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FACTORS INFLUENCING FRUIT FARMERS' WILLINGNESS TO ENGAGE IN RURAL TOURISM DEVELOPMENT WITHIN THE FRAMEWORK OF RURAL REVITALIZATION IN YINGKOU, CHINA

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Abstract:

Rural tourism has become an important pathway for promoting rural revitalization and narrowing the urban–rural development gap. Yingkou in Liaoning Province is a major fruit-producing area and an important rural tourism destination, making it a suitable setting for this study. This study aims to examine the factors influencing fruit farmers' willingness to engage in rural tourism development. Based on survey data collected from 275 fruit farmers in two villages and four towns in Bayuquan District, the study employs Structural Equation Modeling (SEM) for empirical analysis. The results show that perceived economic environment has a significant positive effect on participation willingness. Among its dimensions, expected economic benefits emerge as the strongest influencing factor. Perceived policy environment also significantly promotes farmers' willingness to participate. Although perceived living environment is positively associated with participation willingness, its effect is not statistically significant. These findings offer practical guidance for local governments and rural planners in designing targeted support policies to enhance farmers' participation in rural tourism.

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Environmental Perception; Fruit Farmers; Participation Willingness; Rural Tourism; Structural Equation Modeling

Introduction

The "Three Rural Issues"—agriculture, rural areas, and farmers—have long been a major concern in China. The report of the 19th National Congress of the Communist Party pointed out the imbalance between urban and rural development and the inadequate development of rural areas. Rural revitalization is therefore an important strategy for promoting rural development and narrowing the urban-rural gap. Rural tourism, as a key industry supporting rural revitalization, reflects the integration of tourism and agriculture. By making use of agricultural resources, rural tourism not only supports agricultural production but also creates attractions that combine leisure activities, sightseeing, and agricultural learning experiences. (Gil Arroyo et al., 2013).

The development of rural tourism not only brings economic benefits but also helps narrow the urban-rural divide. Although public services in rural areas—such as healthcare, education, and sanitation—have improved, gaps still remain compared with urban areas. These disparities have hindered the sustainable development of rural tourism. As key stakeholders in rural tourism development, rural residents significantly influence its quality through their participation and investment.

However, rapid urbanization and modernization have accelerated the outmigration of young and middle-aged rural residents, especially those with higher levels of education and skills, contributing to rural hollowing(Pei et al., 2024). This trend has created new challenges for the growth of rural tourism, and these challenges have become more evident in recent years. Therefore, the sustainable development of rural tourism requires not only strong policy support but also greater willingness among rural residents to participate, as well as measures to retain and attract talent to invest in rural tourism.

Rural tourism is a complex system, and farmers, as key participants, deserve more research attention. The outflow of young and middle-aged labor from rural areas, together with farmers' doubts about the future of rural development, may reduce their willingness to participate in rural initiatives. To encourage farmers to contribute to rural tourism development, it is important to understand their willingness to participate and their actual needs. Only in this way can farmers' role in rural tourism development be fully realized.

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Literature Review

Rural Tourism

In recent years, research on rural tourism, both in China and abroad, has mainly focused on several areas. First, studies have examined different participants in rural tourism, especially tourists. Researchers have explored the factors influencing tourists' engagement in sustainable practices in rural tourism settings (Zhao et al., 2024). Findings show that different aspects of rural intimacy significantly enhance tourists' perceived value and emotional connection to rural tourism experiences (Xuejing & Huamin, 2025). In addition, studies have investigated the determinants of waste sorting behavior among visitors at rural tourism sites (D. Zhong et al., 2024) and analyzed tourists' interests, willingness to pay, and profiles in relation to specific agritourism activities associated with extensive livestock farming (Ruiz Morales et al., 2024). Second, researchers have also paid attention to local residents as important developers of rural tourism. Studies have highlighted rural tourism operators' willingness to participate in carbon offset initiatives as an important issue (Song et al., 2024). Other studies have examined the participation of urban elderly people in rural summer health tourism, Zhang et al.(2024) emphasized the changing roles of rural homestay operators in the management and implementation of rural tourism (Wang et al., 2025).

Another line of research concerns different types of rural tourism. Li et al.(2024) argued that the integration of agriculture and tourism, together with ecotourism, represents an effective model for rural industrial development. Y.-P. Zhong et al.(2022) found that such integration can promote sustainable agricultural practices among farmers, reduce dishonest behavior, and encourage green production methods. In addition, Azharunnisa et al.(2022) explored ways to strengthen the connection between tourism and the economic activities of artisans who preserve Puri's cultural heritage, thereby attracting more tourists. Finally, existing studies have also examined the impacts of rural tourism. Considerable attention has been paid to the effects of tourism on low-carbon environments (Q. Zhou et al., 2024). Other studies have shown that tourism can significantly improve local socio-economic well-being and maintain strong development momentum (Zhu et al., 2024).

