

Article

Rural Tourism and Environmental Sustainability—A Study on a Model for Assessing the Developmental Potential of Organic Agritourism

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Abstract: In light of the public's increasing awareness of and desire to create healthy and friendly environments, developments in organic agriculture and organic agricultural products have gradually yielded optimum choices in terms of healthy diets, travel options, and lifestyles, in addition to winning considerable attention and popularity from the public. This study was centered on a model for assessing the developmental potential of organic agritourism, with empirical analyses being conducted regarding visitors to Yuli Township in Hualien County, Taiwan. The results were as follows. By means of on-site interviews and surveys, as well as a review of relevant literature, this study constructed several assessment indicators of the developmental potential of organic agritourism. The constructed model consisted of four criteria, namely, the attractiveness of resources, market development potential, community development capabilities, and the creation of diverse values, as well as 23 sub-criteria. The analytic hierarchy process (AHP) approach was employed, and a questionnaire with expert validity was used to deduce the weights of each criterion and sub-criterion. The highest-weighted criterion was the attractiveness of resources, followed by, in order, the creation of diverse values, market development potential, and community development capabilities. The results of this study can serve as a reference for Yuli Township in developing strategies to promote organic agritourism in the area.

Keywords: organic agriculture; agritourism; community development; sustainable development

1. Introduction

Environmental damage caused by industrial developments has driven city dwellers to seek out clean, comfortable, and unconfined environments for the purposes of relieving job stress, as well as pursuing nourishing and healthy lifestyles. As societies pay more attention to food safety issues and people's health awareness continues to grow, consumer demand for organic products has consistently been on the rise, with organic agriculture being regarded as an important contributor to food safety [1–3]. As such, issues pertaining to organic agriculture have received considerable public attention [4]. According to the International Federation of Organic Agriculture Movements (IFOAM), developments in organic agriculture should be based on the principles of health, ecology, fairness, and care [5]. The characteristics of organic agriculture are also compliant with principles such as agricultural refinement, food quality enhancement, and environmental sustainability. Related industries and products, such as organic growing, organic farming, organic agricultural products, organic agricultural villages, and organic agritourism have also experienced surging growth rates as a result [6]. Choo and Jamal [7] proposed the notion of eco-organic farm tourism, which is a new form of tourism that promotes sustainable agriculture, local development, sociocultural and environmental protection, health and

well-being, and learning opportunities [8]. Since tourism is a means of achieving physical and mental stress relief, many people hope that tourist experiences can assist their pursuit of physical, mental, and spiritual wellness, in addition to increasing their personal subjective well-being [9]. Relatedly, health-oriented tourism is one of the fastest-growing forms of tourism at home and abroad, and it is estimated that this sector will continue to grow [10]. In this regard, under the influences of health and wellness objectives, environmental sustainability, and the slow-living concept, the concomitantly booming development of organic agritourism is an issue worth studying.

Taiwan began to promote organic agriculture and organic farming in 1996. According to the 2019 statistics of the Taiwan Organic Information Portal, the total area of organic farmland in Taiwan increased from 159.6 hectares in 1996 to 8759.06 hectares in 2018 [11]. Meanwhile, increasing income levels among Taiwan's citizens have led to growing developments in leisure and tourism. Statistics from the Tourism Bureau, Ministry of Transport and Communications, indicate that from 2010 to 2019, the number of visits to tourist and recreational destinations in Taiwan and Fujian grew from 191,302,739 to 332,968,307 [12,13]. In addition, a 2019 survey on domestic tourism in Taiwan showed that the proportion of visitors who had experienced rural tourism was 1.9%, growth compared to the proportion of 1.2% in 2010 (Table 1). Relatedly, organic agricultural tourism can be characterized as a form of health-oriented tourism that is environmentally friendly [14] and is gradually gaining recognition from the public. This shows the prospects and importance of developments in organic agritourism. Most studies pertaining to organic agriculture have primarily investigated developments in organic agriculture as a whole, with few covering organic agritourism [4,14]. Through organic agriculture, organic agritourism, on one hand, shapes distinct landscape resources, improves the living environments of communities, enhances visitors' experiences and identification with organic agricultural products, increases the income of residents in rural communities, and solves problems related to the livelihood of rural communities. On the other hand, it also provides visitors with more diverse forms of tourism, relieves visitors' job and life stress, takes into account environmental sustainability, and creates diverse values for further developments in organic agritourism. Muresan et al. [15] also pointed out that agritourism is a tourist activity that links the economic, social, and environmental components of sustainable developments. In light of the rapid growth of organic agritourism, what are the key factors behind these developments? This is a question that needs to be addressed through research. To this end, assessing the developmental potential of organic agritourism is a central objective of this study. By conducting reviews of literature and on-site surveys and interviews, this study constructs a model for assessing the developmental potential of organic agritourism. The analytical hierarchy process is used, a questionnaire with acceptable expert validity is devised, and the weight assigned to each assessment criterion is determined. The study results can serve as a reference for relevant entities in formulating strategies for the further development of organic agritourism.

Table 1. Rural tourism statistics in Taiwan.

Year	2010	2011	2012	2013	2014
Visitor numbers (a)	191,302,739	213,225,792	274,392,314	268,407,868	287,867,068
Percentage of visitors in rural tourism (b)	1.2	1.3	2.4	2	2.2
Number of visitors in rural tourism (a × b)	2,295,633	2,771,935	6,585,416	5,368,157	6,333,075
Year	2015	2016	2017	2018	2019
Visitor numbers (a)	285,477,056	280,655,275	285,066,418	281,151,830	332,968,307
Percentage of visitors in rural tourism (b)	2.2	1	2.1	1.9	1.9
Number of visitors in rural tourism (a × b)	6,280,495	2,806,553	5,986,395	5,341,885	6,326,398

Source: Prepared by the authors of this study.

