1 0.937
	To experience different kinds of travel sharing products	PT2 0.942
	To try tourist sharing products from other natural scenic spots	PT3 0.918
	To recommend friends to use	PT4 0.939
Expected Outcome	To improve seaside hygiene environment	ET1 0.922
	To improve the distribution of coastal tourism resources	ET2 0.863
	To optimize the planning of seaside recreation areas	ET3 0.915

#### 4.3. Validity Analysis

Validity refers to the closeness of the subject the researcher is trying to measure to the reality. The higher the validity, the more accurately the subjects can be measured. In this study, we used factor analysis to test the validity of the questionnaire. According to the result of the exploratory factor analysis in Table 5, the coefficient of the KMO test is 0.892; normal ranges from 0 to 1, and the closer to 1, the better the validity of the questionnaire. According to the significance of the spherical test, we can see that the significance of this test is infinitely close to 0. The factor extracted from the factor rotation matrix is consistent with the assumptions of the factor attribution theory of each measurement item, and the

weighted value of each variable exceeds 0.5, indicating that the scale has good construct validity. Therefore, a rough judgment is that the scale has generally good validity.

**Table 5.** Exploratory factor analysis.

	1	2	3	4	5
TP1	0.026	0.764	0.125	0.034	0.067
TP2	0.085	0.816	0.127	0.130	0.094
TP3	0.112	0.877	0.085	0.047	0.064
TP4	0.178	0.783	0.057	0.103	0.132
TU1	0.193	0.063	0.068	0.104	0.873
TU2	0.099	0.127	0.202	0.134	0.828
TU3	0.086	0.146	0.110	0.125	0.854
TE1	0.285	0.142	0.844	0.214	0.157
TE2	0.259	0.181	0.817	0.228	0.195
TE3	0.296	0.146	0.866	0.224	0.119
PT1	0.846	0.111	0.237	0.235	0.146
PT2	0.804	0.153	0.268	0.270	0.157
PT3	0.904	0.129	0.190	0.234	0.108
PT4	0.843	0.114	0.231	0.244	0.119
ET1	0.279	0.151	0.231	0.832	0.125
ET2	0.280	0.092	0.241	0.867	0.171
ET3	0.374	0.107	0.199	0.802	0.167
	KMO				0.892
	approximate chi-square				5811.515
Bartlett's test of sphericity	DF				136
	Significance				0.000

#### 4.4. Building SEM Model

In Baumgartner and Homburg's study, it was demonstrated that SEM is suitable for data analysis only when the sample size exceeds five times the estimated parameters. This model has 17 estimated parameters. This study collected data from 410 valid questionnaires, more than the required sample size. Therefore, the sample data meet the requirements for SEM.

In this study, the structural equation model (SEM) consists of five latent variables and 17 observed variables. Among them, the latent variable TP consists of four observed variables, the latent variable TU consists of three observed variables, the latent variable TE consists of three observed variables, the latent variable PT consists of four observed variables, and the latent variable ET consists of three observed variables.

#### 4.5. Goodness of Fit Index

The variables and assumptions in this study have consulted relatively mature scales and results of research at home and abroad, so this paper needs to carry out confirmatory factor analysis. Calculated with AMOS 24.0, the modified SEM model GIF index is shown in Table 6. The GIF index of the structural equation is RMSEA = 0.056, indicating a good fit, and the estimated values of the other indicators are within the range of the fitting standard, indicating that the model fits well with the sample data, and this model can effectively explain the behavior of tourists.

**Table 6.** SEM GIF indices.

Item	CMIN/DF	NFI	TLI	CFI	RMSEA	GFI	AGFI
Ideal Value	>1, <3	>0.9	>0.9	>0.9	<0.08	>0.8	>0.8
Feasibility	2.27	0.957	0.970	0.975	0.056	0.931	0.906

AMOS 24.0 is used for SEM analysis, the proposed research hypothesis verified, the fit index of the model obtained, and the standardized regression coefficient (path coefficient) and significance of each path calculated, and the estimated parameters of the SEM are shown in Figure 3 below.

