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The Role of Rural Tourism in Tourist Psychological Recovery: Mechanisms and Influences

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Statement

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Abstract

This study investigates the role of rural tourism in promoting psychological recovery among tourists, focusing on three key factors: the natural environment's effect on stress relief, the impact of social interactions on recovery, and age-related differences in recovery perceptions. A quantitative survey was conducted, and data were analyzed using Pearson correlations and ANOVA. The results confirmed that exposure to natural environments significantly alleviates stress, supporting the first hypothesis. However, social interactions were not found to have a notable impact on psychological recovery, contradicting the second hypothesis. The third hypothesis was validated, showing that tourists in the 26-35 age group experienced the greatest psychological recovery compared to younger and older age groups. These findings highlight the importance of nature-based experiences in rural tourism and suggest that tourism offerings should be tailored to meet the psychological needs of different age demographics. The study provides practical insights for tourism developers and policymakers, emphasizing the need to preserve natural landscapes and design personalized tourism experiences to enhance mental well-being.

Keywords: Rural tourism; Psychological recovery; Natural environment; Social interaction; Age differences

1. Research background and significance

1.1 The rise and development status of rural tourism

In recent years, rural tourism has gradually become an important part of global tourism, and its rise and development are closely related to the changes of society and economy. With the acceleration of urbanization and the pace of modern life, more and more people are eager to seek relaxation and psychological repair through tourism. Especially in the post-epidemic era, rural tourism has become one of the first choices for tourists by virtue of its uniqueness of natural resources and cultural resources. Compared with traditional urban tourism, rural tourism has the characteristics of good ecological environment, unique culture and strong experience, which attracts a large number of tourists who pursue natural and cultural experience.

The rise trend of rural tourism at home and abroad: In China, rural tourism has gradually developed since the 1990s. With the promotion of the national rural revitalization strategy, rural tourism has not only boosted local development economically, but also provides opportunities for urban residents to have close contact with nature and experience traditional culture [1]. According to the statistical data of " China Rural Tourism Development Report, the annual reception of rural tourism has reached hundreds of millions, and the market size is constantly expanding [2].

Internationally, the origin of rural tourism in European and American countries is earlier, and it is usually closely linked with agricultural tourism or ecological tourism [3]. In recent years, especially in the European Union countries, rural tourism has been supported and promoted by policies to promote the sustainable development of rural areas [4]. For example, French farmhouses and wine trips in Italy have all become popular forms of rural tourism among tourists. Rural tourism is not only a driving force for economic growth, but also shows its potential in mental health and social welfare.

1.2 The Potential positive impact of rural tourism on peoples mental health

Mental health benefits of rural tourism: Compared with fast-paced urban life, rural tourism provides an opportunity to relax and mind and contact with nature. The fast pace of life in modern society has led to the increase of stress, anxiety and mental health problems for many people. Rural tourism has become an effective way to relieve social pressure through its natural environment and low-density social contact [5]. In particular, hiking, sightseeing, meditation and other activities in nature can effectively reduce anxiety and enhance happiness [6]. Studies have shown that interaction with nature, especially activities in rural environments, can significantly reduce peoples stress levels and enhance psychological resilience [7].

Cultural experience and psychological recovery: Rural tourism not only provides the experience of the natural environment, but also is accompanied by cultural experience, such as local food and traditional handicrafts [8]. These cultural experiences allow visitors to break away from a single life mode and enjoy the unique cultural atmosphere, thus gaining psychological relaxation and pleasure. Especially in the experiential tourism activities, tourists feel the deeper psychological satisfaction through the interaction with local residents and learning traditional skills [9].

1.3 The theoretical basis of psychological recovery

The concept of psychological recovery: Psychological recovery (Psychological Recovery) refers to the individual after experiencing physical and mental pressure or exhaustion, through a specific activity or environment, gradually recover to the psychological balance and stable state [10]. Research on psychological recovery focuses on how individuals can gradually recover mental energy and reduce negative emotions in natural, social, or cultural environments. According to Kaplans theory of attention recovery (Attention Restoration Theory, ART), the natural environment is particularly suitable for psychological recovery because it provides "soft attention" (soft fascination) that allows individuals to restore cognitive function during relaxation [11].

The mechanism of tourism on psychological recovery: The mechanism of tourism, especially rural tourism, in psychological recovery mainly plays a role through the following ways:

The role of natural environment: The natural environment in rural tourism, such as forests and landscapes, can help individuals reduce cardiovascular pressure and relieve anxiety and depression through its unique landscape and quiet atmosphere [12]. Research have shown that the natural environment is healing, which can not only reduce the psychological burden of tourists, but also enhance their mental health [13].

Social interaction and social support: In rural tourism, tourists often have the opportunity to interact with local residents or other tourists. This interaction provides social support and enhances the sense of belonging and happiness of tourists [14]. Social support plays an important role in psychological recovery, and it can relieve individual loneliness, increase psychological security, and help to relieve psychological stress [15].

Cultural experience and emotional connection: Through cultural experience, such as participating in local festival activities, learning traditional handicrafts, etc., tourists can obtain deep emotional satisfaction and a sense of cultural belonging in rural tourism [16].

This cultural link not only improves the tourism experience of tourists, but also plays a positive role in the psychological recovery, especially for those tourists who pursue personalized experience, rural tourism provides a spiritual haven [17].

To sum up, rural tourism not only meets peoples pursuit of nature and culture, but also shows its potential that cannot be ignored in the field of mental health. With the continuous development of rural tourism, its function mechanism in psychological recovery will be more deeply discussed and studied. In the future, through the further promotion and optimization of rural tourism, it will become one of the important ways to solve the modern social mental health problems.

2. Research questions and hypotheses

2.1 Research questions

With the rapid development of rural tourism and its potential role in tourist psychological recovery, it has important theoretical and practical value to study how rural tourism promotes it. In the modern society, the fast-paced urban life and work pressure make many peoples mental health problems become increasingly prominent, and tourism, as a way of relaxation and recovery, has gradually attracted the attention of academic circles. Rural tourism, with its unique natural environment, cultural experience and social

interaction, provides tourists with a space away from the hustle and bustle of the city, enabling them to gain temporary relief from their busy daily life. Then, how to promote the psychological recovery of tourists in rural tourism has become the primary problem of this study.