Factors Influencing Participation in Rural Tourism Development

Existing studies on the factors influencing willingness to develop rural tourism have mainly focused on several aspects. First, scholars have examined farmers' engagement in rural tourism from the household perspective. These studies have considered variables such as education level, age, household income, and the amount of land managed by the family (Tahir & Phambra, 2021).

Second, scholars have investigated the main stakeholder groups involved in rural tourism development in China from different perspectives. These groups include government agencies, farmers, owners of distinctive residential properties, tourism developers, and external investors (Y. Zhou & Lei, 2025). The relationships among these stakeholders involve both cooperation and conflict, and their actual participation behaviors can significantly influence the development of local rural tourism (Matyile & Ramukumba, 2025; Zielinski et al., 2020).

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Third, in terms of research methods, international scholars have used approaches such as SWOT analysis (Ngo et al., 2024) and cost‑benefit analysis (Azharunnisa et al., 2022) to identify the main factors affecting farmers' engagement in rural tourism. In contrast, domestic studies have mainly used binary logistic or logit models, often based on farmer survey data, to examine farmers' willingness to participate (He et al., 2022).

A review of the existing literature shows that research on farmers' willingness to participate in rural tourism remains limited, both in China and internationally. In addition, many studies focus on isolated factors rather than providing a comprehensive analysis of the influences on farmers' participation willingness. As a result, current understanding of the motivations behind farmers' engagement remains limited, and few studies have examined the interactions among different influencing factors. Moreover, most studies tend to adopt a social psychology perspective, while existing methods often overlook the subjective effects of potential variables on farmers' willingness to participate.

To address these gaps, this study focuses on Yingkou in Liaoning Province. Based on survey data collected in this area, the study employs Structural Equation Modeling (SEM) to analyze the factors influencing fruit farmers' willingness to participate. Specifically, it aims to identify the determinants of fruit farmers' participation willingness and explore ways to enhance their engagement in rural tourism. In doing so, the study seeks to provide recommendations for the high-quality and sustainable development of rural tourism in China.

Research Methodology

Theoretical Analysis and Research Hypothesis

Fruit farmers' willingness to engage in rural tourism development is influenced by their perceptions of the living, economic, and policy environments. Among these, the living environment is an important factor affecting whether farmers support and participate in rural tourism development. A clean, well-equipped, and socially cohesive living environment can enhance farmers' confidence in the viability of rural tourism. When farmers perceive the local climate as favourable and the community as supportive, they are more likely to engage in tourism initiatives (Wu, 2023). In addition, a positive social atmosphere can strengthen their sense of belonging and further encourage participation in rural tourism development (Wu, 2023). Therefore, the following hypothesis was formulated:

H1: Perception of living environment has a significant positive impact on fruit farmers' willingness to engage in rural tourism development.

Research shows that participation in rural tourism can significantly increase farmers' income. Some studies report that a 4%‑19% increase in income is a major factor motivating about 30% of farmers to provide accommodation for tourists (Fotiadis et al., 2019). This economic incentive is important because it not only creates additional sources of income but also contributes to rural revitalization. In addition, perceptions of the local economic environment play an important role in shaping farmers' willingness to participate. When farmers believe that the local economy is developing well and that they can benefit from tourism-related opportunities, they are more likely to engage in rural tourism initiatives (Calza et al., 2018).

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A favourable economic environment is therefore an important factor influencing farmers' willingness to participate in rural tourism. When farmers perceive opportunities for higher income and employment, they are more likely to invest in tourism-related activities. Studies have shown that when fruit farmers are satisfied with local economic conditions and expect financial benefits from tourism, their motivation to engage in rural tourism development becomes stronger. Rural tourism can also promote economic diversification and provide alternative sources of income for rural residents (Panić et al., 2024). Therefore, the following hypothesis was formulated:

H2: Perception of economic environment has a significant impact on fruit farmers' willingness to engage in rural tourism development.

In addition to economic factors, the policy environment also affects farmers' willingness to participate in rural tourism. Effective local policies and government support can increase farmers' confidence in participating in rural tourism. When farmers perceive support from government initiatives, such as financial subsidies and training programs, they are more likely to invest in tourism-related activities (B. Li et al., 2020). A supportive policy environment is therefore an important factor influencing farmers' willingness to participate in tourism activities. When farmers believe that the government is committed to promoting rural tourism through subsidies, training, and infrastructure development, their trust in these policies increases, which in turn makes them more likely to participate (Yu, 2022). Previous studies have also shown that farmers' perceptions of government effectiveness directly affect their willingness to engage in rural tourism (Yu, 2022). Therefore, the following hypothesis was formulated:

H3: Perception of policy environment has a significant impact on fruit farmers' willingness to engage in rural tourism development.