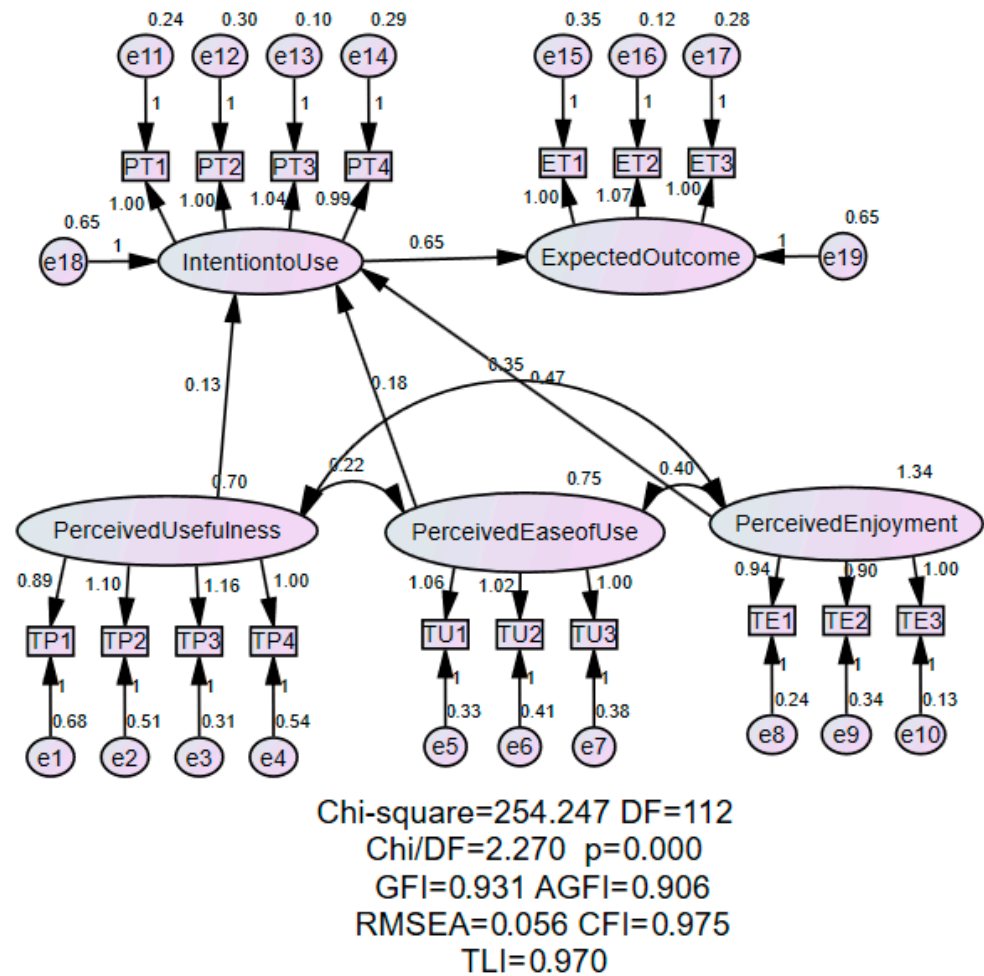


Figure 3. SEM analysis result.

AMOS is used to analyze the significance of the paths (as shown in Table 7). According to the results of the path test, all paths have passed the test, and the path effect is relatively significant.

Table 7. Results of path analysis of structural equation—AMOS model.

			Unstd.	S.E.	C.R.	p	Std.	SMC
TP4	←	Perceived Usefulness	1				0.751	0.564
TP3	←	Perceived Usefulness	1.164	0.07	16.549	***	0.867	0.752
TP2	←	Perceived Usefulness	1.101	0.071	15.456	***	0.790	0.624
TP1	←	Perceived Usefulness	0.889	0.068	13.047	***	0.670	0.449
TU3	←	Perceived Ease of Use	1				0.814	0.663
TU2	←	Perceived Ease of Use	1.016	0.06	17.027	***	0.808	0.653
TU1	←	Perceived Ease of Use	1.063	0.06	17.601	***	0.848	0.719
TE3	←	Perceived Enjoyment	1				0.956	0.914

**Table 7.** *Cont.*

			Unstd.	S.E.	C.R.	<i>p</i>	Std.	SMC
TE2	←	Perceived Enjoyment	0.898	0.031	29.25	***	0.872	0.760
TE1	←	Perceived Enjoyment	0.942	0.029	32.994	***	0.911	0.830
PT1	←	Intention to Use	1				0.906	0.821
PT2	←	Intention to Use	1.004	0.036	28.264	***	0.889	0.790
PT3	←	Intention to Use	1.04	0.03	34.905	***	0.960	0.922
PT4	←	Intention to Use	0.988	0.035	28.25	***	0.889	0.790
ET1	←	Expected Outcome	1				0.874	0.764
ET2	←	Expected Outcome	1.071	0.037	29.033	***	0.957	0.916
ET3	←	Expected Outcome	0.998	0.039	25.877	***	0.894	0.799

\*\*\* means  $p < 0.001$ .

