Model Building for Community Participating in Rural Tourism and Game Analysis of Core Stakeholders

Guanglu LIU¹, Hong LIU¹,* , Hongzhi LIU²
1. School of Business Administration, University of Science and Technology Liaoning, Anshan 114051, China; 2. School of Continuing Education, Zhejiang University, Hangzhou 310058, China

Abstract Community residents play an important role in the development of rural tourism. Taking the interest demands of stakeholders and non-cooperative game process as main line, the conflict of interest between community residents and tourists and between community residents themselves as guidance, it built an interest relation model for community participating in rural tourism. Besides, it elaborated non-cooperative relation and their interest pattern for stakeholders of rural tourism, and discussed behavior interaction process and results of core stakeholders of rural tourism. Finally, it came up with pertinent recommendations for harmonious and healthy development of rural tourism.

Key words Rural tourism, Community participation, Stakeholders, Game analysis

1 Introduction
Rural tourism, as an effective means of invigorating rural economy and transforming rural single economic mode, is becoming an essential force for improving rural life and social environment, and has become a new economic growth point of rural areas because of its effective promotion for other industries and entire rural economy. In the process of rural tourism, fair allocation, fair procedure, and fair interaction perceived by residents influence communities participating in rural tourism through influencing sense of community support. Excessive development, unreasonable management, non-cooperative game of stakeholders, institutional vacancy, and management override problems bring about a series of conflicts of economic benefits, rendering this popular tourism to exert a certain negative effect on rural communities. It is necessary to study how to properly balance the relation between stakeholders, build a mechanism integrating tourists, local communities, government and developers, and coordinating economic, social, cultural, and environmental benefits.

2 Connotation and influence of community participation in rural tourism
2.1 Community participation in rural tourism development
Rural tourism refers to the tourism activity that occurs in rural areas, attracts tourists with unique rural culture and landscape (pastoral scenery, agricultural production mode and farmers’ lifestyle), and meets tourists’ demands for sightseeing, leisure, holiday and experience. Most of the visitors it attracts are from urban areas. The essence of rural tourism development is the game process of rights and interests between different stakeholders. In the game process, every stakeholder constantly expands his stock, and brings the game to develop towards the direction favorable for himself. It is necessary to discuss how rural community residents effectively participate in rural tourism activities, so as to promote sustainable development of rural tourism and all-round development of communities. Some scholars believed that interests of residents should enhance environmental protection, improve local economic situation, provide jobs for local communities, and raise community level and grade. At present, community residents fail to participate in rural tourism development mainly because their rights are infringed upon. Therefore, the essence of community participation in rural tourism is the process of community residents safeguarding their lawful rights and interests and common interests. At the same time of promoting tourism development, rural tourism also exerts a series of negative influence on local community residents, which are passively assumed by marginalized community residents, leading to resentment or even boycott of community residents.

2.2 Influence of community participation in rural tourism
The development of rural tourism exerts following 5 levels of influence on communities. Deep level reasons involve different characteristics of stakeholders in rural tourism system. Firstly, the participation in planning and decision making of tourism development is mainly manifested in conducting opinion poll, encouraging farmers to establish long-term and short-term objectives for rural tourism development, and selecting proper opinions of farmers to include into government decisions. According to Sustainable Development of Tourism; A Local Authority Perspective issued by National Tourism Administration with authorization of World Tourism Organization (WTO) in 1997, community residents participation in the process of tourism planning can be divided into 8 steps, as shown in Fig. 1. Secondly, it is participation in allocation of interests of tourism development. Farmers have right to enjoy economic interests obtained in rural tourism development, provide profitable opportunity for rural residents, including providing opportunity and business opportunity for local residents. Thirdly,
communities participate in environmental protection and traditional culture maintenance. A large number of tourism developers put economic benefits in the first place, but neglect ecological environment and local culture protection. Damage to natural resources, excessive development of rural scenic spots, traditional cultural loss, and extensive management mode exert adverse influence on local farmers. Weak force of government is difficult to change current situations, it is necessary to encourage farmers to participate.

3 Interest relation model for community participation in rural tourism

3.1 Types of stakeholders of rural tourism The theory of model building is based on development of stakeholder theory and its application in tourism development practice. People start to realize the essential role of stakeholders in rural tourism development. Some scholars summarized stakeholders as core stakeholders and indirect stakeholders. In accordance with this, stakeholders of rural tourism can be divided into core stakeholders that play an utmost role in development and protection of rural tourism destination (including local government, tourism enterprises, local communities, and rural tourists) and indirect stakeholders that have...
low influence on rural system (including various non-governmental organizations, industrial associations, tourism planning companies, new media, and workers of tourism enterprises). Core stakeholders are not unchangeable. They will constantly change with development stage at which destination and tourist site remains and also with adjustment of stakeholders, and their role and position will also change accordingly, as shown in Fig. 2. As integrator and coordinator of public resources, government has resource and political rights; tourism enterprises obtain resource rights from government departments by means of capital rights and technological advantages; tourists as purchasers of rural tourist products have rights of product and service selection; community residents form a cooperative or competitive relation with local tourism enterprise through participating in rural tourism development.