The development and implementation of rural tourism depend heavily on strong support from national and local government policies. Compared with grain farming, fruit farming involves higher risks, requires more careful management, and demands greater financial investment. If fruit farmers perceive strong government support during rural tourism development, such as financial assistance related to land, production, sales, and branding, their economic risks may be reduced, their sense of security may increase, and their willingness to participate may be strengthened.

However, not all farmers are equally willing to participate in rural tourism. Perceived risks, limited trust in government policies, and concerns about the sustainability of tourism practices may reduce their willingness to engage (Yi et al., 2022). Therefore, these barriers need to be addressed through targeted measures that highlight the benefits of rural tourism while protecting farmers' rights and interests. In this way, rural tourism can better support economic development and community revitalization.

In addition, the implementation of national and local policies is closely related to farmers' agricultural production, employment, entrepreneurship, and ecological protection. For fruit farmers, the quality of the local policy environment and the effectiveness of village committee cadres and local officials are especially important. If fruit farmers believe that policy support, such as subsidies, rewards, or loan concessions, can reduce their participation costs, and if the government provides high-quality services such as policy consultation and project approval,

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their trust in these policies will increase. Effective, fair, and efficient policy implementation by village committee cadres can further strengthen farmers' expected returns and willingness to engage in rural tourism development.

In summary, perceptions of the living environment, economic environment, and policy environment jointly shape fruit farmers' willingness to engage in rural tourism. Addressing these perceptions through targeted policies and community engagement can increase participation and support the sustainable development of rural tourism, benefiting both farmers and the broader rural economy. Based on the above discussion, this study constructs a structural relationship model linking perceptions of the living environment, economic environment, and policy environment with fruit farmers' willingness to engage in rural tourism development (Figure 1)

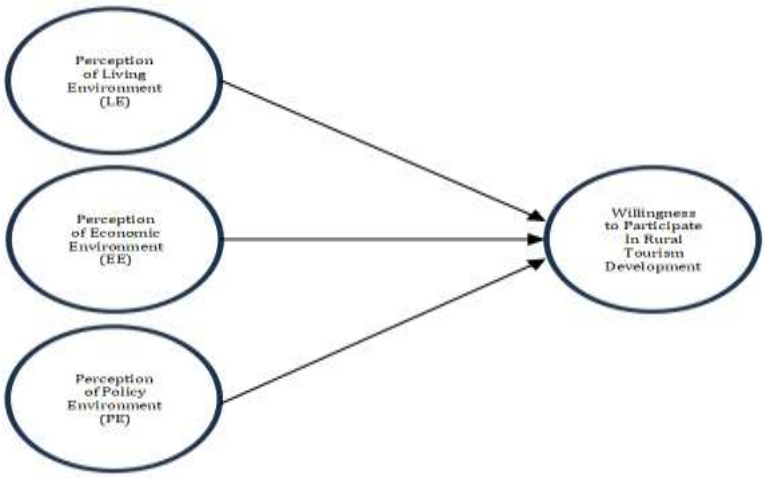

Figure 1: Structural Relationship Hypothesis Model
Source: Developed by the Authors

Overview of the Research Area

Yingkou City, known as the "Fruit City," produced 1.131 million tons of fruit in 2023, an increase of 5.1% over the previous year. The surrounding area is rich in agricultural and related products and has several geographical indication products. These advantages have supported the development of tourism-related industries and activities such as orchard picking, which attract many tourists (Nguyet Nguyen & Van Nguyen, 2026). In addition, Yingkou is included in the second batch of national key rural tourism villages. Therefore, selecting this area as the research site makes the study more relevant to local economic development and provides theoretical support for the further development of rural tourism.