#### 4.6. Hypotheses Testing

With AMOS 24.0, the constructed model is tested against the overall sample. See Table 8 for the path coefficient and  $p$  value; the results are summarized as follows:

**Table 8.** Results of path analysis of structural equation—AMOS 24.0.

			Std.	S.E.	C.R.	<i>p</i>
Intention to Use	←	Perceived Usefulness	0.133	0.06	2.214	0.027
Intention to Use	←	Perceived Ease of Use	0.178	0.059	2.995	0.003
Intention to Use	←	Perceived Enjoyment	0.473	0.045	10.53	***
Expected Outcome	←	Intention to Use	0.654	0.047	14.002	***

Note: \*\*\* means  $p < 0.001$ , and those without \* are not significant.

Through the above analysis, the judgments on the above hypotheses can be made as follows:

It proves that hypothesis H1 holds. The path coefficient value for perceived usefulness on tourists' intention to use is 0.133, and  $p$  value = 0.06, less than 0.05, which means that tourists' perceived usefulness of tourist sharing products has a positive and significant impact on their intention to use.

It proves that hypothesis H2 holds. The path coefficient value for perceived ease of use on tourists' intention to use is 0.133, and  $p$  value = 0.03, less than 0.05, which means that tourists' perceived ease of use of tourist sharing products has a positive and significant impact on their intention to use.

It proves that hypothesis H3 holds. The path coefficient value for perceived enjoyment on tourists' intention to use is 0.473, with a  $p$  value less than 0.001, which means that tourists' perceived enjoyment of tourist sharing products has a positive and significant impact on their intention to use.

It proves that hypothesis H4 holds. The path coefficient value for tourists' intention to use on the expected outcome is 0.654, with a  $p$  value less than 0.001, which means that tourists' intention to use tourist sharing products has a positive and significant impact on the expected outcome of tourism services.

#### 4.7. Choice Behavior Analysis

This paper further studied the types of shared tourism products tourists have demand for: by listing a number of coded products for tourists to choose, the products most frequently chosen by tourists are shown in Table 9 below.

**Table 9.** Visitor product selection analysis.

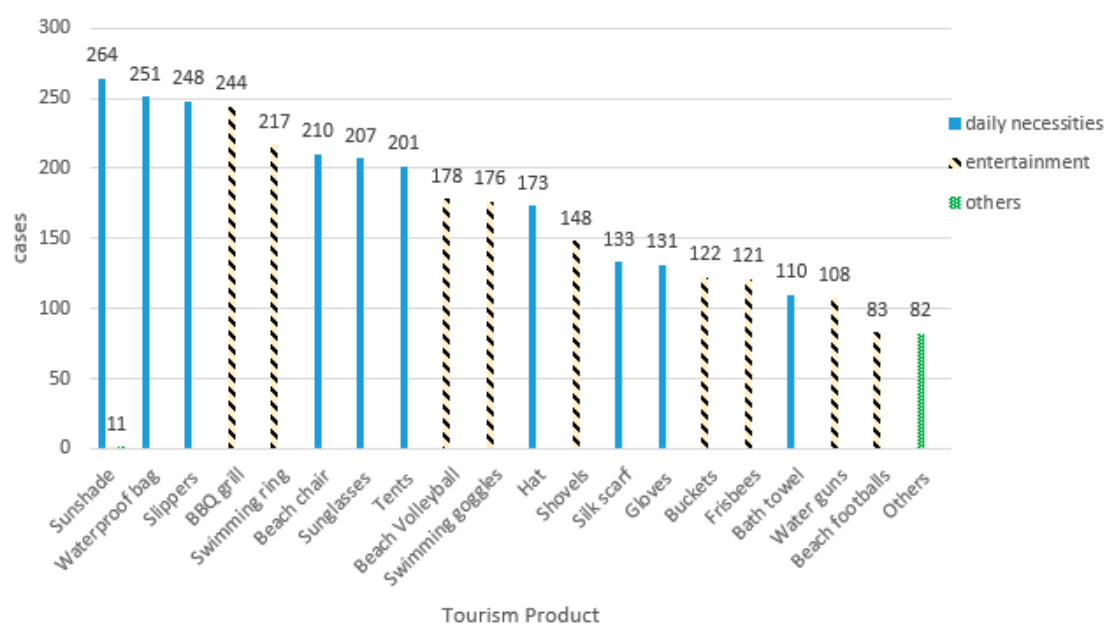
Product Options	Response	
	Cases	Percentage
Beach chair	210	6.2%
Sunshade	264	7.7%
Hat	173	5.1%
Silk scarf	133	3.9%
Bath towel	110	3.2%
Sunglasses	207	6.1%
Slippers	248	7.3%
Gloves	131	3.8%
Waterproof bag	251	7.4%
Tents	201	5.9%
BBQ grill	244	7.2%
Swimming goggles	176	5.2%
Swimming ring	217	6.4%
Beach Volleyball	178	5.2%
Beach footballs	83	2.4%
Water guns	108	3.2%
Frisbees	121	3.6%
Shovels	148	4.3%
Buckets	122	3.6%
Others	82	2.4%
Sum	3407	100.0%

