Developing An Environmental Management Program Model In Rural Tourism Of Khorasan Razavi Province Based On Sustainable Development

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ABSTRACT
Providing a strategic planning and management framework and strategic recommendations can enable tourism destinations and communities, especially rural tourism, to introduce critical success factors and major environmental influencing forces in the tourism planning process in a coherent, coordinated, and balanced manner. Some countries and private sectors do not have sufficient experience in developing the rural tourism industry. Therefore, planning can provide the necessary solutions for their development. Appropriate strategic planning can meet the basic goals of sustainable rural development and contribute significantly to economic growth and improving the quality of life of residents of tourist areas, and ultimately achieving national development. In the present study, two categories of fundamental and applied research were conducted, which is applied in terms of research objective and descriptive and survey-type research in terms of data collection, which was considered logical. Two library and field methods were used to collect information. In addition, a sample was selected from tourism experts and experts and from the indigenous residents of the host community. A total of 59 villages were identified as having tourism capacity and potential in terms of cultural heritage, considering that the population of the villages under study is approximately 838,981 males and 843,424 females, totaling 1,682,405 people. A total of 384 people were selected as a sample using the Cochran formula, and considering this number, the sampling method used was a cluster. In this method, the study area (Khorasan Razavi Province) was divided into clusters of north, south, east, west, and center, and 2 areas were selected as samples from each cluster, and the research tool was randomly implemented in those locations. In the reliability of the questionnaire, the external model reliability test was used at the applied level with four indices: Cronbach's alpha, composite reliability or Delvin-Goldstein P, RHO_A reliability or Spearman's internal correlation, and shared reliability. The validity of the questionnaire content was confirmed by expert professors in this field. All proposed hypotheses were confirmed and statistical analysis was performed using SPSS version 19 software and the structural model method with PLS software, and finally, the strategic planning model for rural tourism management in Khorasan Razavi province based on sustainable development was developed.

Keywords: Strategic planning, Environmental management, Tourism, Rural tourism, Sustainable development.

INTRODUCTION

In recent decades, tourism has increasingly garnered the attention of economic actors in Iran. As a global system, the tourism industry accounts for a significant portion of the world's gross domestic product. For a region to succeed in tourism, it must be sustainable in economic, social, and environmental terms. Achieving such sustainability requires careful planning and management that considers various factors.

Despite the importance of this issue, research on strategic management and planning in tourism—especially rural tourism, which constitutes a specific form of tourism—remains limited in Iran. Conducting studies and research within a strategic planning framework can significantly improve the competitive positioning and sustainable development of rural tourism destinations. Khorasan Razavi Province, with its historical, religious, and natural heritage, along with its climatic diversity and ecological richness, serves as a favorable platform for attracting both domestic and international tourists. In the past, tourism planning was often perceived as a straightforward process limited to building hotels, providing accommodations, improving access routes, and promoting destinations. However, as tourism development without proper planning began to result in negative social and environmental impacts, the focus shifted to controlled and strategic methods (Inskeep, 1991). Success in tourism requires planning at all levels. Global experience has shown that proper tourism planning can bring benefits without causing large-scale problems. These well-planned regions generally avoid adverse social and environmental consequences, which are often detrimental to residents and unpleasant for the majority of tourists (UNWTO, 2011).

Theoretical Framework

Tourism:

Tourism encompasses all activities occurring during a traveler's journey, including planning, travel, arrival at the destination, accommodation, return, and even reminiscing. These activities include shopping, interactions between hosts and guests, and any other actions taken during the trip (Mill & Morrison, 1992).

Rural Tourism:

According to the Global Seminar on Rural Tourism, this form of tourism involves enjoying amenities and services in rural areas, accessing local natural resources and landscapes, and engaging in rural life experiences. Rural tourism presents an opportunity for comprehensive development, including economic, social, and environmental dimensions.

Sustainable Rural Development:

This approach integrates efficiency, equity, and sustainability. Efficiency ensures optimal use of resources; equity seeks to reduce poverty and bridge the gap between rich and poor; and sustainability ensures the preservation of environmental resources to secure future livelihoods (Karimzadeh, 2016).

Strategic Planning:

Traditional planning often lacks the flexibility to adapt to environmental changes. In contrast, strategic planning emerged as a response to this limitation. Unlike classical planning which focuses on setting goals and action plans, strategic planning emphasizes the formulation and development of strategies to adapt to changing conditions and guide organizational behavior accordingly.

Environmental Management and Tourism Facilities

Human misuse and poor land management practices have gradually reduced the capacity of natural environments to support tourism. In this context, sustainable tourism development is regarded as a comprehensive resource management approach that addresses economic and social needs while enhancing cultural homogeneity and protective systems, promoting justice, improving community quality of life, and elevating environmental quality. Improving environmental management and tourism facilities is a crucial first step toward achieving sustainable tourism. Among the key indicators of sustainable tourism are environmental metrics such as energy management, waste disposal, and others that reflect the region's environmental status and objectives. These indicators are interconnected and, in combination, affect the entire tourism system (Azizpour Fard & Ghobadi Aliabadi, 2013).

Sustainable Tourism

Sustainable tourism considers the full range of experiences and impacts of tourism, including economic, social, and environmental concerns. It also focuses on enhancing visitor experiences and meeting host communities' needs (UNWTO, 2020). It must address environmental protection, social equity, quality of life, cultural diversity, and a dynamic economy that provides jobs and well-being for all. Tourism development organizations promote sustainable tourism practices to mitigate tourism's increasing negative impacts, such as environmental degradation.

Sustainable Development

In its broadest sense, sustainable development refers to the efficient and effective use of fundamental resources—natural, financial, and human—to achieve optimal consumption patterns. This involves the application of appropriate technologies, structures, and institutions to meet the ongoing and future needs of present and future generations. Key areas include environmental education, incentives for clean energy production, legal frameworks, and support for environmental NGOs—all of which are vital to

protecting the environment and advancing urban and rural sustainability (Khoshbin et al., 2021).