Data Sources and Descriptive Statistics

The data utilized in this study were collected through field surveys conducted from January to March 2024 in Moshun Village, Datie Village, Xianghuangqi Village, and Longhua Village, all located in Xiongyue Town, Bayuquan District, Yingkou City, Liaoning Province. A random sampling approach was adopted, resulting in the distribution of 290 questionnaires. After filtering out invalid responses, a total of 275 valid questionnaires were retained for analysis.
As illustrated in Table 1, a significant portion of the fruit farmers surveyed, comprising 62.5% of the sample, are over the age of 40. Regarding educational attainment, the majority of respondents have completed education at the junior high school level or below, accounting for

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64% of the sample. Furthermore, most respondents reported an annual household income ranging from 20,000 to 50,000 yuan, and the majority have been involved in fruit farming for 15 years or more. This suggests that the agricultural income of fruit farmers has not increased in correlation with their years of farming experience, which aligns with the general conditions observed among fruit farmers in the surveyed area. The demographic information gathered from the sample accurately reflects the realities of the survey region, thereby enhancing the authenticity and reliability of the research findings.

Table 1: Descriptive Statistics of The Survey Sample

Item	Category	Frequency	Percentage (%)
Gender	Male	143	52
	Female	132	48
Age	30 years and below	77	28
	31 to 40 years	26	9.5
	41 to 50 years	105	38.2
	51 years and above	67	24.3
Years as a Grower	5 years and below	33	12
	6 to 15 years	37	13.5
	16 to 30 years	137	49.8
	31 years and above	68	24.7
Education Level	Junior high school and below	176	64
	High school	25	9.1
	College (Associate Degree) and above	74	26.9
Annual Household Income Last Year	Below 20,000 Yuan	75	27.3
	20,000 to 50,000 Yuan	121	44
	50,000 to 100,000 Yuan	55	20
	Above 100,000 Yuan	24	8.7

Source: Authors' Survey Data (2024)

The questionnaire includes four dimensions, with the willingness to engage in rural tourism development as the dependent variable. The independent variables are perception of living environment, perception of economic environment, and perception of policy environment. In total, there are 16 items. Table 2 provides the meanings and descriptive statistics of these variables.

Variable Setting and Model Selection

The Structural Equation Modeling, also known as the latent variable model, can analyze the structural relationships between latent variables and is useful for exploratory and hypothesis-driven research (Dash & Paul, 2021). To study the factors influencing fruit farmers' willingness to engage in rural tourism development, this study investigates the willingness to engage in rural tourism development as the dependent variable, with perception of living environment, perception of economic environment and perception of policy environment as independent variables (See Table 2). By constructing an SEM model, different paths will be explored to understand how different latent variables affect the latent dependent variable.

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Table 2: Variables and Descriptive Statistics

Variable Name	measurement Items	Mean	Standard Deviation
Perception of Living Environment (LE)	I am satisfied with the natural environment (LE1)	3.49	1.40
	I am satisfied with the community environment (LE2)	3.42	0.80
	I am satisfied with the infrastructure and convenience (LE3)	3.46	1.01
	I am satisfied with the environmental safety and health (LE4)	3.32	0.74
	I am satisfied with the rural tourism resource richness (LE5)	3.14	1.19
Perception of Economic Environment (EE)	I am satisfied with the market demand (EE1)	3.72	0.82
	I am satisfied with the rural tourism competitive environment (EE2)	3.65	0.79
	I am satisfied with the expected economic benefits (EE3)	3.51	0.88
	I am satisfied with the regional economic growth prospects (EE4)	3.72	0.83
Perception of Policy Environment (PE)	I am satisfied with the legal protection and rights (PE1)	3.32	1.11
	I am satisfied with the infrastructure construction and public service (PE2)	3.13	1.03
	I am satisfied with the village committee work execution guidance and innovation (PE3)	3.19	1.07
	I am satisfied with the level of government policy support (PE4)	3.20	1.07
Willingness to Participate (WP)	I am willing to contribute suggestions for rural tourism development (WP1)	2.70	0.91
	I am willing to stay locally and work in rural tourism (WP2)	2.54	0.89
	I am willing to engage in rural tourism development (WP3)	3.17	1.22

Note: 1 = Very dissatisfied; 2 = Dissatisfied; 3 = Neutral; 4 = Satisfied; 5 = Very satisfied.
Source: Analyzed by Amos 24.0

In the SEM model, the relationships between latent variables and latent dependent variables are described by measurement models, as shown in Formulas (1) and (2). Relationships between different latent variables are described by the Structural Equation Modeling, as shown in Formula (3).

$$X = \Lambda_X \eta + \delta \quad (1)$$

$$Y = \Lambda_Y \xi + \varepsilon \quad (2)$$

$$\xi = \beta\xi + \Gamma\eta + \zeta \quad (3)$$

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Where X is the vector of observed exogenous variables; Y is the vector of observed endogenous variables;η is the vector of exogenous latent variables.ξis the vector of endogenous latent variables. Λ_X and Λ_Y are the factor loading matrices.δand εare the measurement error terms. β is the matrix of relationships among endogenous latent variables.Γ is the matrix of effects of exogenous latent variables on endogenous latent variables. ζ is the structural error term.