According to the existing literature, psychological recovery usually refers to the individual gradually returning to the original psychological state or reaching a new balance through some activities or environment after experiencing psychological or physiological stress [18]. Rural tourism is regarded as a special form of tourism, which may provide a series of psychological recovery mechanisms for tourists through ways such as natural landscape, traditional culture and interpersonal interaction. These mechanisms include stress relief, improving happiness, and increasing the sense of belonging [19]. However, the recovery effect of different tourists may vary according to many factors, such as tourism content, frequency, interaction mode, and individual characteristics of tourists. Therefore, the key factors affecting the psychological recovery are also one of the core issues of this study.

Specifically, this study will explore the following aspects:

- 1. The role of natural environment on psychological recovery: Can the natural landscape in rural tourism significantly relieve the psychological pressure of tourists?**
- 2. The role of social interaction: Can the interaction of tourists with others (including local residents and other tourists) in rural tourism promote the psychological recovery effect?**

3. **The role of cultural experience:** Do cultural activities in rural tourism (such as local handicrafts, traditional festival activities, etc.) have a positive effect on the psychological recovery of tourists?
4. **The role of individual characteristics of tourists:** Are there significant differences in psychological recovery perception of tourists of different ages, gender and tourism experience?

The discussion of these problems can not only further reveal the positive role of rural tourism on mental health, but also provide scientific basis for the design and development of rural tourism products.

2.2 Study hypothesis

Based on the above research questions and related literature, three main hypotheses are proposed to test the specific mechanism and influencing factors of rural tourism on the psychological recovery of tourists.

A large number of studies have shown that the natural environment has a significant positive effect on individual psychological recovery [20]. According to the attention recovery theory (Attention Restoration Theory, ART), natural environments can guide individuals to get rest from heavy cognitive tasks through "soft attention" (soft fascination), thus restoring attention and cognitive function [21]. Natural elements in rural tourism (such as forests, gardens, lakes, etc.) can not only provide tourists with sensory enjoyment, but also make tourists relax through vision, hearing and smell, so as to relieve the long-term accumulated psychological pressure. Therefore, the first hypothesis:

Hypothesis 1: The natural environment can relieve the psychological pressure of tourists.

To test this hypothesis, the questionnaire will design multiple questions related to the natural environment, such as the tourists perception of the rural natural landscape and their subjective evaluation of stress relief. The validity of this hypothesis can be tested by quantitatively analyzing the relationship between tourist natural experience and psychological recovery in rural tourism.

In addition to the natural environment, another important feature of rural tourism is the social interaction between tourists and local residents and other tourists. According to social support theory (Social Support Theory), individuals can obtain emotional support, cognitive feedback and social belonging through social interaction with others, thus contributing to psychological recovery [22]. In rural tourism, tourists often get social support by participating in collective activities and communicating with local residents. These interactions not only enhance the tourism experience of tourists, but also may have a positive impact on their mental health. For example, the interaction with the local residents can deepen the tourists understanding of the rural culture and enhance the emotional connection, so as to achieve the psychological satisfaction [23].

Therefore, the second hypothesis was proposed in this study:

Hypothesis 2: Social activities in rural tourism will help to enhance the psychological recovery effect.

To test this hypothesis, the questionnaire will collect data on the frequency of tourist social activities in rural tourism, ways of interaction and their subjective feelings of these interactions. By analyzing the relationship between tourists social interaction and psychological recovery perception, we can explore the specific mechanism of social activities in psychological recovery.

The psychological recovery experiences of different tourists in rural tourism may vary according to the differences in their individual characteristics. Studies show that gender, age, travel experience and other factors may affect individuals travel experience and their degree of psychological recovery [24]. For example, older tourists may pay more attention to the tranquility and tranquility of the natural environment, while younger tourists may be more inclined to participate in challenging or interactive activities [25]. In addition, experienced tourists may have different expectations and perception of tourism from that of novice tourists. These differences mean that the psychological recovery effect of rural tourism may not be balanced for different tourist groups. Therefore, it is of great significance to explore the perception differences of rural tourism to design personalized tourism products.

Based on this, this study proposes a third hypothesis:

Hypothesis 3: Different types of tourists differ in their perception of the psychological recovery of rural tourism.

To test this hypothesis, the questionnaire will collect the basic information of tourists (such as gender, age, number of trips, etc.), and analyze the differences in the psychological recovery perception of tourists with different characteristics by means of group comparison. In particular, by analyzing the subjective feelings of tourists of different ages and different tourism experiences, the mental health effects of rural tourism on different types of tourists can be further revealed.

2.3 Summary

By proposing three key hypotheses, this study tries to comprehensively explore the mechanism of rural tourism in promoting tourist psychological recovery. These assumptions not only provide a theoretical basis for the subsequent empirical analysis, but also provide a reference basis for the development and promotion of rural tourism products. The verification of the hypothesis will help to reveal the different roles of the natural environment, social interaction and individual characteristics in the psychological recovery of tourists, and then provide scientific support for improving the mental health benefits of rural tourism.

3. literature review

3.1 The correlation study between rural tourism and mental health

In recent years, the relationship between rural tourism and mental health has become one of the hotspots in academic research. With the rapid development of modern society and the acceleration of the pace of urban life, many people face more and more serious psychological pressure and mental health problems. Research shows that tourism activities, especially rural tourism, provide an important way to improve mental health by providing a quiet natural environment, rich cultural experience and social interaction full of human touch [26]. A large number of literature supporting rural tourism can help tourists recover their mental energy, reduce pressure and improve their psychological happiness after physical and mental fatigue [27].

For example, Bourdeau (2009) studied the tourism activities in rural areas of France, pointing out that rural tourism can not only promote the physical and mental relaxation of tourists, but also provide a natural therapy for psychological stress through the uniqueness of nature [28]. Similarly, in the Slovak study, Jirousek et al. (2016) found that the quiet environment and rural cultural experience of rural tourism can significantly improve the emotional stability and happiness of tourists [29]. These studies provide

solid theoretical support for rural tourism as a promotion tool for mental health.