Research Hypotheses

1. Rural tourism in Khorasan Razavi Province is sustainable.
2. Economic factors play a more significant role in the sustainability of rural tourism in the studied area than other criteria.
3. There is a significant and positive relationship between international tourist security and event-based tourism and environmental protection in the region.
4. There is a significant and positive relationship between tourists' travel motivations and villagers' adherence to local, national, and religious customs.

Tourism in Khorasan Razavi Province

Khorasan Razavi, located in northeastern Iran, spans over 118,000 square kilometers, between 33°52′ to 37°42′ N and 56°19′ to 61°16′ E. According to the 2011 national census, the province had a population of 5,994,402, including 1,982,405 rural residents across 28 counties and over 3,000 inhabited villages (Statistical Center of Iran, 2011). In 2013, the Cultural Heritage and Tourism Organization identified 59 rural villages in the province with high natural, historical, and cultural tourism potential. Field studies indicate that these villages possess the necessary attributes to support tourism, particularly ecotourism.

Table 1: SWOT analysis of rural tourism capabilities in Khorasan Razavi Province

Principles of Rural Tourism	Strengths	Weaknesses
Attractions	- Favorable climatic conditions - Diverse tourism attractions - Varied geographical landscapes - Interweaving of natural and cultural attractions with traditional lifestyles - Unique landscapes suitable for creating tourism hubs in the province	- Land-use change of some orchards due to recent migration - Improper management of pastures regarding permitted and unpermitted grazing - Environmental threats and damage to historical, cultural, and natural heritage - Lack of continuous management of tourism attractions in the region - Unclear main authority responsible for rural tourism attractions in the area
Accessibility	- Availability of suitable access roads - Some villages located along main roads with potential for establishing local markets - Suitable rural areas in terms of access density - Moderate to high coverage with a 63% compactness index in the region	- Lack of suitable transportation from urban centers to tourist destinations - Traffic congestion and absence of local terminals in the region
Infrastructure and Facilities	- Availability of essential infrastructure such as electricity and telephone in most studied villages - Presence of basic medical facilities, especially health houses in villages - Region's potential for investment and tourism planning by the public sector	- Lack of adequate infrastructure such as water and gas - Neglect of village nature in terms of income generation and job creation - Shortage and inefficiency of some communication networks in rural areas
Hospitality Services	- Potential for accommodation and catering services within a functional radius - Natural capabilities for providing recreational services - Availability of handicrafts for sale in local tourism markets	- Lack of roadside services- Absence of proper cultural and recreational services in villages - Shortage of commercial services in rural areas - Lack of local markets in terms of space, architecture, quantity, and quality of goods offered
Institutional and Organizational Elements	- Increased income and living standards due to tourist expenditures in the region - Increased taxes and resources available to the government - Continuity of economic activities	- Lack of integration between organizations and companies involved in tourism in the province - Lack of proper advertising and marketing for rural tourism in the

	throughout the year	region - Absence of statistics on the number of tourists and their classification based on markets - Shortage of specialized human resources in the tourism sector
Attractions	- Possibility to integrate tourism attractions with agricultural capacities- Suitable context for adding man-made attractions - Preservation and dissemination of local culture in rural areas - Attractive natural landscapes due to diverse and scenic topography with natural tourism potential - Presence of multiple urban centers regionally as potential rural tourism markets	- Unsustainable tourism (unplanned management) may lead to ecosystem degradation (damage to animals, habitats, and vegetation) - Mismanagement of natural resources - Existence of competing routes adjacent to the region - Lack of proper marketing and inadequate attraction presentation
Accessibility	- Potential for forming small cooperatives for transporting tourists to rural destinations- Employment generation through organizing and developing rural tourism transportation - Presence of potential spots along the route for building terminals, restaurants, road services, etc.	- Lack of road advertisements near tourist routes - Congestion and traffic due to the high volume of tourists - Lack of organized transport for moving tourists
Infrastructure and Facilities	- Presence of private investors along with banking facilities and economic policy stability - Local villagers benefit from infrastructure development - Improved quality of life for rural residents	- Absence of supportive and incentive regulations for private sector investment in infrastructure - Encroachment on local cultural limitations and excessive congestion in traditional areas
Hospitality Services	- High hospitality potential in culture and customs, especially in bed and breakfast services - Formation of multifunctional rural tourism cooperatives for providing hospitality services	- Formation of non-local ownership - Improper allocation of governmental resources and budgets in the tourism sector - Excessive dependence of the region on tourism and one-dimensionalization of economic activities
Institutional and Organizational Elements	- Possibility of forming small local social groups with an impact - New socio-economic opportunities that reduce social inequalities - Development impacts of tourism on regional development- Creating a suitable foundation for rural development through tourism expansion	- Increased commercialization and financial gain motives, leading to negative economic competition - Capital outflow from the region and increased dependency on imported goods and services - Slow return on investment in some tourism-related activities
Source of Table 1: Kadivar, Ali Asghar, Quarterly Journal of Village and Development, Year 20, Spring 2017, Issue 14:1		

List of National Heritage Sites of Khorasan Razavi Province

As of 2018, about one thousand four hundred and seven national heritage sites have been registered in Khorasan Razavi Province. The Shrine of Imam Reza (PBUH) is the most prominent registered national site in this province, attracting millions of pilgrims to Mashhad annually. The word “Razavi” in the province's name also refers to this shrine. The Qasabeh Qanat is the deepest qanat among 11 qanats registered as Iranian qanats in the UNESCO World Heritage List, located in this province. The Shrine of Imam Reza (PBUH), the cultural landscape of Tous, the historical city of Zozan, the Khanqah and tomb of Sheikh Ahmad Jam, the Seljuk and Ghaznavid axis of Khorasan including structures such as Rabat Mahi, Rabat Sharaf, Sang Bast, and Baba Loqman mausoleum are also among the province's sites listed on the tentative UNESCO World Heritage List. The windmills of Nashtifan and caravanserais of Sharaf, Mahi, Sharifabad, Sang, Fakhr Davood, Ghadamgah, Sang Kalidar, Zafaraniyeh, Mehr, and Mazinan, jointly with windmills or caravanserais of other provinces in Iran, are also on the UNESCO

tentative list.

Statistical Population

The statistical population of this research includes the host community and experts and specialists in the tourism sector in both public and private sectors (tourism industry).