3.2 Interaction between core stakeholders. In the model, community residents and tourists are core stakeholders and have two-way interaction in certain sectors of the same rural tourism. Community residents obtain profit from rural tourism, which stimulates community residents to constantly participate in rural tourism. Tourists realize role participation through media of rural tourism and obtain tourist experience and satisfy tourist demands; rural tourism as a certain sector appears covers all elements related to rural tourism. Government and enterprises are security factors of the model and exert influence on two main factors through various forms of expression. Government guides benign development of rural tourism through regulating enterprise management and community participation. Enterprise promotes rural tourism development through boosting operation and management. Tourist market beyond the model system mainly plays the role of external promotion. In other words, tourist market constantly creates new demands in the rural tourism development to stimulate generation of new rural tourist products and influence the trend of rural tourism development.

4 Game analysis on conflict of interest between core stakeholders

4.1 Interest demands and game behavior of core stakeholders

4.1.1 Local government and community residents. Through participating in rural tourism, community residents obtain more job opportunities and increase their income, but local government building tourism infrastructure and undertaking tourism propaganda will reduce income of community residents. Besides, due to increase of local product price, local government and community residents have different opinions as to developing rural tourism. In addition, community residents do not have the right to speak in formulation of rural tourism planning, thus their interest demands are neglected, and there is possibility of game between them.

4.1.2 Local government and rural tourism enterprises. Due to difference in role position, local government and rural tourism enterprises have different understanding of rural tourism. Local government pays attention to long-term interests and intends to change existing inherent economic structure to protect and care about rural ecological environment, while tourism enterprises focus on obtaining benefits through extensive operation. As a result, it leads to economic leakage and finally brings about the “tourism enclave” problem. Local government prefers to formulate some management policies to contain shortsighted behavior of tourism enterprises, while tourism enterprises like to take passive measures. As a result, tourism development planning of local government will be influenced, forming the game between them.

4.1.3 Community residents and rural tourism enterprises. Imbalance in interest allocation leads to game behavior between community residents and tourism enterprises. Community residents demand higher economic income, but their job participation field is narrow, it is difficult for them to obtain management jobs, and their remuneration is low. With the aid of economic development activities, tourism enterprises take maximizing economic benefits as their goal, and they establish powerful monopoly position with the aid of their capital and technological advantages, which makes family based workshops unable to contend with them and also deteriorates excessive dependence of rural economy on rural tourism enterprises.

4.1.4 Community residents and tourists. Community residents influence tourists mainly in their attitude towards tourists, and attitude of community residents is closely related with stage of tourism development. At the early stage, rural economic development level was low. In the process of tourists seeking true tourist products, villagers increased income, improved living conditions, and enriched cultural life. Thus, they widely welcomed tourists, and tourists also obtained excellent tourist experience. At the deepening stage, with collision and influence of consumption behavior and idea of urban and rural residents, tourists started to exert certain negative influence on social, economic and environmental conditions of rural communities and living conditions of community residents, and community residents also had serious psychological imbalance. Then, they started to change attitude towards tourists, or even take illegal operation means to deceive tourists, which brings about game behavior between them.

4.2 Game revenue analysis of core stakeholders

4.2.1 Game between community residents and tourists. Villager behavior happens before the strategy, while tourists react after knowing action strategy of villagers. Their game is a dynamic process with action sequence, and the game revenue (payment) results are listed in Table 1. In the Table, R1 denotes faithful operation revenue of community residents; R2 is unlawful operation revenue of community residents; C1 is cost of tourists; C2 is additional cost of tourists due to unlawful operation of community residents; C3 is cost of tourists for complaint; F is fine imposed by government on unlawful behavior; K is compensation obtained by tourists after lodging a complaint. Higher F and K will more effectively prevent occurrence of unlawful operation activities. Orderly and standardized tourism operation market environment relies on constant improvement of government supervision mechanism. Further regulating tourism operation and consumption market can guarantee normal process of market. Information grasping level directly influences revenue (payment) results. Dai Zeguang (2009), through introducing Harsanyi transformation, built a uniform probability model to describe processing of participants to incom-
5.2 Game between community residents. Based on assumption that community residents are rational economic men, due to influence of cultural, economic, and cognition factors, they may pursue maximum profit at the cost of damaging environment, or even sacrificing interests of others. Taking A and B as game subjects, if both deteriorate the environment, it will cause loss C; if neither deteriorates the environment, A and B will obtain respective revenue R. Improvement of ecological environment, as public goods with high externality, will be consumed once generated. Thus, no matter one party takes positive or negative attitude, the other party will react with negative attitude. As shown in Fig. 3, if A protects environment actively, he will assume cost for ecological environment, and also assume the losses incurred from noncooperation of B, the loss C, (C < C,); because of noncooperation, B needs not pay the cost, but enjoys benefits brought from environmental improvement, and obtains revenue R, (R < R), vice versa. Therefore, the balance result is (no protection, no protection), and balance revenue is (−C, −C), namely, neither will take initiative measures to participate in and implement environmental protection and construction.