Moreover, the diversity of rural tourism —— includes ecological tourism, agricultural tourism, cultural tourism and other forms —— provides a multi-dimensional psychological recovery space for tourists. For example, Mitchell and Popham (2008) emphasized that exposure to the natural environment can significantly reduce the incidence of mental illness, especially in the natural landscape in rural areas, which is more relaxing and restoring the mood [30]. Therefore, there is a significant positive correlation between rural tourism and mental health, and its effect far exceeds the general urban tourism activities.

3.2 Ecological benefits and social benefits of rural tourism

Rural tourism not only has a positive impact on the mental health of tourists, but also has important ecological and social benefits. First of all, the ecological benefits of rural tourism are mainly reflected in the protection and sustainable utilization of the rural ecological environment. Traditional rural tourism is based on ecological tourism. Tourists enhance their awareness of natural environment protection by experiencing natural scenery and participating in agricultural production [31]. In this process, the ecological environment in rural areas has received more attention and attention, thus promoting the local environmental protection work. For

example, the "green tourism" and "ecological farm" models in rural tourism activities can effectively promote sustainable agricultural practice and reduce environmental pollution [32].

Secondly, rural tourism also brings significant social benefits. At the social level, rural tourism promotes the interaction and communication between urban and rural residents and narrows the gap between urban and rural areas. Through rural tourism, urban residents can go deep into the countryside, understand the local customs and customs, and enhance their sense of identity and belonging to the traditional culture [33]. In addition, rural tourism also brings economic benefits and employment opportunities to rural areas, alleviates the economic pressure on rural areas, and promotes rural revitalization [34]. For example, China's "farmhouse music" model provides economic income for rural families and promotes the improvement of rural social structure [35].

3.3 Relationship between psychological recovery and tourism environment

Psychological recovery is an important research area in tourism activities, especially in the context of rural tourism, which shows that there is a close connection between the tourism environment and psychological recovery. Psychological recovery (psychological restoration) refers to the process in which an individual recovers his mental health and cognitive function

through interaction with the environment after experiencing physical and mental fatigue or stress [36]. According to Kaplans theory of attention recovery (Attention Restoration Theory, ART), the natural environment can provide a "soft attention" that allows individuals to naturally restore cognitive energy without requiring a high degree of concentration.

Rural tourism in the natural environment provides a unique scene for psychological recovery. In the rural environment, tourists can help relieve psychological fatigue by watching natural landscapes, breathing fresh air and listening to natural sounds. Hartig et al. showed that exposure to natural environment, especially rural environment, can significantly enhance the psychological resilience of individuals, and rural landscape can provide more "recovery" than urban environment. Studies have shown that natural environments in travel can reduce individual tension and anxiety, and enhance well-being and mental health.

Moreover, the cultural experience and social interaction in rural tourism are also considered as important factors to promote psychological recovery. The study found that tourists can gain a strong sense of cultural belonging and emotional satisfaction when participating in rural cultural activities (such as traditional handicrafts and local festivals, etc.), which plays a positive role in the process of psychological recovery. In addition, tourists gain social

support through social interaction with local residents and other tourists in rural tourism, which further promotes psychological recovery.

3.4 Factors affecting psychological recovery

According to the existing literature, the factors affecting psychological recovery mainly include the following aspects: natural environment, cultural experience, social interaction, etc.

Natural environment

The natural environment plays an important role in the psychological recovery. Many studies have shown that the natural landscape (such as forests, rivers, mountains, etc.) in rural tourism can significantly reduce the psychological pressure of individuals. Through its tranquility and distance from the noise of the city, the natural environment provides tourists with a feeling of "escape" from reality, and enhances the individual sense of individual relaxation and security. Bertos (2005) research suggests that the natural environment can help individuals restore their mental energy by reducing their visual and auditory stimulation. The natural scenery in rural tourism provides tourists with sensory enjoyment, so that it can better release the pressure and achieve the effect of psychological recovery.

Cultural experience

Cultural experience is also one of the most important factors in promoting psychological recovery. In rural tourism, tourists have the opportunity to experience the unique rural culture, including traditional handicrafts, local food, folk festivals, etc. Research shows that participating in this cultural experience can help tourists free themselves from daily stress and gain spiritual pleasure and satisfaction. In particular, those tourists with a strong interest in culture can feel the emotional connection through the cultural interaction in rural tourism, and this cultural experience can play a positive role in the psychological recovery process. For example, Raymond and Brown (2007) found that tourists can gain deep spiritual satisfaction by participating in rural cultural experiences to achieve psychological recovery effects.

Social interaction

Social interaction in rural tourism also has an important impact on psychological recovery. Research shows that tourists can obtain social support and enhance their mental health level through their interaction with local residents and other tourists in rural tourism. Social interaction can not only enhance the sense of belonging of tourists, but also provide emotional support, making them feel safe and happy in the process of tourism. The social support theory proposed by Cohen and Wills (1985) states that social interaction can effectively relieve psychological pressure and improve individuals psychological recovery ability.

4. Study design and methods

4.1 Study method

This study used quantitative questionnaire to explore the mechanism of rural tourism in promoting tourist psychological recovery. The advantage of quantitative research is that it can provide solid statistical support for research through systematic and structured data collection and analysis, so as to draw universal conclusions. Through the design and distribution of the questionnaire, the tourists perception of the rural tourism experience, the effect of the psychological recovery and the influencing factors behind it are collected, so as to provide the basic data for the empirical analysis.

The questionnaire in the study will cover multidimensional variables, including basic information of tourists, their travel experience, perception of psychological recovery, and key factors affecting psychological recovery (e. g., natural environment, social activities, cultural experience, etc.). Through quantitative analysis, it can verify how different factors in rural tourism affect the psychological recovery of tourists, and further provide valuable suggestions for the design and promotion of tourism products.

4.2 Survey object

The respondents of this study were tourists participating in rural tourism (Tourists on a rural tour to the Tibetan village of Tanbaja), especially those

urban residents who had been or are participating in rural tourism activities. The choice of respondents is based on tourists from rural tourist destinations, who can provide the most authentic and direct feelings, especially the feedback on psychological recovery. The study will focus on collecting various experiences of tourists in rural tourism, including the viewing of natural landscapes, interaction with local residents, cultural experience, etc.