Sample Population

The sample population consists of 15 experts and specialists from the public and private tourism sectors as well as 384 individuals from the host community and rural tourists.

Sampling Method

Sample selection among tourism experts and specialists was conducted considering the small number of responsive officials in the Khorasan Razavi Cultural Heritage and Tourism Department and in cities such as Sabzevar, Neyshabur, Mashhad, etc. Fifteen questionnaires were allocated to collect information from them and academic experts in this field.

Sample selection among the host community:

Information was gathered regarding indigenous residents of Khorasan Razavi and villagers in rural tourist areas. Fifty-nine villages were identified as culturally and tourism-wise capable. Considering the total population of the studied villages was approximately 838,981 men and 843,424 women, totaling 1,682,405 people, 384 individuals were selected as the sample using the Cochran formula. Given this number, a cluster sampling method was used. The study area (Khorasan Razavi Province) was divided into northern, southern, eastern, western, and central clusters. From each cluster, two regions were selected as samples, and the research tool was randomly administered there.

Research Method

The present research can be categorized into fundamental and applied research. In terms of research goal, it is applied research, and regarding data collection, it is a descriptive and survey-based study conducted logically. Applied research generally uses fundamental research results to improve and perfect behaviors, methods, production tools, structures, and models used in human societies.

Library Study Phase

Data collection was done through library and field methods. In the library method, various Persian and English articles related to strategic planning, data from the Iranian Statistical Center, data from the Cultural Heritage, Handicrafts, and Tourism Organization of Khorasan Razavi Province, university libraries, and research centers' articles were reviewed.

Field Study Phase

The field phase included field observations and various interviews with tourism experts and university elites. Visits to tourist-attractive villages of the province and supplementary observations led to the preparation of a questionnaire distributed among experts, specialists, and host and guest communities in target villages. Some of the research information needed to achieve the objectives and answer the research questions required questionnaire completion. Therefore, the researcher prepared a questionnaire based on the Delphi method and strategic planning, considering the research goals and hypotheses. The data obtained from the questionnaires were analyzed using SPSS, Microsoft Excel, and PLS software.

Rural Statistics of Khorasan Razavi Province (Source: Iran Rural Network Rostanet.ir)

Table 2: Villages with Population Over 1000 Households

1000+ households	400-999	200-399	100-199	50-99	20-49	10-19	5-9	1-4 households	Total
46	244	422	561	620	631	249	182	380	3335

Table 3: Number of inhabited villages by population

5000+	2000-4999	1000-1999	500-999	250-499	100-249	50-99	25-49	1-24	Total
13	145	300	501	597	597	351	219	479	3352

Table 4: Number of Residents and Households in Rural Areas by Gender and Age Groups

Women 65+	Women 15-	Women 0-14	Total Women	Men 65+	Men 15-64	Men 0-14	Total Men	Total Population	Households

	64								
60,488	551,805	231,131	843,424	62,109	543,367	242,505	838,981	1,682,405	47,471

Table 5: Population 6 Years and Older, Literate, and Enrolled in Rural Areas

Enrolled Population (Women)	**Enrolled Population (Men)**	**Enrolled Population (Total)**	**Literate Population (Women)**	**Literate Population (Men)**	**Literate Population (Total)**	**Population 6+ (Women)**	**Population 6+ (Men)**	**Population 6+ (Total)**
144,405	15,434	309,479	538,345	603,199	1,141,544	742,758	733,414	1,476,172

Table 6: Population 10 Years and Older, Employed and Unemployed in Rural Areas

Unemployed (Women)	**Unemployed (Men)**	**Unemployed (Total)**	**Employed (Women)**	**Employed (Men)**	**Employed (Total)**	**Population 10+ (Women)**	**Population 10+ (Men)**	**Population 10+ (Total)**
7,006	35,693	42,700	68,171	453,474	521,645	683,988	671,302	1,355,290

Table 7: Villages by Natural Condition

Unknown	**Forest in Mountains or Hills**	**Mountainous, Hill, or Ridge**	**Forest on Plain**	**Plain**
0	2	3148	9	4200

Table 8: Number of villages by road type

Asphalt road	**Shuse road (gravel)**	**Dirt road**	**Drovers' road**	**Unknown**	**Railway (station)**	**Waterway**
2130	675	530	0	0	11	**0**

Table 9: Number of populated villages by educational facilities

Village Kindergarten	**Elementary School**	**Boys' Night Middle School**	**Girls' Boarding Middle School**	**Boys' Middle School**	**Girls' Middle School**	**Co-educational middle school**
590	2686	38	25	785	744	**564**

Boys' Boarding High School	Girls' Boarding High School	Theoretical Boys' High School	Theoretical Girls' High School	Boys' High School for Labor and Knowledge	Girls' High School for Work and Knowledge	Boys' Technical and Vocational School	**Girls' Technical and Vocational Conservatory**
34	23	195	183	22	15	19	**11**

Table 10: Number of inhabited villages by cultural, religious, and sports facilities

Rural park	**Sports field**	**Public library**	**Gym**	**Mosque**	**Imamzadeh**	**Muslim religious**	**Religious places of**	**Seminary**	**Dar ul Quran**	**Resident Imam of Congregational**	**Alam's house**

						places	**other religions**			**Prayer**	
348	723	403	74	2823	384	733	13	163	0	520	**520**

Table 11: Number of inhabited villages according to political, administrative, and Hadi plan facilities

Islamic Village Council	**Villager**	**Police Force Club**	**Agricultural Jihad Service Center**	**Agricultural promoter**	**Dispute Resolution Council**	**Rural Cooperative Company**	**Hadi plan**		
							Yes	No	**Unspecified**
2528	2032	144	109	443	401	800	876	2461	**7**

Table 12: Number of inhabited villages by electricity, gas, and water facilities

Electricity				**Tap water**	
National Network	Diesel Electric Motor	New energy (solar, wind, etc.)	**Piped gas**	Has a water purification system	**Without a water purification system**
3204	23	3	671	1290	**1416**