Results

Reliability

To ensure the accuracy and scientific rigor of the analytical results, it is crucial to conduct reliability and validity assessments on the survey data prior to performing empirical analysis. Reliability is indicated by a higher Cronbach's α coefficient, which signifies reduced measurement errors. The criteria for evaluating reliability are presented in Table 3. In this study, SPSS 23.0 was employed to calculate the Cronbach's α coefficients for the 16 variables (as shown in Table 4). The coefficients ranged from a minimum of 0.776 to a maximum of 0.931. These results demonstrate that the questionnaire data exhibits a high level of consistency and stability.

Table 3: Reliability Level Evaluation Criteria

Cronbach's α	0.60-0.65	0.62-0.70	0.70-0.80	0.80-0.90
Reliability Test	Unreliable	Minimally Reliable	Moderately Reliable	Highly Reliable

Source: Analyzed by SPSS23.0

Table 4: Reliability Analysis

Variable Name	Sample Size	No. of Items	Cronbach's α Coefficient
Perception of Living Environment	275	5	0.776
Perception of Economic Environment	275	4	0.898
Perception of Policy Environment	275	4	0.931
Willingness to Engage in Rural Tourism Development	275	3	0.812

Source: Analyzed by SPSS23.0

Validity Test

Validity refers to the extent to which a measurement instrument accurately reflects the construct it is intended to measure. In this study, exploratory factor analysis was conducted using SPSS 23.0, and the results are presented in Table 5. The findings indicate that the data met the basic requirements for factor analysis.

The Kaiser-Meyer-Olkin (KMO) measure is used to assess sampling adequacy, while Bartlett's test of sphericity is used to examine whether the correlation matrix is significantly different from an identity matrix. In this study, the overall KMO value was 0.886, indicating that the sample was suitable for factor analysis. In addition, Bartlett's test of sphericity was significant ($\chi^2 = 1771.060$, df = 120, $p < 0.001$), which further supports the suitability of the data for

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factor analysis. The factor loadings of the observed variables ranged from 0.715 to 0.849, all of which exceeded the commonly accepted threshold of 0.50. These results suggest that the measurement items had acceptable construct validity (Cheung et al., 2024).

Table 5: KMO and Bartlett's Test

Dimensions	Kaiser-Meyer-Olkin Measure of Sampling Adequacy	
Perception of Living Environment	0.715	
Perception of Economic Environment	0.823	
Perception of Policy Environment	0.849	
Willingness to Engage in Rural Tourism Development	0.716	
Overall	0.886	
Bartlett's Test of Sphericity	χ^2	1771.060
	df	120
	Sig.	0.000

Source: Analyzed by SPSS23.0

Overall, the exploratory factor analysis provides support for the validity of the measurement instrument and offers an appropriate basis for subsequent analysis of the factors influencing fruit farmers' willingness to engage in rural tourism development (Nyarugwe & Jespersen, 2024).

Analysis of the Structural Model Fit

Using Amos 24.0 software, the results of the Structural Equation Modeling are illustrated in Figure 2. The significance of the path coefficients was first examined. As shown in Table 6, the path relationship between perception of living environment and willingness to participate is not significant. However, based on existing theoretical analyses, there is a certain correlation between the two, so this path should not be discarded solely based on the results and should be retained.

After the initial estimation of model path coefficients, fit indices were used to compare the model's overall and component-level fit to determine if the model adequately fits the data and if the parameter estimates are valid and reasonable.

Table 6: Path Coefficient Estimates

Paths	Estimate	S.E.	C.R.	P
Policy Environment → Economic Environment	0.123	0.053	2.323	0.020*
Living Environment → Willingness to Participate	0.147	0.130	0.746	0.456
Economic Environment → Willingness to Participate	0.647	0.136	4.743	0.0015***
Policy Environment → Willingness to Participate	0.352	0.108	3.829	0.0008***

Note:*,**, *** indicate that P is significant at the 0.05, 0.01, and 0.001 levels, respectively
Source: Analyzed by Amos 24.0

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As shown in Table 7, the fit of the initial model was not ideal, indicating that the initial model required modification. Model modification involves only local adjustments to the original theoretical model and does not affect the overall layout of the initial model. Instead, the revised model is expected to be more reasonable and precise.