The 20 options selected for this study for tourists to choose can be divided into three categories: daily necessities, recreational products, and others. The daily necessities and recreational products are selected according to the common consumption of seaside tourists and related literature references. The data analyzed are shown in order in Figure 4 [64].

From the diagram, we can see that “others” ranks 20th, which means that the 19 options ahead in the list can basically meet the consumption habits of tourists in the scenic area.

Among them, the top four products, with relatively close values and so regarded as a group, are umbrellas, waterproof bags, slippers, and barbecue grills. The first three are all daily necessities, with only one used for entertainment. The options ranked 5–8 are also relatively close in value and can also be regarded as a group, which are swimming rings, beach chairs, sunglasses, and tents. Three of the products are daily necessities, and only one is for entertainment. The following products ranked 9–11 with relatively close values and seen a group are beach volleyball, swimming goggles, and hats. In this group, there are two recreational products and one daily necessity. The rest of the product options with less than 150 cases are not analyzed in detail. As such, we can see that among the top eleven products, daily necessities are a majority with a total of seven, and the other four are recreational products.

This shows that tourists have a high tendency to opt for daily necessities when choosing products in seaside scenic spots, and that barbecue grills as recreational products with the highest demand, not waterborne recreational products, is far removed from people’s conventional perception. So, when the tourist sharing products are deployed, priority can be given to the top three products in the daily necessities and recreational products, i.e., sunshades, waterproof bags, slippers, barbecue grills, swimming rings, and beach volleyballs.



**Figure 4.** Tourism product analysis result.

#### 4.8. Analysis on the Concerns about the Products

This paper further analyzes tourists' concerns on tourist sharing products. Several possible concerns are coded and enumerated for tourists to choose from, the most frequent options are shown in Table 10.

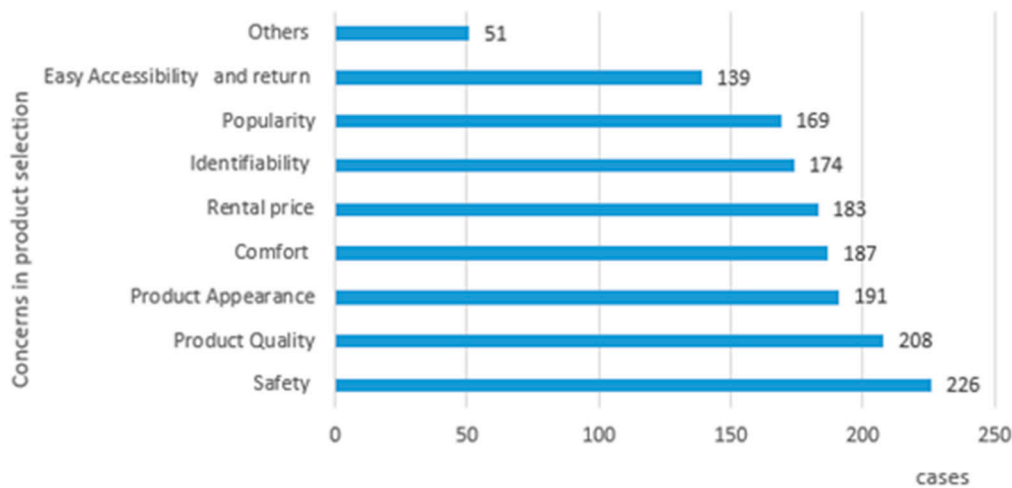
**Table 10.** Tourists' focus analysis.