Table 13: Number of inhabited villages by health and medical facilities

Public Bath	**Health and Medical Center**	**Pharmacy**	**Health House**	**Rural Health Base**	**Maternity Facility Center**	**Family doctor**	**Medicine**
1001	432	194	1456	190	48	490	**606**

Dentist or dental hygienist	Experimental Dentist or Dental Technician	Rural midwife	Health workers in the village	Veterinarian	Veterinary Technician	Radiology Laboratory	Laundry	**Garbage collection system**
55	23	565	2012	114	54	37	1271	**1327**

Table 14: Number of inhabited villages by commercial and service facilities

Fire station	**Kerosene sales agency**	**Gas cylinder distributor**	**Cooperative store**	**Grocer**	**Bakery**	**Butcher shop**	**Coffee house**	**Bank**	**Agricultural machinery repair shop**	**Non-agricultural machinery**	**Gas station**
36	1157	485	724	2114	1207	480	91	267	205	291	**61**

Table 15: Number of Inhabited Villages Based on Communications and Transportation Access

Type of Access	**Number of Villages**

Access to Railway Station	151
Access to Public Transportation	1977
Access to Newspapers and Magazines	197
Public Internet Access	695
Village ICT (Information and Communication Technology) Office	588
Telecommunications Office	2303
Post Office	685
Postal Box	743

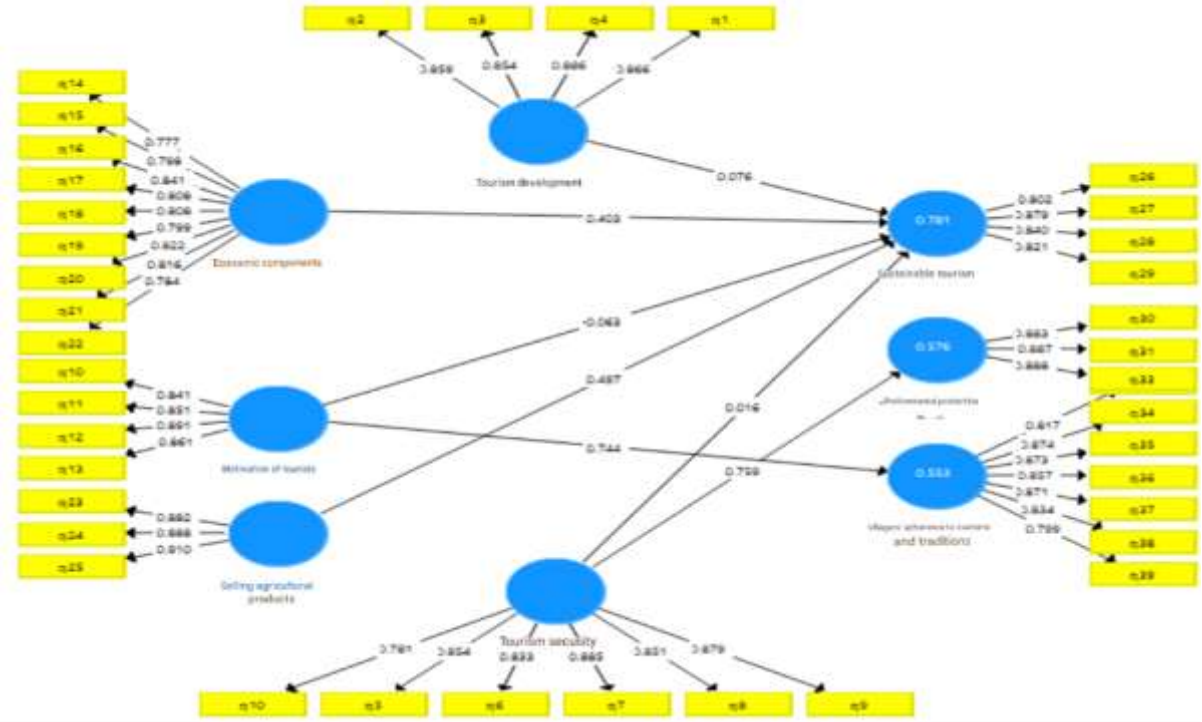

Figure 1: Initial Reflective Outer Model in the Standardized Coefficients Estimation State