Table 1 Revenue of game behavior between community residents and tourists

<table>
<thead>
<tr>
<th>Item</th>
<th>Tourists making complaint</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No compensation</td>
</tr>
<tr>
<td>Overcharge</td>
<td>R2-K-F</td>
</tr>
<tr>
<td>Honest operation R1</td>
<td>F - K</td>
</tr>
<tr>
<td>S - C1</td>
<td>S - C3 + K</td>
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</table>

Fig. 3 Payment matrix for the game between community residents

5 Conclusions and recommendations

5.1 Improving the situation of information asymmetry
There is information asymmetry in the game between community residents and tourists. Such information asymmetry directly leads to the result that the party with information advantage takes reverse selection in the manner of concealing information, to obtain additional revenue, which will ultimately influence the operation results of the price mechanism and the resource allocation efficiency, and interests of stakeholders will be not optimum. At present, there is serious information asymmetry and incompleteness at China’s tourism market, leading to existence of some non-reasonable or even illegal behavior of developers and tourists. In this situation, government must undertake the responsibility of systematically collecting and promptly issuing information of tourism market, improve the transparency of policies and documents, establish and improve the information network, and raise the market transparency, to overcome the drawback of information asymmetry at the tourism market.

5.2 Encouraging community participation and interest security
Different actions of interests based on different demands of interests will trigger uneven interest distribution and cause conflict, so it is required to comply with the balance principle and establish an effective interest security and allocation mechanism. Besides, it is recommended to specify reasonable revenues and revenue realization approaches for each party, and make clear the coordination methods and solutions once there appears conflict of interest. Some rural tourism largely relies on support of government and financial institutions. It is recommended to establish an effective incentive mechanism from policy preference and fund support, and consider providing certain financial subsidies for those residents not participating in community residents, to realize sustainable development of sharing the interest. If local government or other strong entities increase the control over land resources, it may trigger local residents to fight for the resources, accordingly leading to excessive development and consumption of natural resources. At current stage, government sectors should establish institutional guarantee and effective propaganda and education to raise awareness of community residents for environmental protection and participation in tourism. It is recommended to encourage and guide local community residents to participate in rural tourism resource development, protection and management, to comprehensively participate in and controlling every link of the tourism project planning and implementation, including all processes from policy formulation to development, management and supervision, and from overall participation to investment and interest allocation. Through combining economic benefits of tourism development and overall benefits of local communities, it is expected to realize harmony between development and protection.

5.3 Bringing into play leading and coordination role of the government
The key for realizing relative balance of interest is to establish reasonable institutional mechanism and security mechanism, to ensure the rights of community residents to express their opinions and make decisions. According to the theory of stakeholder...
riety suitable for mechanization harvest and improving mechanization level. It could not only decrease cost, improve production efficiency and increase benefit but also decrease labor capacity of rape production to a great extent and liberate rural productivity.

5 Conclusions

In this paper, using DEA method, technology efficiency of rape production in 14 rape production provinces of China during 2006–2013 was measured, and the research conclusions were as below.

(1) According to average scores of technology efficiency during 2006–2013, in 14 rape production provinces, the province with higher production technology efficiency was mostly in east and center regions, while Qinghai, Yunnan, Gansu and Shaanxi that average scores ranked last were all in west region.

(2) In Anhui, Qinghai, Yunnan, Gansu and Shaanxi, surplus degree of farm manure was more than that of chemical fertilizer, and redundancy of other material cost was serious. By combining actual situation, the reason was analyzed, and the explanation was as below: the price of chemical fertilizer in recent years was higher, which caused that farmer increased greatly utilization amount of farm manure and decreased utilization amount of chemical fertilizer. Therefore, surplus situation of chemical fertilizer was eased. Due to immature composting technology of farm manure in the five provinces, utilization rate of farm manure was low. So, although input of farm manure was more, when using actually, its contribution to yield increase was limited. Under the existing yield, the situation of input surplus of farm manure appeared in the five provinces with higher utilization rate of farm manure.

(3) There were many reasons causing redundancy of other material cost per mu. If analyzing from mechanical cost and animal force cost with the maximum proportion, it could be explained that in rape production process of the five provinces, mechanization degree was relative lower, and it mainly used animal force to sow and reap. Efficiency of animal force was extremely low, and the cost per mu was even higher than mechanical cost. Under the existing yield level, compared with other provinces with higher mechanization degrees, the item cost had redundancy in the five provinces.

(4) According to the reasons for surpluses of farm manure cost per mu and other material cost per mu, the solving measures were proposed. Firstly, developing composting technology of farm manure and improving utilization rate of farm manure. Secondly, according to the situation of each province, cultivating rape variety suitable for mechanized sowing and reaping, scale planting, and replacing traditional animal force ploughing by efficient machine, thereby further improving production efficiency of rape.

References