Focus Point	Response	
	Cases	Percentage
Product Quality	208	13.6%
Rental price	183	12.0%
Product Appearance	191	12.5%
Safety	226	14.8%
Comfort	187	12.2%
Identifiability	174	11.4%
Easy Accessibility and return	139	9.1%
Popularity	169	11.1%
Others	51	3.3%
Sum	1528	100.0%

These nine options for tourists are largely selected based on the existing research literature on sharing products. Issues are applied on tourist sharing products, and the analysis result is shown in order in Figure 5 [65].

According to the relevant research data of the existing sharing products, the issues surrounding products that are mostly concerned by some users are listed, and the issues are applied to tourist sharing products.

The diagram shows that "others" concerns ranked last, with the number of cases being significantly less than the rest of the options, which means that the first eight options can basically satisfy the analysis of tourists' concerns about tourist sharing products, so "others" can essentially be disregarded.



**Figure 5.** Analysis of concerns.

From the histogram, we see that the cases of safety and service quality ranking in the top two exceeds 200, indicating that tourists are most concerned about the basic safety and reliability of the tourist sharing products. This has to do with the fact that sharing products are used on a rental basis. The safety and reliability of the product is the basis for establishing the user's trust in the products. The options with the number of cases between 200 and 150 accounted for half of the options analyzed and small numerical differences, meaning that these issues attract the same level of attention from tourists. Among them, product appearance, comfort, and easy identification all indicate the focus of tourists on the product using experience and their expectation of high-quality product experiences from the products, indicating that tourist sharing products need to be re-evaluated and re-designed and cannot simply use general products instead. Rental price and popularity are the factors that tourists consider when choosing products. Products with a reasonable price and good reputation can promote tourists to build confidence in them. The convenience of accessibility and returning the products being relatively less in the case number reflects tourists' recognition of the existing way in which sharing products are provided. They may think that it is acceptable that tourist sharing products are provided in the form of rental and returning, which is consistent with previous findings on user-perceived ease of use.

## 5. Discussion of Results

Through purpose-oriented collection of data, this paper conducts scientific and effective analysis of the data and demonstrates hypotheses. The comprehensive analysis results show that the tourist sharing products can not only be accepted by users but also have a positive effect on the tourist experience and tourism service. At the same time, the analysis results have also offered important concerns for the future design and development of tourist sharing products.

### 5.1. Tourists' Acceptance

By sharing, tourist sharing products are redefining seaside consumer goods, which require reconsideration of tourists' acceptance of them. The questions on tourists' perceived usefulness and ease of use are aimed at tourists' understanding of consumer sharing products in scenic spots and their acceptance of them in daily life. The positive effect of the perceived usefulness on the intention to use these products indicates that tourists recognize the existence of tourist sharing products and believe that the use of these products will help them plan their travel and time, and provide help during the travel process that they are willing to pay for. Perceived ease of use focuses on the process of tourists using the products. The operation process and rental and return approach for current urban sharing products are cited to let tourists choose whether they approve it or not and to inquire



whether tourists can operate the seaside amusement products correctly. Obtaining the result that perceived ease of use can positively affect the intention to use indicates that tourists can accept tourist sharing products in the form of current sharing products and can operate and use tourist sharing products by themselves [66].

The positive impact of tourists' perceived usefulness and ease of use on the intention to use can indicate that tourists recognize the form and function of tourist sharing products and accept and are willing to use tourist sharing products. This proves that tourists can accept and use tourist sharing products.

### 5.2. Travel Experience

Tourist sharing products provide independent and diverse choices for tourists' travel consumption, which is an effective way to enrich tourists' travel experience. By providing more choices in product use for tourists, tourist sharing products provide them with more forms of entertainment and leisure. In the research, tourists' perceived enjoyment refers to the analysis of the relationship between the diversified modes of entertainment provided by tourists sharing products and tourists' user experience. That tourists' perceived enjoyment can positively affect the intention to use shows that tourists are willing to use tourist sharing products and agree that they can offer more leisure and forms of entertainment, increase their fun in travel, and increase their interaction and communication with peers during use [67].