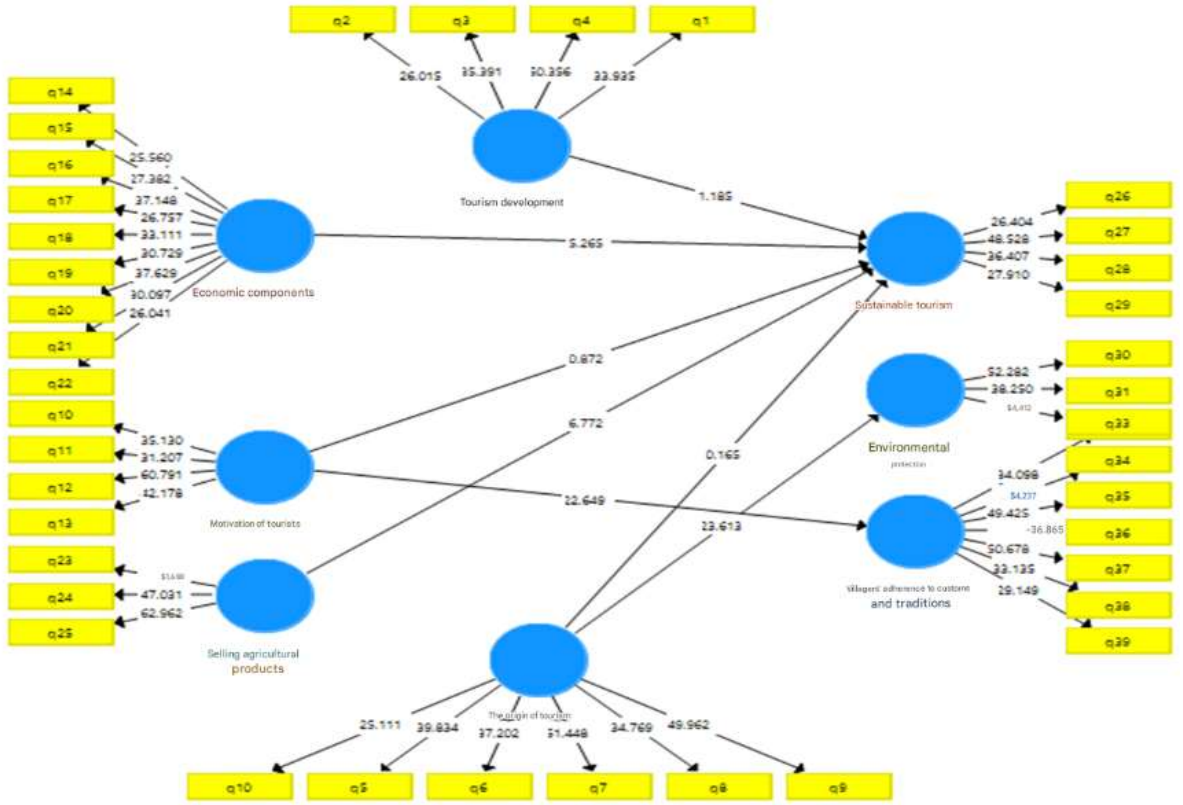

Figure 2: Initial Reflective Outer Model in the Significance of Coefficients State

Unidimensionality Test (Homogeneity Test)

Table 16: Factor Loadings between Latent and Manifest Variables in the Initial Reflective Outer Model

Indicators						
Q1	0.813					
Q2	0.809					
Q3	0.859					
Q4	0.896					
Q5		0.797				
Q6		0.841				
Q7		0.785				
Q8		0.829				
Q9		0.821				
Q10		0.882				
Q11				0.694		
Q12				0.86		
Q13				0.89		
Q14			0.791			
Q15			0.784			
Q16			0.77			
Q17			0.83			
Q18			0.717			
Q19			0.759			
Q20			0.724			
Q21			0.919			
Q22			0.888			
Q23					0.879	
Q24					0.869	
Q25					0.826	
Q26	0.725					
Q27	0.681					
Q28	0.841					
Q29	0.831					
Q30				0.805		
Q31				0.798		
Q32				0.845		
Q33						
Q34						0.734
Q35						0.801
Q36						0.822
Q37						0.782
Q38						0.878
Q39						0.782
Q40						0.867

Table 16 shows that all indicators have factor loadings between 0.65 and 0.70; therefore, they remain in the model for further reliability and validity assessment.

Reliability Test of the Reflective Outer Model

There are four criteria commonly used to test the reliability of the outer model in software applications:

- Cronbach's Alpha
- Composite Reliability or Dillon Goldstein's rho (P)
- RHO_A Reliability or Spearman's Internal Consistency
- Communality Reliability

Table 17: Cronbach's Alpha Coefficients

Latent Variables	Cronbach's Alpha
Tourism Development	0.944
Economic Components	0.944
Tourist Security	0.920
Tourist Motivation	0.882
Agricultural Product Sales	0.921
Sustainable Tourism	0.934
Environmental Protection	0.608
Rural Residents' Commitment to Customs	0.887

According to Table 17, except for the Environmental Protection variable, all latent variables have Cronbach's alpha coefficients above 0.70, indicating acceptable reliability of the model. Based on Klein (2016), since the Environmental Protection coefficient is above 0.60, it is also considered acceptable.

Composite Reliability or Dillon-Goldstein's rho (P)

Table 18: Composite Reliability Coefficients of Latent Variables in the Study

Latent Variables	Composite Reliability
Tourism Development	0.948
Economic Components	0.953
Tourist Security	0.936
Tourist Motivation	0.905
Agricultural Product Sales	0.933
Sustainable Tourism	0.947
Environmental Protection	0.639
Rural Residents' Commitment to Customs	0.900

Spearman Correlation Reliability of Reflective Indicators

Table 19: Spearman Correlation Reliability Coefficients of Latent Variables in the Study

Latent Variables	Spearman Correlation Reliability (RHO_A)
Tourism Development	0.994
Economic Components	0.946
Tourist Security	0.923
Tourist Motivation	0.902
Agricultural Product Sales	0.963
Sustainable Tourism	0.934
Environmental Protection	0.633
Rural Residents' Commitment to Customs	0.797

According to Table 19, the RHO_A reliability for all latent variables except Environmental Protection exceeds the cutoff point of 0.7, thus confirming the reliability of the model based on this index.

Communality Reliability

Table 20: Communality Coefficients of Latent Variables in the Study

Latent Variables	Communality Reliability (COMMUNALITY)
Tourism Development	0.586
Economic Components	0.719
Tourist Security	0.679
Tourist Motivation	0.615
Agricultural Product Sales	0.700
Sustainable Tourism	0.720
Environmental Protection	0.514
Rural Residents' Commitment to Customs	0.645

Summary: The four reliability tests confirm that the research results are reliable based on the model.

Validity Test of the Reflective Outer Model

There are two important methods in discussing the validity of the external reflective model, and the

smart PLS software also includes indicators to measure these two. One is convergent validity and the other is divergent or discriminant validity.

Convergent Validity

Table 21. Average Variance Extracted (AVE) and Composite Reliability (CR) Indices

Latent Variables	AVE	CR
Tourism Development	0.586	0.948
Economic Components	0.719	0.953
Tourist Security	0.679	0.936
Tourist Motivation	0.615	0.905
Agricultural Product Sales	0.700	0.933
Sustainable Tourism	0.720	0.947
Environmental Protection	0.514	0.639
Villagers' Adherence to Customs	0.645	0.900