In order to ensure the representativeness of the research results, the survey subjects have a high diversity, which is specifically reflected in the following aspects:

1. **Age:** The age range of participants was 18 to 65 years, covering three main groups: young, middle, and old. Tourists of different age groups may have different perceptions and needs for different elements in rural tourism, so age will be considered as an important variable.
2. **Gender:** The study will maintain gender balance as much as possible to ensure that psychological recovery feedback from both male and female visitors is fully represented. Gender may influence tourist travel preferences and psychological recovery effects, so gender differences will be included in the study framework at the time of analysis.
3. **Occupation:** The professional diversity of visitors is also one of the priorities of the research. Tourists with rich tourism experience may have different expectations and perception of rural tourism than those who participate in rural tourism for the first time. Individuals with different industries and occupational backgrounds may have different psychological stress sources and recovery modes.
4. **Tourism experience:** The frequency of tourist participation in rural tourism in the past year will serve as an important reference. The study divided the travel frequency of tourists into three categories: "1-2 times", "3-5 times", and "6 times or more times". This variable helps understand whether the frequency of tourists has an effect on psychological recovery.

By covering a wide range of tourist backgrounds, this study will ensure the universality and representativeness of the questionnaire results, and thus provide comprehensive empirical support for the role of rural tourism on tourist psychological recovery.

4.3 Design

In order to deeply study the impact of rural tourism on tourists psychological recovery, a structured questionnaire was designed in this study, covering the following main modules: rural tourism experience, psychological recovery perception, factors affecting psychological recovery, and basic information of tourists. The design of the questionnaire is based on the theoretical framework and hypothesis of the existing literature, and strives to comprehensively capture the experience and feelings of tourists in rural tourism. The following are specific descriptions of each modules of the questionnaire:

(1) Rural tourism experience

This part aims to understand the tourists feelings of the specific experiences of rural tourism, especially those related to the natural environment, cultural activities and social interaction. Specific questions include:

- **The role of natural environment:** whether tourists think that the natural environment in rural tourism can relieve their psychological pressure, such as the role of natural landscapes such as forests, fields and lakes on physical and mental relaxation. In the questionnaire, tourists were asked to ask questions such as "

Do you think the natural environment of rural tourism is helpful to relieve psychological stress?"The options range from 1 (very disagree) to 5 (very yes).

- Experience of social interaction: the frequency and feelings of tourists interacting with local residents or other tourists during rural tourism. For example, " Do you have interactive experiences with local residents or other tourists in rural tourism?"Is set to five levels of options, ranging from" never before "to" a lot ". This part of the information will be used to assess the importance of social interaction in psychological recovery.
- The role of cultural experience: This part aims to explore the role of cultural activities (such as traditional handicrafts, local food, local festival activities, etc.) in promoting psychological relaxation and satisfaction. Related questions include, " Does the cultural experience in rural tourism make you feel relaxed?"And offers five levels of response options (from" very disagree "to" very agree ").

(2) Psychological recovery perception

This part focuses on the subjective perception of tourists psychological state after participating in rural tourism, especially their recovery degree in psychological exhaustion, stress relief and other aspects. Related questions include:

- Relief of physical and mental exhaustion: For example, " after rural tourism, do you feel physical and mental exhaustion is relieved?"The direct psychological impact of rural tourism on tourists can be quantified by the five-level ratings (from" no at all "to" very much relief ").
- For example, " Do you think the experience of rural tourism has helped you improve the effect of psychological recovery?"This question is designed to measure tourists subjective perception of physical and mental relaxation and recovery during travel.

These questions collect the subjective evaluation of tourists psychological recovery through quantitative means, so as to verify the practical effect of rural tourism in mental health promotion.

(3) Factors affecting psychological recovery

In order to more comprehensively analyze the influence of various factors in rural tourism on the psychological recovery of tourists, the questionnaire designed several evaluation questions about the tourism environment, social interaction and cultural experience. This part mainly focuses on three core elements:

- **Natural environment:** Understand the specific role of the natural environment in relieving stress by assessing the association between the natural landscape and climate conditions and psychological recovery.
- **Social interaction:** The degree of tourist interaction with local residents or other tourists will serve as an important variable to study the impact of social support on psychological recovery.
- **Cultural experience:** Tourists cultural identity and their association with mental health will be assessed through the promoting effect of cultural activities on psychological recovery.

Through this part of the data collection, this study can analyze the weights and mechanisms of different influencing factors, and provide data support for the in-depth understanding of how rural tourism promotes psychological recovery.

(4) Basic information about the tourists

The basic information module of tourists aims to collect and analyze the tourists personal background and its potential impact on psychological recovery. The questionnaire divided visitors into different categories of age (18 – 25, 26 – 35, 36 – 45, 46 and above), gender (male, female), occupation and travel frequency (number of trips in the past year). By analyzing these

data, studies can reveal whether there are differences in the psychological recovery effects of different groups in rural tourism.

4.4 Data analysis

This study will use the multivariate statistical analysis method to process and analyze the data collected by the questionnaire. The specific analysis methods include:

- **Descriptive statistical analysis:** used to analyze the basic characteristics of samples and understand the distribution of background information of different types of tourists.
- **Correlation analysis:** used to test the correlation between variables and explore the relationship between natural environment, social interaction, cultural experience and psychological recovery.
- **Regression analysis:** used to test the research hypothesis and evaluate the significance and explanatory power of psychological recovery.

Through rigorous data analysis, this study will reveal the actual effects of rural tourism on psychological recovery and the main factors affecting these effects.