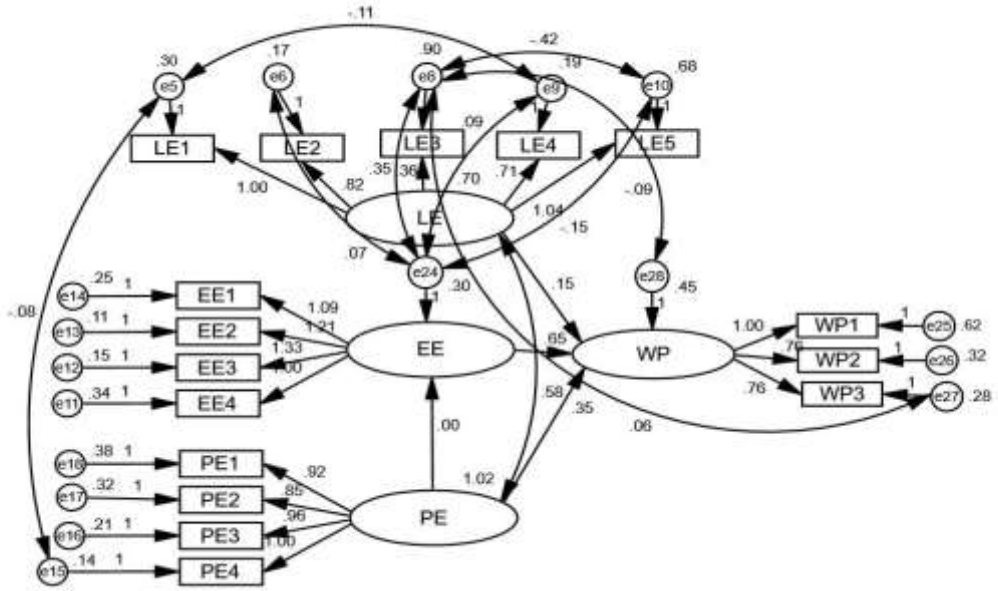

Figure 2: Parameter Estimates of the Structural Equation Modeling

Note: Perception of Living Environment = LE, Perception of Economic Environment = EE, Perception of Policy Environment = PE and Willingness to Engage in Rural Tourism Development = WP.
Source: Analyzed by Amos 24.0

Based on theoretical considerations and the modification indices (MI) provided by Amos 24.0, the initial model was revised in order to achieve model fit. The fit indices of the modified model are shown in Table 7, with all indicators meeting the required standards, indicating that the revised model is more consistent with the actual data. The parameter estimates of the revised Structural Equation Modeling are illustrated in Figure 3.

Table 7: Goodness-of-Fit Indices Before and After Model Modification

Statistics index	Absolute fitness statistical index					Value-added fitness statistical indicators			
	$\chi 2/df$	RMSEA	GFI	RMR	AGFI	NFI	IFI	TLI	CFI
Recommended Value	1-3	≤0.05	≧0.9	≤0.05	≧0.9	≧0.9			
Before Modification	2.351	0.096	0.856	0.081	0.792	0.857	0.913	0.887	0.911
After Modification	2.604	0.027	0.938	0.044	0.887	0.946	0.995	0.991	0.994

Source: Analyzed by Amos 24.0

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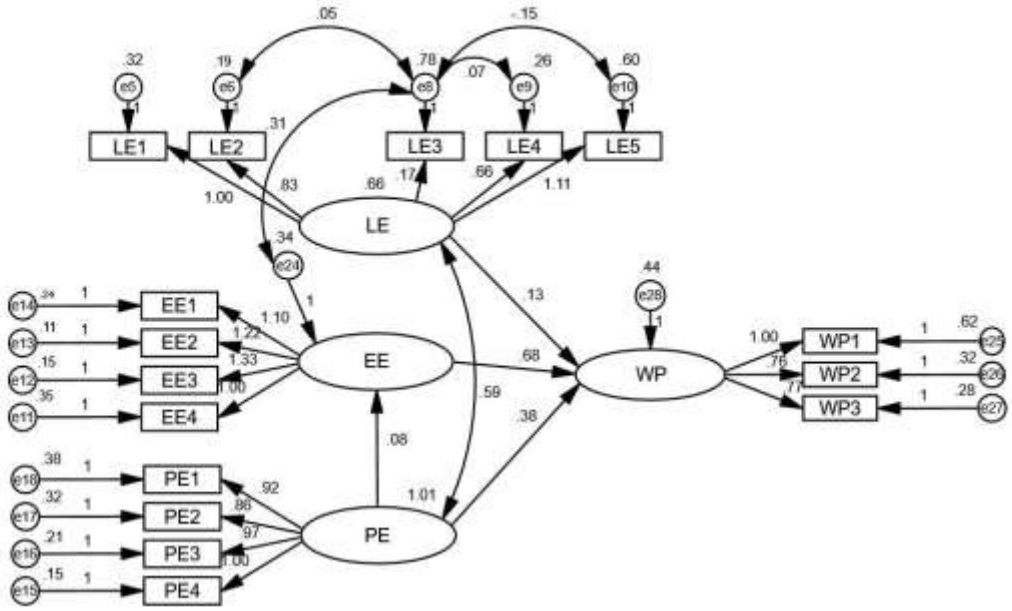