Discriminant Validity

a) Cross-Loading Method

Table 22. Cross-Loadings for Evaluating Discriminant Validity

	Sustainable Tourism	Tourism Development	Tourist Security	Economic Components	Environmental Protection	Tourist Motivation	Agricultural Product Sales	Adherence to Customs
Q1	-0.058	0.813	0.558	-0.071	0.529	0.479	0.388	-0.022
Q2	-0.127	0.809	0.598	-0.089	0.623	0.497	0.502	-0.044
Q3	-0.096	0.859	0.63	-0.12	0.575	0.567	0.527	-0.072
Q4	-0.079	0.896	0.67	-0.097	0.661	0.551	0.548	-0.008
Q5	-0.155	0.894	0.674	-0.181	0.616	0.552	0.525	-0.174
Q6	-0.209	0.831	0.658	-0.176	0.603	0.511	0.459	-0.166
Q7	-0.198	0.858	0.638	-0.175	0.633	0.565	0.487	-0.07
Q8	-0.161	0.818	0.581	-0.156	0.543	0.402	0.472	-0.131
Q9	-0.099	0.807	0.604	0.003	0.62	0.524	0.493	0.016
Q10	-0.034	0.66	0.553	0.034	0.5	0.458	0.467	0.071
Q11	-0.079	0.739	0.684	-0.042	0.654	0.646	0.59	-0.021
Q12	-0.037	0.66	0.595	-0.013	0.606	0.505	0.502	-0.027
Q13	-0.07	0.72	0.687	-0.018	0.704	0.601	0.557	-0.013
Q14	-0.053	0.657	0.646	-0.059	0.676	0.578	0.488	-0.027
Q15	-0.115	0.715	0.697	-0.132	0.643	0.544	0.576	-0.084
Q16	-0.104	0.693	0.698	-0.041	0.683	0.586	0.57	-0.071
Q17	-	0.635	0.684	0.001	0.707	0.546	0.537	-0.039

	0.045							
Q18	-0.078	0.682	0.548	-0.077	0.644	0.469	0.519	-0.099
Q19	-0.132	0.661	0.66	-0.012	0.673	0.561	0.528	0
Q20	-0.191	0.632	0.619	-0.144	0.568	0.522	0.493	-0.18
Q21	-0.103	0.625	0.69	-0.044	0.605	0.569	0.567	-0.069
Q22	-0.091	0.553	0.626	-0.06	0.564	0.457	0.493	-0.063
Q23	-0.044	0.673	0.635	-0.005	0.632	0.53	0.588	-0.004
Q24	-0.146	0.665	0.665	-0.043	0.618	0.499	0.573	-0.018
Q25	-0.058	0.68	0.724	0.021	0.686	0.55	0.594	0.021
Q26	0.018	0.573	0.62	0.062	0.614	0.536	0.445	0.096
Q27	0.006	0.608	0.55	0.113	0.634	0.46	0.547	0.029
Q28	-0.151	0.609	0.678	-0.091	0.696	0.645	0.684	-0.097
Q29	0.001	0.508	0.605	0.055	0.865	0.642	0.64	0.004
Q30	-0.052	0.692	0.671	0.013	0.861	0.613	0.557	0.03
Q31	0.652	-0.119	-0.121	0.62	-0.082	-0.148	-0.167	0.587
Q32	0.659	0.032	-0.02	0.63	0.039	0.001	-0.092	0.535
Q33	0.658	-0.033	-0.073	0.668	0.007	-0.06	-0.193	0.611
Q34	-0.162	0.723	0.756	-0.044	0.813	0.642	0.606	-0.029
Q35	-0.078	0.626	0.731	-0.067	0.773	0.742	0.643	-0.031
Q36	-0.032	0.571	0.694	0.021	0.876	0.675	0.67	0.024
Q37	0.517	0.002	0.009	0.656	0.046	-0.027	-0.15	0.648
Q38	0.009	0.583	0.74	0.038	0.827	0.664	0.54	0.012
Q39	0.638	-0.179	-0.132	0.882	-0.043	-0.136	-0.127	0.677
Q40	-0.019	0.624	0.764	-0.062	0.719	0.553	0.562	-0.027

As observed in Table 22, the correlation of each survey question with its corresponding latent variable is at least 0.1 higher than its correlation with other variables, which indicates the appropriateness of the discriminant validity of the external models. The cross-loading results fully satisfy the necessary conditions, and it can be claimed that the indicators of each latent variable are distinct from those of other latent variables.

b) Fornell and Larcker Criterion

Table 23: Correlations between Latent Variables with the Square Root of AVE on the Diagonal

	Sustainable Tourism	**Tourism Development**	**Tourist Security**	**Economic Components**	**Environmental Protection**	**Tourist Motivation**	**Agricultural Product Sales**	**Adherence to Customs**
Tourism Development	0.765							
Economic Components	-0.16	0.848						
Tourist	-0.128	0.739	0.824					

Security								
Tourist Motivation	0.724	-0.157	-0.09	0.784				
Agricultural Product Sales	-0.047	0.706	0.795	0.023	0.837			
Sustainable Tourism	-0.109	0.608	0.757	-0.065	0.759	0.849		
Environmental Protection	-0.144	0.578	0.733	-0.099	0.618	0.664	0.717	
Adherence to Customs	0.63	-0.101	-0.034	0.783	0.013	-0.038	-0.082	0.803

c) HTMT Discriminant Validity Index

Table 24: HTMT Discriminant Validity Indices

	Sustainable Tourism	**Tourism Development**	**Tourist Security**	**Economic Components**	**Environmental Protection**	**Tourist Motivation**	**Agricultural Product Sales**	**Adherence to Customs**
Tourism Development	0.139							
Economic Components	0.129	0.792						
Tourist Security	0.814	0.146	0.096					
Tourist Motivation	0.094	0.781	0.898	0.081				
Agricultural Product Sales	0.108	0.648	0.818	0.082	0.844			
Sustainable Tourism	0.694	0.831	0.353	0.408	0.091	0.271		
Environmental Protection	0.735	0.092	0.056	0.909	0.061	0.071	0.471	
Adherence to Customs	0.087	0.917	0.86	0.085	0.888	0.728	0.025	0.073

By confirming both convergent and discriminant validity tests, it can be claimed that this reflective external model has construct validity. It can be seen that all indices related to the external reflective model were examined and tested.

External Model Quality Test

Table 25: Cross-validity of the common index

Latent Variables	**CV COM**
Tourism Development	0.482
Economic Components	0.603
Tourist Security	0.550
Tourist Motivation	0.416
Agricultural Product Sales	0.527
Sustainable Tourism	0.595

Environmental Protection	0.177
Villagers' Adherence to Customs	0.420

As shown in Table 25, all main variables except Environmental Protection have very strong CV COM values, indicating a relatively high quality of the current research's reflective external model.