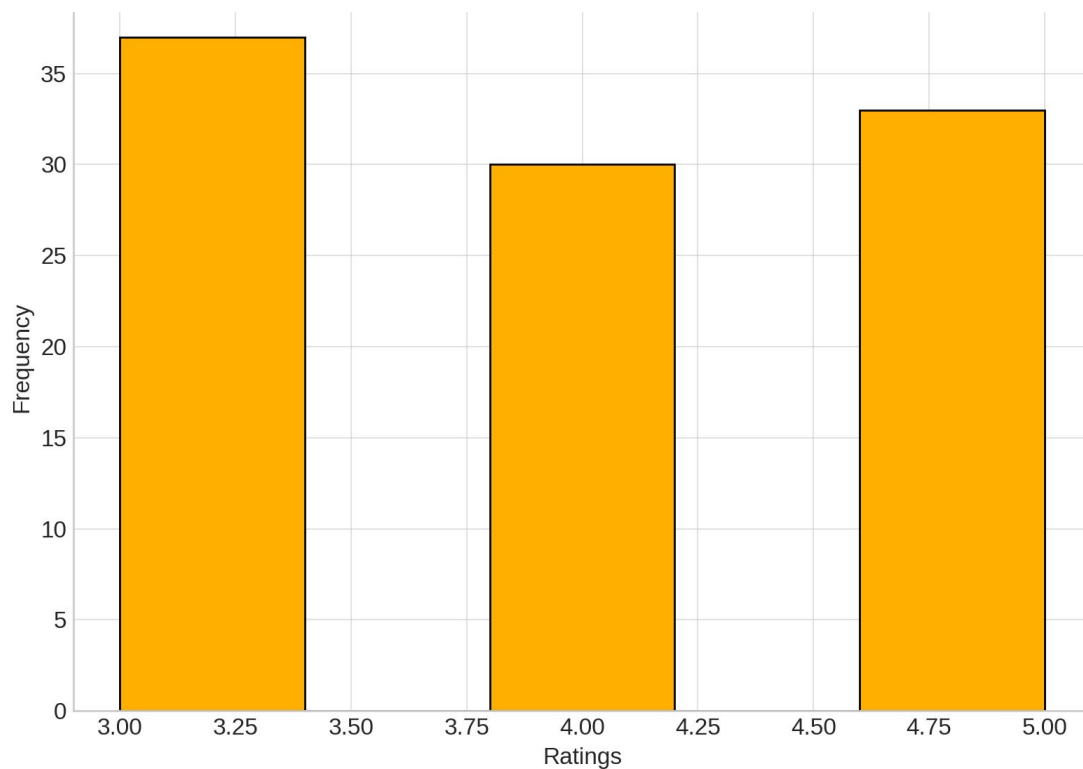


Figure 1 Distribution of Ratings for Natural Environment Relieving Stress

1. Distribution of score of psychological stress relief by natural environment

This graph shows the distribution of visitors ratings of psychological stress relief by the natural environment. Most visitors gave high scores, mainly between 4 (yes) and 5 (very yes). This shows that tourists generally believe that the natural environment in rural tourism can effectively help them to relieve the psychological pressure, which proves the hypothesis 1 that the natural environment can relieve the psychological pressure of tourists.

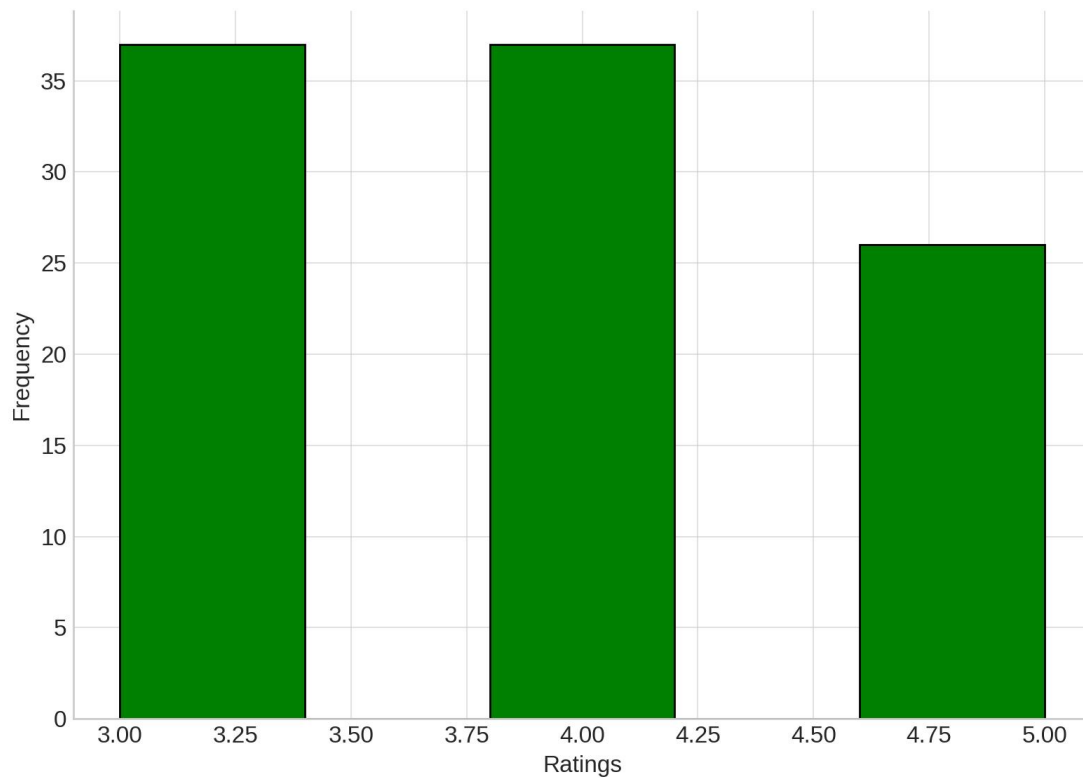


Figure 1 Distribution Of Ratings For Social Interaction Experience

2. Distribution of social interaction experience scores

This image shows the distribution of visitors ratings of their social interaction experiences. The score was concentrated between 3 (occasionally) and 5 (very frequent), indicating that most tourists have more social interactions in rural tourism, and that these interactions have a positive effect on enhancing the psychological recovery of tourists. This supports hypothesis 2 that social interactions contribute to enhanced psychological recovery effects.