Enjoyment is a big feature that distinguishes tourist sharing products from other urban service sharing products. Their goal is to allow tourists to participate in more recreational activities to obtain more pleasure. Meanwhile, related research also shows that having pleasure during the journey will bring an excellent travel experience. Therefore, it proves that tourist sharing products can improve tourists' travel experience.

### 5.3. Improving Services

The concept of sharing is an operation theory in service business [68]. Using tourist sharing products to guide tourists' consumption and tourism behavior is conducive to improving the quality of tourism services in scenic areas. The measured intention to use reflects tourists' general recognition of tourism sharing products; the analysis confirms that tourists' perception has a positive impact on their intention to use. That is to say, tourists in the survey are willing to use different types of tourist sharing products in different scenic areas, and are also willing to recommend the products to their friends, and it means that tourist sharing products have a relatively broad range of prospective customers. Intention to use in this study has a positive effect on expected outcomes. The expected outcome focuses on issues related to tourism products that are often encountered in seaside scenic areas. Seaside environmental issues, for example, refer to some common behaviors such as the littering of product packages. The misdistribution of seaside tourism resources is often seen in some scenic spots where tourists flock together, while in others there are few or no tourists at all, resulting in the value of some tourism resources not being fully tapped, while some tourism resources are over-exploited and overwhelmed. The planning of the play area is intended to avoid intermingling and interfering between different recreational activities. For example, on the beach, there are tourists who are relaxing on deck chairs, others playing together, or children frolicking around, and tourists playing interactive games in the shallow waters of the sea, while swimmers need to pass through them to go to deeper water areas, and barbecuing is carried out in improper areas. The analysis result shows that the surveyed tourists agree that these problems can be improved through the use of shared tourism products.

Tourist sharing products can be deployed in a targeted area and in a coordinated manner, so these problems in seaside tourism can be alleviated by managing products to control tourist behavior. With the support of a broad perspective user groups, it is possible to control the generation of product-related waste in the environment, lead tourists' travel paths to achieve a better distribution of tourism resources and divide the play area by the de-

ployment of the products. With the help of tourist sharing products, scenic-spot managers can guide tourists to gather in different areas according to their different needs for entertainment, which facilitates the transformation of general services into customized services, saves human resources, and reduces investment in hardware construction and maintenance. It will inevitably be a way to improve the quality of tourism services. Therefore, tourist sharing products can improve the quality of tourism services in scenic areas [69].

#### 5.4. Product Design

In the process of designing conventional products, we need to be clear about the important attributes of the products and design based on their attributes. For the design and development of tourist sharing products, there are two important attributes that deserve attention: the product attribute and shared attribute.

According to the analysis of tourists' choice of products, product attributes and goals of design can be surmised from the perspective of tourists' demand for tourist sharing products. First, between the two categories of daily necessities and recreational products, tourists have more demand for daily-use products, so daily necessities are more easily accepted by most users, especially sunshades, waterproof bags, and slippers, which are in line with the needs of most tourists when they visit the beach. As shared products, their renting procedures should be simplified for tourists, and it also should be considered in the design to combine the functions of different products, so the tourist sharing products should be designed from the perspective of multi-functional combination [70]. For example, the sunshade uses a waterproof bag as the umbrella cover that is fixed to the umbrella. In use, it can not only ensure the independent use of the umbrella and the waterproof bag, but also ensure that the two products are connected and not lost. Secondly, among the recreational products, the most frequently chosen by tourists is the barbecue grill, which is irrelevant to water-borne activities. This is far removed from people's cognition of tourism peripheral products in conventional seaside tourism, which is worthy of designers' attention and may have great commercial value. Meanwhile, the other two top-ranked products in recreational products are swimming rings and beach volleyball. These three products all have certain space and environment requirements, so the relevant principles in directional design can be applied, and the related product use design strategy can be carried out according to the specific environmental and spatial requirements [71]. For example, sharing barbecue grills are only provided with some necessary parts, so tourists have to use them with the ground facilities at the designated location, so as to control the amount of disorderly barbecue behavior in random places. The swimming ring is associated with some facilities at the seaside, such as lifeguards, rental machines, etc. When the distance from the coast or the swimming time exceeds the predetermined safety limit, tourists will be reminded to return to the shore. Beach volleyball and nets are provided in pairs. According to the size of the ball, the courts and nets of different sizes are matched to meet the needs of tourists of different ages and genders. At the same time, the venue is reasonably allocated to ensure that tourists do not interfere with each other during entertainment. According to their different attributes, products are designed in different ways that, besides satisfying their functions, will show the differentiated features of tourist sharing products.