Inner Model Tests

Inner model tests include:

- Path coefficients and their significance tests
- Predictive accuracy test for endogenous latent variables
- Inner model predictive quality test

Path Coefficients and Their Significance Tests

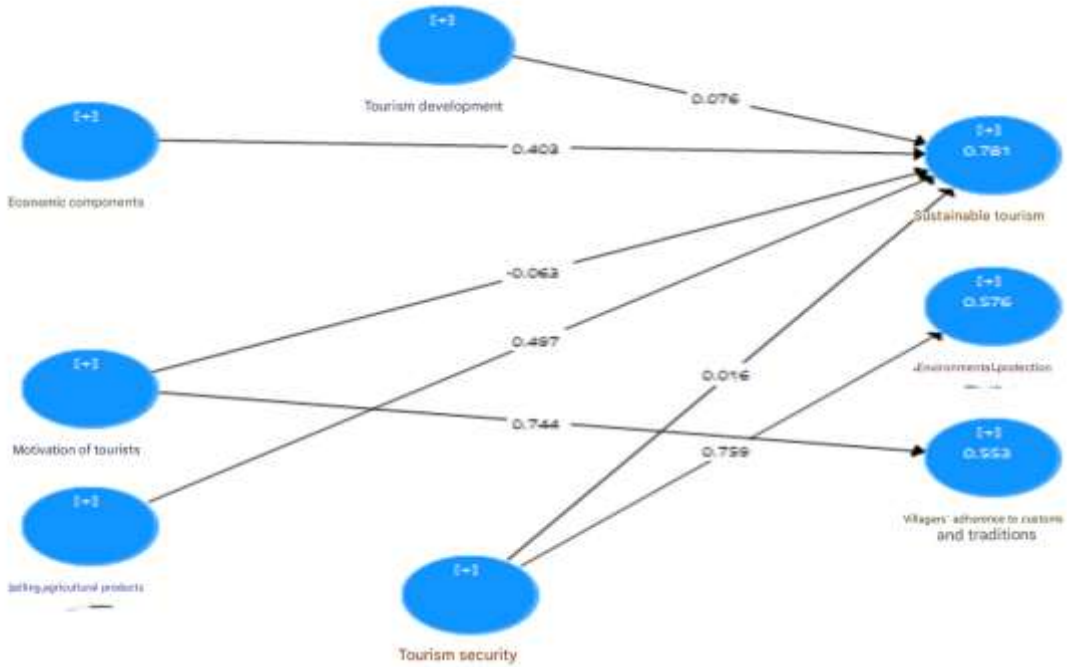

Figure 3. Inner or Structural Model in Standardized Path Coefficients Estimation Mode

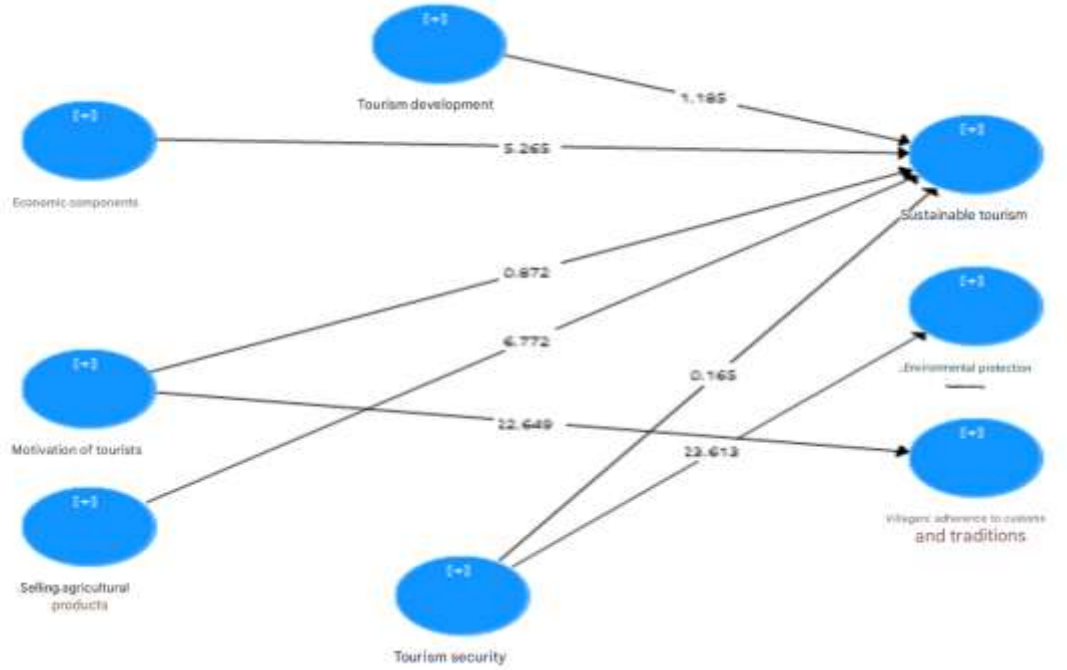

Figure 4. Inner or Structural Model in Path Significance Mode

Equations for path coefficient tests and their significance

Table 26: Path Coefficients between Constructs and Their Corresponding Components

Paths	Path Coefficient	P-Value	T-Value	Interpretation
Tourist Security → Environmental Protection	0.760	0.000	23.613	Significant
Tourist Security → Sustainable Tourism	0.011	0.869	0.165	Not Significant
Tourist Motivation → Adherence to Customs	0.746	0.000	22.649	Significant
Tourist Motivation → Sustainable Tourism	0.063	0.383	0.872	Not Significant

Endogenous Latent Variables Prediction Accuracy Test (R Square)

Table 27: R Square or R^2 (Coefficient of Determination)

Endogenous Variable	R Square	Adjusted R Square
Environmental Protection	0.576	0.574
Rural Residents' Commitment	0.553	0.551
Sustainable Tourism	0.781	0.776

Effect Size Test

$$f^2=(R^2_{included}-R^2_{excluded}) / (1 - R^2_{included})$$

Table 28: Effect Size Values

Influencing Variable	Dependent Variable	f^2
Tourism Development	Sustainable Tourism	0.491
Economic Components		0.421
Tourist Safety		0.275
Tourist Motivation		0.296
Agricultural Product Sales		0.323
Tourist Motivation	Commitment to Customs	1.239
Tourist Safety	Environmental Protection	1.356

According to the results in the table, all coefficients except for Tourist Safety and Tourist Motivation have a high impact on the dependent variable.