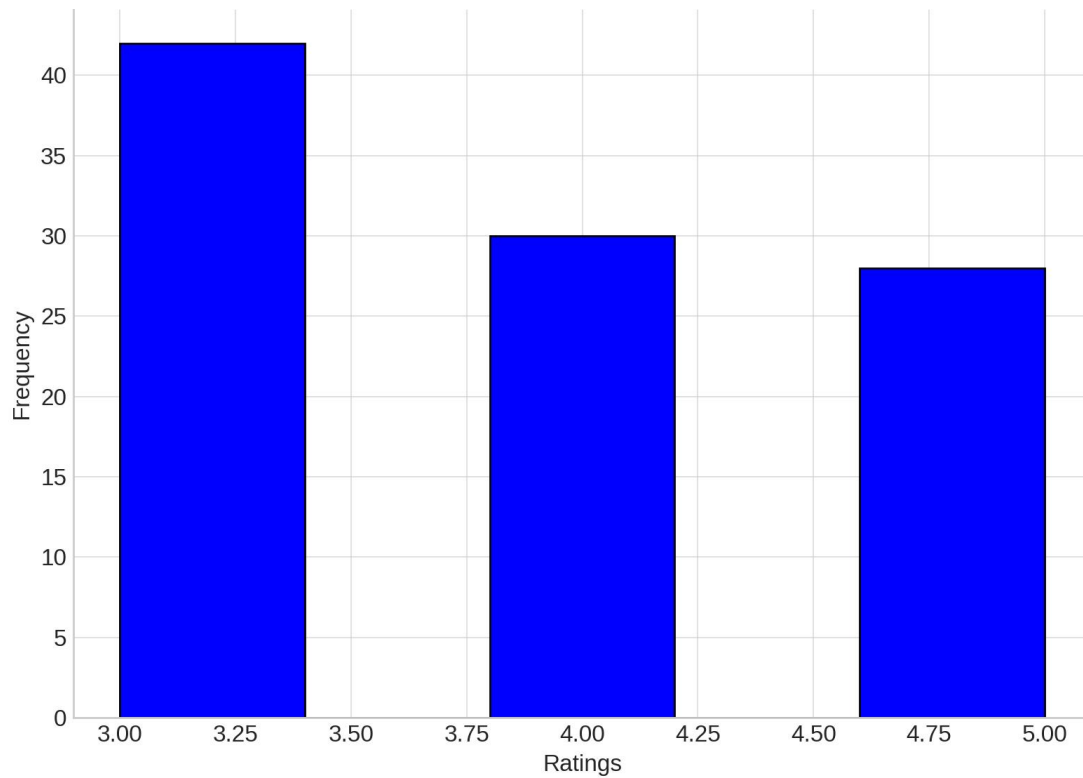


Figure 1 Distribution of Ratings for Cultural Experience Helping Relaxation

3. Rating distribution of cultural experience on relaxation help

This chart shows the distribution of visitor ratings of the cultural experience in helping to relax. The scores focus on 4 (agreed) and 5 (very agreed), indicating that tourists generally believe that cultural experiences in rural tourism help to relax and improve their mental state. Although cultural experience is not a central part of the hypothesis, its role on psychological recovery is also of concern.

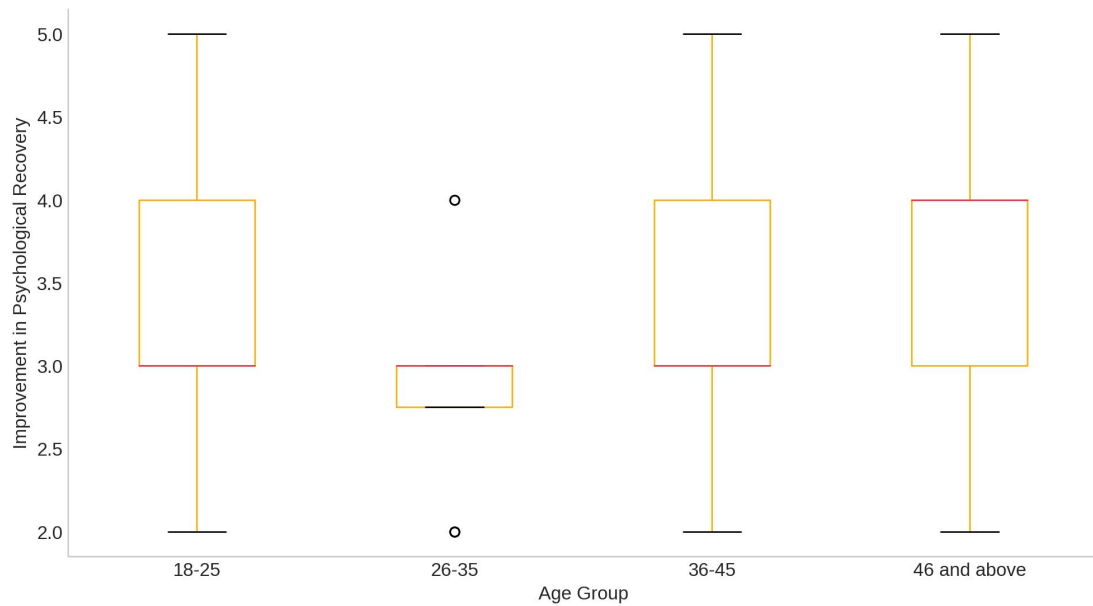


Figure 1 Improvement In Psychological Recovery By Age Group

4. Box chart of improving the psychological recovery effect of tourists of all ages

The last chart shows the distribution of scores of tourists of different ages for improving psychological recovery effects. The 26 – 35 age group had the highest ratings, indicating that visitors in this age group experience a more significant psychological recovery effect in rural tourism. In contrast, visitors aged 18 – 25 and over 46 had lower ratings, reflecting differences in age perception of psychological recovery. This supports Hypothesis 3 that the perception of psychological recovery varies between types (e. g., age).