The principles in the design of products with sharing attributes can be summarized from the analysis of the customers' concerns about tourist sharing products. Tourists are mainly concerned about three aspects of tourist sharing products safety and reliability, high-quality user experience, and fair price [72]. The sharing attribute of tourist sharing products means that the time when the product used by tourists is limited, but the product will be used frequently during the time that tourists hold the product. Therefore, a focus on product safety and reliability in design is essential to ensure that products can function normally. The concept of sharing is based on user services, and the sharing attributes of all tourist sharing products must be able to provide better services than conventional products. In their design, a variety of designs shall be tried from multiple angles to ensure that the products will provide comprehensive services and a high-quality user experience

for users, so as to win their recognition. Only when the products are recognized by more and more users can it be popularized and accepted by more customers. Promoting user consumption behavior by building tourists' trust in products is a necessary condition to ensure the healthy development of tourist sharing products. Reasonable product pricing helps sharing products gain a good reputation and wide user support, thereby promoting them to establish a healthy ecological model and sustainable development [73]. That is to say, when designing shared tourism products, rigorous thinking is required to determine the target product model, with a widely affordable price for users and a product that is easy to use, avoiding products that are too expensive or too peripheral to let tourists have unnecessary concerns when choosing traveling products.

## 6. Conclusions

### 6.1. Major Conclusions

This paper studies the promotion and application of sharing products in tourism services and demonstrates the value in applying sharing concept in tourism services: tourist sharing products can improve tourists' travel experience and provide a way to optimize tourism services. The research analyzes the causal relationship among tourists' perceptual cognition, intention to use, and expected outcome of tourist sharing products, and confirms the positive impact based on the resulting data and provide evidence for the research hypothesis. This research is based on previous scholars' research on the sharing concept and tourism behavior, and centers on the feasibility of tourist sharing products, making evaluation from the perspectives of tourists' travel behavior and tourism services. At the same time, it analyzes the choice behavior and concerns of tourists in tourist sharing products, finding the difference between tourists' actual demand for products and their conventional cognition, and after analyzing and interpreting the specific data results, proposes corresponding design strategies.

The findings in this study are consistent with the views and findings of relevant scholars. For example, there is a correlation between purchase intention and service quality [16], Driving Factors of the Health and Wellness Tourism Industry: A Sharing Economy Perspective Evidence from KPK Pakistan [24], Sharing Economy Will become the Trend of Development in the Future with its Excellent Economic Models Features [29], Sharing Products can Adjust the Existing Industrial Mixture and Alleviate Tentions [30], Introduction of New Technologies in Service Industry will Bring a Win-win Situation to both Businesses and Customers [11] and so on. The research acknowledges the advancement of the sharing concept, the diversity of the development of sharing products, the excellent consumer experience brought by tourist sharing products, their contribution to tourism services, and their future market potential.

### 6.2. Theoretical Significance

By specific and effective methods that benefit the research logic, this study confirms the importance of three factors: tourists' perceived usefulness, ease of use, and enjoyment in the presumption research of tourist sharing products and expanded existing research in areas involving sharing products and tourism services. Through a series of steps from field questionnaires, data analysis, hypothesis evaluation, and qualitative conclusion, we have the following conclusions:

The assumption of the specialized application of the sharing concept in serving target customers instead of the general population is feasible. The sharing concept can not only be effective in the urban service system but also has advantages in services for special groups and needs.

Tourist sharing products can be an effective means to improve tourism services. The application of the model of sharing tourism peripheral products significantly improves tourists' intention to consume. As such, tourists receive more entertainment options with products, such as: tour duration, space range, tour method, tour items, etc. The tourism

industry has significantly improved overall tourism services by combining service resources from multiple channels.

Tourist sharing products will improve the travel experience for tourists and help improve the tourism service system in the scenic spots. Tourist sharing products can become a medium that adjusts the needs of tourists and the scenic spot service system, weakening their contradiction through product options and management and realizing a win–win situation between the served and the servant, that is, the tourists and the scenic spot service system.