Figure 3: Parameter Estimates of the Revised Structural Equation Modeling

Note: Perception of Living Environment = LE, Perception of Economic Environment = EE, Perception of Policy Environment = PE and Willingness to Engage in Rural Tourism Development = WP

Source: Analyzed by Amos 24.0

Table 8: Ranking of Latent Variables by Total Effect on Willingness to Engage in Rural Tourism Development

Indicator	Factor Loading	Latent Variable	Total Effect	Rank
EE3	1.33	Perception of	0.68	1
EE2	1.22	Economic		
EE1	1.10	Environment		
EE4	1.00			
PE4	1.00	Perception of	0.43	2
PE3	0.97	Policy		
PE1	0.92	Environment		
PE2	0.86			
LE5	1.11		0.13	3
LE2	0.83	Perception of		
LE1	1.00	Living		
LE4	0.66	Environment		
LE3	0.66			

Source: Analyzed by Amos 24.0

Analysis of the Modified Model and Results

Table 8 shows the results of the effect ranking, with the effect analysis. Through the fitting and modification of the initial Structural Equation Modeling, the results obtained largely support the hypotheses proposed in this study. Although the impact of perception of living environment on fruit farmers' willingness to engage in rural tourism development is not significant,

theoretically, the perception of living environment has a positive effect on willingness to participate.

The modified model can reveal the factors affecting farmers' willingness to engage in rural tourism development and their mechanisms. In terms of impact effects, in this study, the total effect of perception of policy environment (PE) on fruit farmer's willingness to engage in rural tourism development (WP) is equal to the direct effect of the perception of policy environment (PE) on fruit farmer's willingness to engage in rural tourism development (WP) (0.38) plus the product of the effect of policy environment perception through economic environment perception on willingness to participate (0.08) and the effect of economic environment perception on willingness to participate (0.68), i.e., 0.38 + 0.08 * 0.68 = 0.43.

Perception of Living Environment

According to Figure 3, the dimension of perception of living environment (LE) has a positive but not significant correlation with the fruit farmers' willingness to engage in rural tourism development (WP). The direct effect is 0.13, indicating that for every one-unit increase in farmers' "Perception of Living Environment," their "Willingness to Participate" increases by 0.13 units. This matches the model fit results in Table 5, where this path is not significant. This suggests that the impact of "Living Environment Perception" on farmers' willingness to participate in rural revitalization is very weak.

The reasons might include the following. First, improvement in living conditions may be a long-term process, and farmers might not pay much attention to it. They may focus more on factors that provide immediate benefits, such as income increases or policy support. Therefore, even if living conditions improve, it may not significantly increase their willingness to participate. Second, most surveyed farmers have lived in the area for over ten years and have established fixed perceptions and lifestyles regarding the local environment. Even if living conditions improve, this change may not be seen as a significant factor, and there may be no notable satisfaction or dissatisfaction. Third, compared to the economic environment, the quality and convenience of living conditions might seem less important. Moreover, for farmers who frequently work away from home, urban living conditions are perceived as better than rural conditions, making direct comparisons less relevant.

Perception of Economic Environment

The dimension of perception of economic environment has a direct impact on the willingness to engage in rural tourism development. Among the four dimensions, it ranks first with a direct effect of 0.68, indicating that for every one-unit increase in the perception of economic environment, the willingness to participate increases by 0.68 units. Among the four observed variables of the perception of economic environment, satisfaction with economic benefit expectations has the highest path coefficient and the most significant impact. This suggests that economic benefits are the primary goal for farmers participating in rural tourism development. Compared to other factors, economic benefits (EE3) are directly related to farmers' livelihoods, thus this factor is given higher priority. The next variables are satisfaction with the rural tourism competition environment (EE2), market demand (EE1), and regional economic growth prospects (EE4). If the current rural tourism market has enough space and opportunities, a stable competitive environment, more collaborative rural tourism projects with other farmers or the tourism industry, and high market demand will boost farmers' confidence in participating

in rural tourism development. Although satisfaction with regional economic growth prospects has a relatively weaker impact, it should not be overlooked. Overall regional economic growth signals more future opportunities for rural tourism development, and the higher farmers' satisfaction with regional economic growth prospects, the higher their willingness to engage in rural tourism development.