Inner Model Prediction Quality Test

Table 29: Cross-Validated Redundancy Index

Endogenous Variable	CV RED
Environmental Protection	0.590
Rural Residents' Commitment	0.725
Sustainable Tourism	0.620

Overall PLS Model

The SRMR index value = 0.068, which is less than the corresponding cutoff point, so the researcher can declare the model fit and that the sample observations align with reality.

Goodness of Fit (GoF)

$$GOF = \sqrt{(communality) \times (R\ square)}$$

$$\sqrt{0}.562 * \sqrt{0}.632 = 0.594$$

Research Hypothesis Test

1- It appears that rural tourism development in Razavi Khorasan Province is sustainable.

Table 30: One-sample t-test results

	Test Value = 3				95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower Bound	Upper Bound
Sustainable Development	14.928	209	0.000	0.93810	0.8142	1.0620

2- It seems that the role of economic components in rural sustainable tourism in the studied area is greater than other criteria.

Table 31: Path Analysis Test Results

Paths	Path Coefficients	p-value	t-value	Interpretation
Tourist Safety → Sustainable Tourism	0.011	0.869	0.165	Not Significant
Tourist Motivation → Sustainable Tourism	0.063	0.383	0.872	Not Significant
Product Sales → Sustainable Tourism	0.493	0.000	6.772	Significant
Tourism Development → Sustainable Tourism	0.083	0.236	1.185	Not Significant
Economic Components → Sustainable Tourism	0.406	0.002	5.265	Significant

3- There is a positive and significant relationship between tourist safety and support for international tourists and event orientation with regional environmental protection.

Table 32: Path Analysis Test Results

Paths	Path Coefficients	p-value	t - value	Interpretation
Tourist Safety → Environmental Protection	0.760	0.000	23.613	Significant

4- There is a positive and significant relationship between tourists' motivations and rural residents' commitment to local, national, and religious customs.

Table 33: Path Analysis Test Results

Paths	Path Coefficients	p-value	t-value	Interpretation
Tourist Motivation → Commitment to Customs	0.746	0.000	22.649	Significant

Research Hypotheses Test Results:
Rural tourism development in Razavi Khorasan Province appears to be sustainable.

Table 34: One-sample t-test results

	Test Value = 3					
	t	df	Sig. (2-tailed)	Average difference	95% Confidence Interval of the Difference	
					Lower bound	Upper bound
Sustainable Development	14.928	209	.000	.93810	.8142	1.0620

The role of economic components in rural sustainable tourism in the region seems greater than other criteria.

Table 35: Path Analysis Test Results

Paths	Path coefficients	p-value	t- value	Interpretation
Tourist Security -> Sustainable tourism	0.011	0.869	0.165	Non-Significant
Tourist motivation -> Sustainable tourism	0.063	0.383	0.872	Non-Significant
Product sales -> Sustainable tourism	0.493	0.000	6.772	Significant
Tourism development -> Sustainable tourism	0.083	0.236	1.185	Non-Significant
Economic components -> Sustainable tourism	0.406	0.002	5.265	Significant

There is a positive and significant relationship between tourist safety and support for international tourists and event orientation with environmental protection.

Table 36: Path Analysis Test Results

Paths	Path coefficients	p-value	t- value	Interpretation
Tourist Security -> Environmental protection	0.760	0.000	23.613	Significant

There is a positive and significant relationship between tourists' motivations and rural residents' commitment to local, national, and religious customs.

Table 37: Path Analysis Test Results

Paths	Path coefficients	p-value	t -value	Interpretation
Tourist Motivation -> Adherence to Etiquette	0.746	0.000	22.649	Significant

Discussion and Conclusion

Based on the conducted research and reviews, strategic planning for rural tourism is essential and unavoidable, because neglecting this important issue causes multiple environmental problems in rural communities. These issues are harmful not only to residents but also unpleasant for many foreign tourists, leading to various problems in trade and reduced economic benefits in the region. If strategic planning is not prioritized, these areas will be unable to compete with regions that have proper planning and will become uncontrollable for tourism management systems, whereas focusing on planning will lead to rural development.

According to the research findings and considering the capabilities of Razavi Khorasan Province, the strategic planning approach for rural tourism management should be prioritized. Razavi Khorasan, as one of Iran's ancient tourism hubs, can welcome countless national and international visitors. Attention to natural rural attractions will also ensure the preservation and survival of historical villages. Preventive measures for protecting these areas and the active tourism facilities therein, planning to delegate necessary authorities to the Provincial Cultural Heritage Organization, proper advertising to attract rural tourists by the private sector, increasing specialized personnel in the tourism sector of the Cultural Heritage, Handicrafts, and Tourism Organization, establishing specialized training courses for staff to familiarize them with tourism issues, especially rural tourism, creating tourism-related academic programs in public, private, Azad, and Payame Noor universities in the province to train specialized human resources in tourism, ensuring specialized skills and relevant education of staff, financial and insurance support for private sector employers, aligning employees' education with tourism matters, organizing various exhibitions related to handicrafts, culture, art, and local and rural festivals, and establishing rural travel and tourism offices in underserved areas can all be very promising and helpful.

Suggestions for Other Researchers

- Estimate the carrying capacity of rural tourism attractions in Razavi Khorasan Province.
- Research the economic effects of archaeological and historical rural sites in Razavi Khorasan.
- Investigate the role of rural tourism in creating employment opportunities and higher incomes in

the northern, eastern, western, and southern parts of Razavi Khorasan Province.

- Examine tourism, nomadic, and agricultural capabilities and their effects on the economic and cultural development of Razavi Khorasan Province.
- Analyze this model using SWOT analysis and the NAP school (Pairwise Comparison Matrix)
- Study various types of rural tourism (natural, ecotourism, agricultural) in the context of sustainable development.

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