Tourists have special needs for tourist sharing products and have concerns with their attributes, so products need targeted design and development strategies. Tourist sharing products cannot just use conventional products with the sharing thinking. They need to be specially designed and developed with a focus on various factors such as users' usage and consumption behavior, psychology of choice, and evaluation of their features to achieve the expected products.

Amid the prosperous service economy and sharing economy, it is in line with the trend of the modern industrial development to promote and distribute tourism peripheral products with sharing concept and will bring an expected positive impact on the tourism services by improving the tourists' travel experience.

### 6.3. Contribution

The discussion on the combination of shared products and tourism services and the relevant testing models and methods used in this study can provide references for subsequent research in various directions and disciplines. Nowadays, more and more service industries expect to improve their service systems, and this study provides a path to realize the sharing concept. The consumption mode of shared products can not only improve the user experience but also reduce costs and promote users' desire for consumption. Such business opportunities are worthy of the attention of many innovative companies. The related concepts in this paper can provide some guidance for the promotion and R&D strategies of sharing products in the future. The data analysis methods and results used in the research can be used as effective evaluation tools in the analysis of the logic of other types of products and the research of peripheral information. The research logic in this paper can provide a reference for the feasibility test of design and development of different products or the mining of design resources.

### 6.4. Limitations and Future Research Directions

This research is an experimental attempt based on a questionnaire. Although some valuable findings have been obtained in the field of interest, there are still some limitations. One limitation is the sample size: the number of samples limits the tourist population covered by the study, as the study cannot target all tourists, so the attitudes of those who have not participated in the test cannot be collected. There are also limitations of the test area: the study selected two sites to survey, which, although somewhat representative, were insufficient in terms of universality in the study area. There are also limitations in the analytical method. The analytical techniques used in the research only represent one way of thinking. If other analytical techniques and more precise calculation formulas and operation methods are used, the accuracy of the data can be further improved.

On the other hand, the tourist sharing products studied in this paper are only a concept, and there is no concrete object to help make subjective judgment, so the respondents are achieving their cognition through the interpretation of the questionnaire sender and their experience of existing sharing products and tourism products. Respondents will have differences in concepts of tourist sharing product due to their own differences in understanding and cognitive abilities, which will affect the consistency of images of products. Meanwhile, all service systems have an upper limit on the loading capacity, and scenic area services and sharing product services will have a limit on the number of tourists they can hold. When the upper limit is exceeded, the service quality will inevitably decline. The

scenarios considered in this study is the ideal state where in the service capacity is adapted to the number of tourists and does not include special situations such as holidays and special events, when the number of tourists and shortages in service resources see explosive growth. The tourist experience and scenic spot services in these cases are also worthy of in-depth study, but the methods and logic in this study will no longer be applicable, and the relevant research results will also lose their function as guidance.

The authors hope that in future research, wider-range research may be conducted by expanding the sample size, to improve the accuracy of the research results, and more research methods introduced to reduce the subjective influence of the investigators on the results, and more objective data collected to increase the accuracy of research, thereby improving the objectivity of research methods. The authors hope to continue to investigate the shared product. The connection of different requirements could then produce viable concepts for building service systems, adding more research perspectives. The viability of shared product promotion from a variety of industries and groups could then be evaluated.

**Author Contributions:** Conceptualization, J.Y.; methodology, J.Y. and R.Y.; software, L.Y.; validation, J.Y., R.Y. and L.Y.; formal analysis, J.Y. and L.Y.; investigation, J.Y. and R.Y., data curation, R.Y. and L.Y.; writing—review and editing, J.Y.; visualization, L.Y.; supervision, R.Y.; project administration, J.Y. and R.Y. All authors have read and agreed to the published version of the manuscript.

**Funding:** Research on Artificial Intelligence and Educational Reform. Jiangsu Education Science “14th five-year plan” Major Project in 2021, Jiangsu Education Science Planning Office, grant number A/2021/03.

**Institutional Review Board Statement:** The study was conducted in accordance with the Declaration of Helsinki, and approved by the Institutional Review Board (or Ethics Committee) of BioMedical Studies Ethics Committee of NNU (Nanjing Normal University) (protocol code NNU202206001 and date of approval 22 June 2022).

**Informed Consent Statement:** Informed consent was obtained from all subjects involved in the study.

**Data Availability Statement:** All relevant data will be stored in the NNU database. The original survey data will be deleted on 10/01/2023.

**Conflicts of Interest:** The authors declare no conflict of interest.

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