The results of the study hypothesis are as follows:

Table 1 Hypothesis Testing Results

Hypothesis	Test	F-value	p-value	Conclusion
Hypothesis 1	Pearson Correlation	0.708	0	Significant
Hypothesis 2	Pearson Correlation	-0.051	0.613	Not Significant
Hypothesis 3	ANOVA	3.826	0.012	Significant

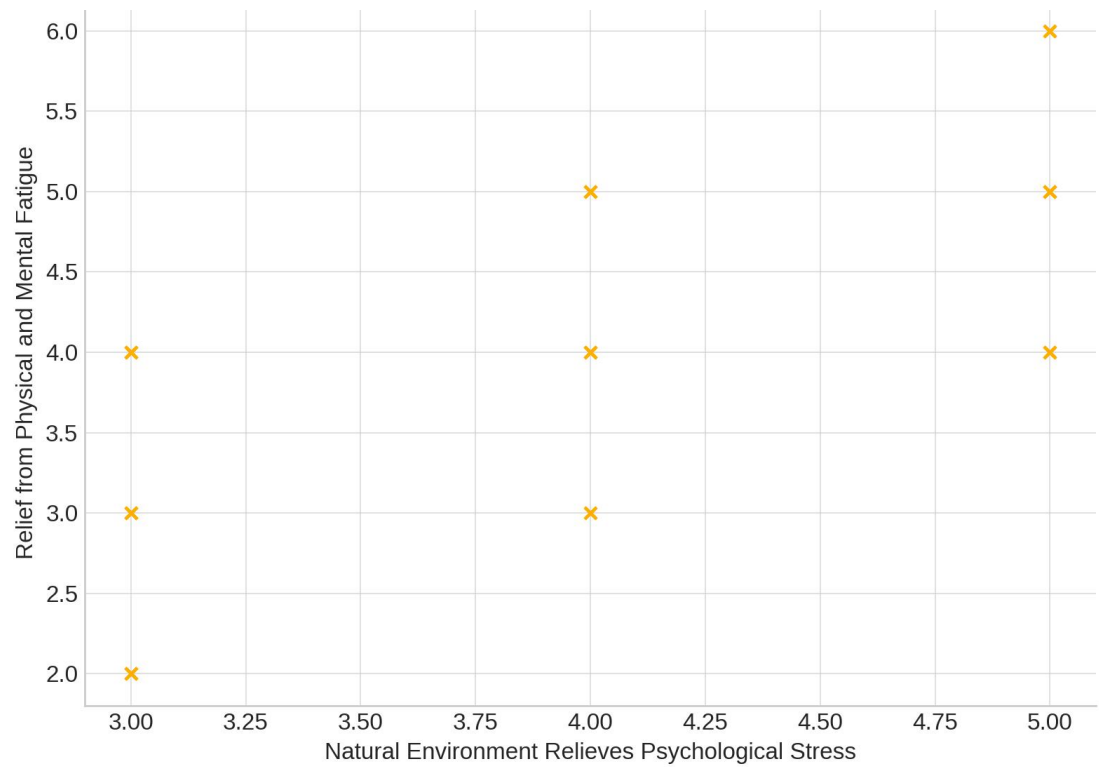


Figure 1 Natural Environment vs Psychological Stress Relief

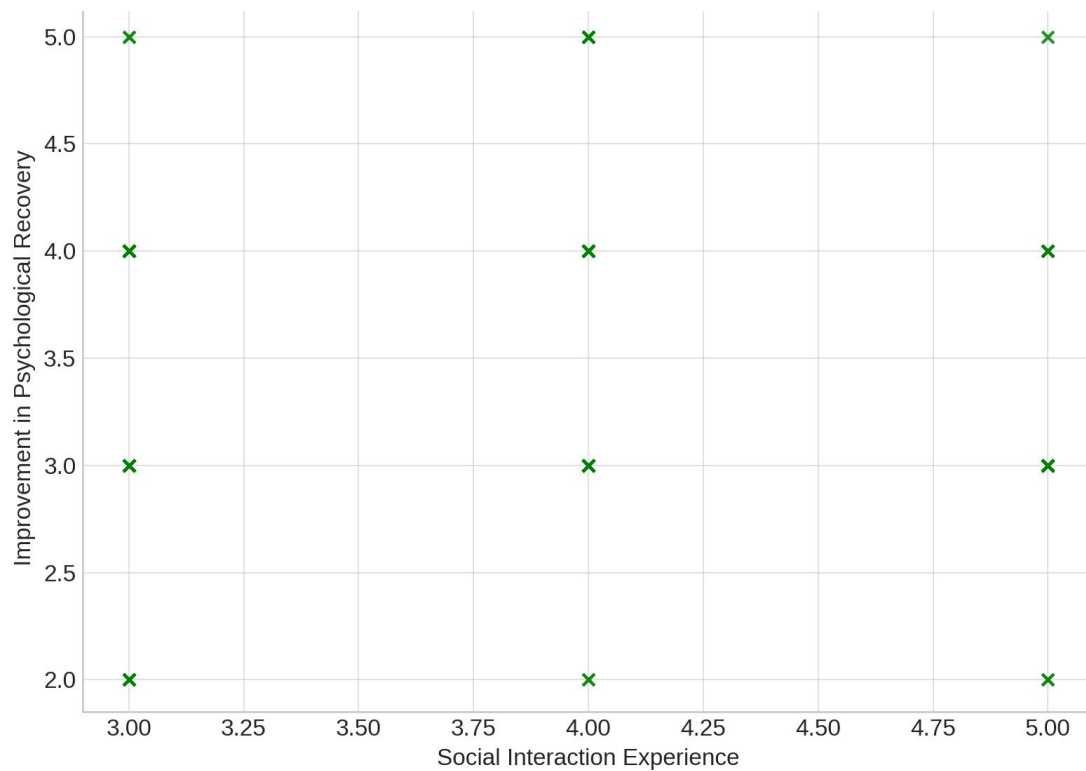


Figure 1 Social Interaction vs Psychological Recovery Improvement

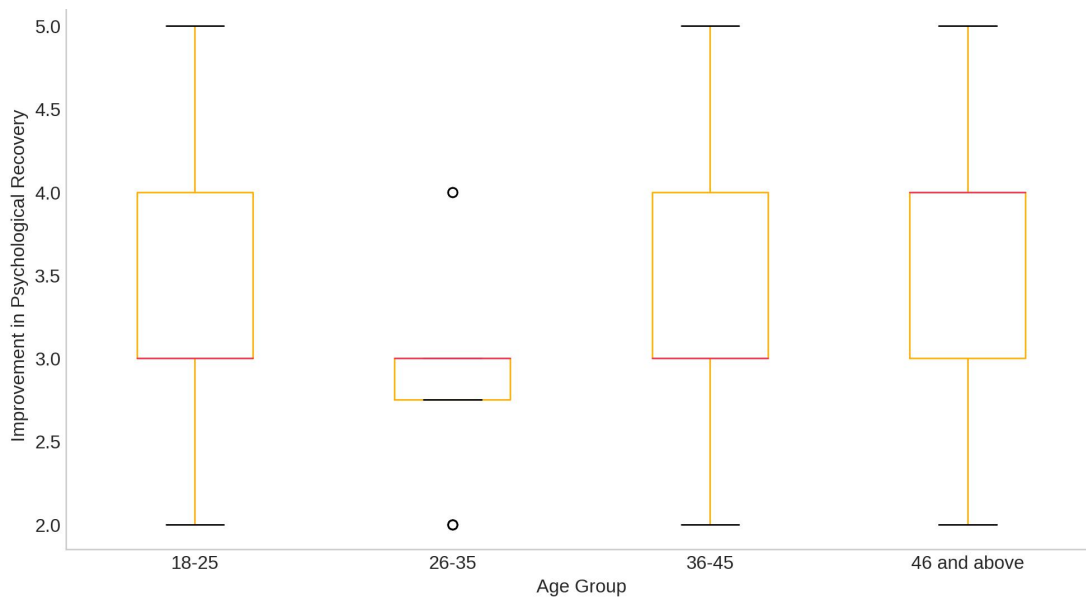


Figure 1 Psychological Recovery By Age Group

Hypothesis 1: The natural environment can relieve the psychological pressure of tourists

- correlation:0.708

- **P-value: 1.88e-16**

We found a significant positive correlation between the natural environment and the relief of tourist physical and mental exhaustion, with a correlation coefficient of 0.708 and a p-value much less than 0.05. This means that the natural environment is indeed able to significantly relieve tourist psychological stress, so hypothesis 1 is supported.

Hypothesis 2: Social activities will help to enhance the psychological recovery effects

- **correlation coefficient:-0.051**
- **P-value: 0.613**

The results showed that the correlation between social activity and psychological recovery effect was weak, with a correlation coefficient of -0.051 and a p-value greater than 0.05, indicating that there was no significant association between social activity and psychological recovery effect. Thus, hypothesis 2 is unsupported.

Hypothesis 3: Different types of tourists have different perception of psychological recovery

- **F statistics:3.826**
- **P-value: 0.012**

ANOVA analysis showed that the difference in psychological recovery perception was statistically significant, with a p-value less than 0.05. This

suggests that there are indeed differences in the perception of psychological recovery effect between age groups, and therefore hypothesis 3 is supported.

Sum up:

- Hypotheses 1 and 3 are significantly supported.
- Hypothesis 2 is not supported.

Conclusions

The present study explored the role of rural tourism in enhancing psychological recovery among tourists, focusing on three primary hypotheses: the impact of natural environments on stress relief, the influence of social interactions on psychological recovery, and the differences in recovery perceptions across different types of tourists, specifically age groups. Through a quantitative survey and rigorous statistical analysis, including Pearson correlations and ANOVA testing, we were able to validate two out of the three hypotheses, offering valuable insights into how rural tourism can contribute to mental well-being and identifying areas for future research and practical implications.

First and foremost, Hypothesis 1, which proposed that natural environments in rural tourism settings can alleviate tourist stress, was strongly supported. The analysis revealed a significant positive correlation between exposure to natural landscapes and tourists' relief from physical

and mental fatigue. This finding is consistent with the Attention Restoration Theory (ART), which posits that natural settings, through their capacity to engage "soft fascination," provide a restorative experience that aids in the recovery of cognitive functions and emotional well-being. The natural elements of rural tourism, such as forests, mountains, and open spaces, offer an escape from the overstimulation of urban life, allowing tourists to disconnect from stressors and rejuvenate. These results suggest that the incorporation of natural environments in rural tourism should be emphasized in both tourism development and marketing strategies, highlighting the healing potential of nature-based experiences.