Perception of Policy Environment

The total effect of the perception of policy environment dimension on fruit farmers' willingness to engage in rural tourism development is 0.43. For every one-unit increase in policy environment perception, farmers' perception of economic environment increases by 0.43 units. Among the four observed variables of perception of policy environment, satisfaction with government policy support (PE4) has the highest path coefficient. If the government provides strong and effective support in areas such as funding, infrastructure, tax incentives, and technical training, farmers will have more confidence in participating in rural tourism development.

Next are satisfaction with village committee work execution and innovation capability (PE3), satisfaction with legal protection and rights (PE1), and satisfaction with infrastructure construction and public services (PE2). The village committee, being the grassroots organization closest to the farmers, is responsible for policy implementation and specific guidance, thus farmers trust and rely more on this grassroots leadership.

Additionally, if farmers are satisfied with legal protection and rights, it indicates that their rights are protected during rural tourism development, especially concerning land use rights and economic benefit distribution. This increases their willingness to participate. While infrastructure construction may not show significant short-term improvements, if farmers are satisfied with infrastructure construction and public services, they will perceive that the village has the basic conditions for tourism development, reducing perceived risks and increasing their willingness to participate.

Conclusion and Recommendations

Conclusion

The perception of economic environment dimension significantly enhances fruit farmers' willingness to engage in rural tourism development. Specifically, satisfaction with economic benefits (EE3) is the most influential factor. Farmers generally view economic benefits as the main goal of engaging in rural tourism, as it directly affects their livelihoods. Thus, improving the economic environment, particularly by enhancing expectations of economic returns, will greatly increase their enthusiasm for participation.

The perception of policy environment dimension has a significant positive impact on farmers' participation in rural tourism development. Satisfaction with legal protection and rights safeguards is directly related to the protection of key rights such as farmers' land use rights and the distribution of economic benefits, which enhances their sense of security and willingness to participate. Satisfaction with infrastructure construction and public services ensures that the countryside has the basic conditions for developing tourism, making farmers perceive lower risks in participating, thereby increasing their willingness to join.

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Satisfaction with the village committee's execution and innovation capacity reflects the grassroots organization's capability and trustworthiness; the higher the farmers' trust in it, the more their participation enthusiasm will increase. Meanwhile, satisfaction with the government's support in areas like funding, infrastructure, tax incentives, and technical training provides strong assurance to farmers, greatly boosting their confidence in participating in rural tourism development.

On the other hand, the perception of living environment dimension shows a positive but insignificant correlation with farmers' participation in rural tourism development. However, research reveals that farmers still pay significant attention to the quality of public services like healthcare and education in their daily lives. Education quality, in particular, is a key reason many households move to cities, hoping their children will receive better schooling.

Recommendations

Strengthen Benefit Protection for Farmers in Rural Tourism Development

Establish clear benefit-sharing mechanisms, stable market channels, and detailed analyses of economic returns to strengthen farmers' confidence in rural tourism development. Local governments and relevant departments should increase the promotion of local rural tourism through various media channels and promotional activities to raise awareness and attract more tourists. Online platforms, tourism exhibitions, and social media can also be used to expand market demand. In addition, farmers should be encouraged to develop diverse tourism products based on local features and resources, avoid market homogenization, and provide distinctive tourism experiences for different groups of visitors. This can enhance market attractiveness, competitiveness, and farmers' income expectations.

Strengthen Policy Support and Guidance for Rural Tourism Development

The government should provide stronger financial support, infrastructure investment, tax incentives, and technical training during rural tourism development to improve farmers' perceptions of the policy environment and further increase their willingness to participate. At the same time, the execution and guidance capacity of village committees should be strengthened to ensure effective policy implementation, encourage innovation in rural tourism development, and provide more targeted support and guidance. Farmers should also receive adequate legal protection during rural tourism development, especially with regard to land use rights and benefit distribution, so as to enhance their sense of security and willingness to participate.

Improve Infrastructure and Public Services

Continued investment in rural infrastructure, such as roads, communication, and electricity, is needed to improve the accessibility and attractiveness of rural tourism. Public services should also be improved to enhance farmers' quality of life and indirectly increase their willingness to engage in rural tourism development. In particular, improvements in education, healthcare, and cultural services can help improve the living environment and well-being of farmers, making them more willing to remain in rural areas and engage in tourism development.

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Ethics Statement: This study involved a questionnaire survey of fruit farmers. Participation was voluntary, and informed consent was obtained from all respondents. The survey was conducted anonymously, and the data were used only for academic research purposes.

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