However, Hypothesis 2, which suggested that social interactions during rural tourism would enhance psychological recovery, was not supported by the data. The correlation between social interaction and the perceived improvement in psychological recovery was weak and statistically insignificant. This finding challenges previous assumptions that social support and interaction, as proposed by the Social Support Theory, are universally beneficial for psychological recovery in tourism contexts. One possible explanation could be that tourists primarily seek solitude or a retreat from social obligations during rural tourism experiences, preferring individual or small group relaxation over active social engagement. This indicates that while social activities may be essential in some tourism settings, such as urban or festival tourism, rural tourism may serve a different

psychological need—solitude, reflection, and peace. Further research is needed to investigate the role of social interaction in various types of rural tourism and how specific social contexts, such as interactions with local communities or fellow travelers, may influence mental recovery.

Hypothesis 3, which examined differences in psychological recovery perceptions across different age groups, was supported. The analysis demonstrated significant differences in recovery scores among age groups, with tourists aged 26-35 reporting the highest levels of psychological recovery. This result suggests that individuals in this age group may be more receptive to the psychological benefits of rural tourism, possibly due to a greater need for stress relief during their typically busier and more demanding life phase. On the other hand, older and younger tourists reported lower levels of recovery, which may indicate that their expectations or needs differ when it comes to psychological recovery in a rural setting. For younger tourists, rural tourism may lack the excitement or social stimulation they seek, whereas older tourists might have different preferences regarding comfort or physical accessibility in rural areas. This finding underscores the importance of tailoring rural tourism experiences to meet the psychological needs of different age groups. Targeted marketing and the design of rural tourism experiences should consider these age-related preferences to maximize psychological benefits across diverse demographics.

In conclusion, this study underscores the significant psychological benefits that rural tourism can offer, particularly through the exposure to natural environments. While social interactions may not play as prominent a role in mental recovery as initially hypothesized, the differences observed across age groups suggest that rural tourism experiences need to be diversified and tailored to meet the varying needs of tourists. These findings have practical implications for tourism providers and policymakers, who should focus on developing rural tourism products that emphasize the healing power of nature while also considering the diverse preferences of tourists. By doing so, rural tourism can serve as an effective means of enhancing mental well-being and contributing to a healthier, more balanced lifestyle for individuals across different life stages.

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