2. Literature Review

2.1. Organic Agriculture

The United Nations World Commission on Environment and Development (WCED) published the Our Common Future report in 1987, which defines sustainable development as “development that meets the needs of the present without comprising the ability of future generations to meet their own needs.” The goal of sustainable development is to achieve a balance in social, economic, and environmental developments. In 1988, the United Nations Food and Agriculture Organization (FAO) proposed the notion of sustainable agricultural development, which is based on the management and protection of natural resources and changes in techniques and policies, so as to conserve resources such as land, water, and flora and fauna, and meet the needs of the present and future generations. The International Federation of Organic Agriculture Movements proposed four principles, namely health, ecology, fairness, and care [5]. These principles indicate that health is integral to living systems. Those involved in organic agriculture treat the health of soil, animals, people, and the planet as inseparable and seek to ensure fairness at all levels. Organic agriculture should protect and care for the health and well-being of the current generation as well as future generations.

Leopold [16] proposed the concept of the land ethic and advocated that humans, as a member of the biotic community, should maintain harmony with the land, moderate land exploitation, and sustain biodiversity and land health. Using Leopold’s land ethic as a basis, Walck and Strong [17] delineated the associations between land utilization and land health and proposed a maintenance and feedback framework for land use actions and land health.

The origins of organic agriculture can be traced back to the organic farming method proposed by the Austrian scholar Dr. Rudolf Steiner in 1924, who hoped to use organic farming techniques as a substitute for chemical substances [18]. However, in that era, agriculture developments around the world were centered on increasing production through industrialization and commodification, and hence organic farming methods were overlooked. As countries around the world face increasing ecological damage, however, the importance of sustainable agriculture, or organic agriculture, has become more palpable. Sustainable agriculture is an agriculture system that promotes the non-excessive use of non-renewable resources in the process of agricultural production, as well as avoiding the use of pesticides and chemical fertilizers, so as to ensure land productivity and ecological equilibrium on a consistent basis [19].

The four principles of organic agriculture, as advocated by the International Federation of Organic Agriculture Movement (IFOAM), include: (1) health—in organic agriculture, soil, plants, animals, humans, and the earth in general should be regarded as a single entity that cannot be divided; (2) ecology—organic agriculture should be based on living ecosystems and ecological cycles, and its operations should make good use of, learn with, and help maintain these systems and cycles; (3) fairness—organic agriculture should build on relationships that guarantee fairness toward the common environment and life opportunities; (4) care—organic agriculture should be based on precautionary and responsible attitudes in order to protect the health and well-being of current and future generations [5]. The National Research Council [20] identified the goals of sustainable agriculture, which include (1) the ecological aspect—that is, enhancing environmental quality and the resource base; (2) the production aspect—that is, ensuring the productivity of farming systems, as well as the quality, safety, supply, and accessibility of food production; and (3) the life-based aspect—that is, enhancing the quality of life of farmers, farm workers, and society as a whole. Therefore, the ecological function of organic agricultural systems can help overcome problems associated with food, energy sources, and climate [21–23], while also providing important benefits for human health and the environment [24].

2.2. Models for Assessing the Developmental Potential of Organic Agritourism

Business models are integrated systems in which the core values developed by companies are transmitted to their customers, thus creating value for customers to achieve wealth [25]. By means

of utilizing systemic knowledge and dynamic capabilities, businesses can create customer value and rearrange value chains, business networks, and core strategies in order to create well-defined and key business models [26]. Business models represent an organization's business concepts and its methods of resource utilization. Business models strengthen the mutually beneficial relationships between business owners and customers and assist in the sustainable development of social enterprises [27]. Yang et al. [28] suggested that the business models of social enterprises should cover six elements: value proposition, business strategies, revenue mechanisms, resource deployment, value networks, and sustainable capabilities. On the basis of the five dimensions of social enterprise business models—value proposition of products/services, business strategies, market revenue mechanism, stakeholder (value networks), and sustainable capabilities—Chen and Peng [29] explored how Aurora Social Enterprise assisted indigenous tribes in Alishan Township, Chiayi County to create a comprehensive value chain network on organic agricultural production. In addition, the authors also studied the role that the Manna Organic Life Association played in the implementation of organic agriculture extension and farming among indigenous tribes, as well as their approach to creating eco-friendly environments and lands and solving the social issues faced by the tribes.

Rural industries not only offer the economic value of increasing farmers' income, but also integrate agriculture, ecotourism, and ecological conservation, so as to establish a living space for village residents as well as cultivating the concepts of ecological and community sustainability. In this regard, a rural tourism framework based on rural cultures such as production, livelihood, and ecology can be built. Wu [30] delineated six major issues pertaining to community-based ecotourism, that is, comprehending the values of a community's core resources, developing resource conservation concepts, gaining support and assistance from the community, building organizations and mechanisms, responding to industry-derived issues, and elucidating the community implications of feedback mechanisms. The study concluded that operational mechanisms and strategies centered on the environmental resources, community development, and industrial economy aspects of sustainability are salient factors determining the success of promoting community-based ecotourism. Chang [31] noted that visitors who engage in village tourism and rural tourism emphasize a farm-based rustic climate that entails stunning natural environments, landscapes, and harmonious societal cultures. Shen et al. [32] proposed a model for assessing the developmental potential of indigenous community-based ecotourism. The model included six assessment criteria along with their corresponding sub-criteria as follows: (1) community ecotourism resources—environmental and ecological conservation. natural landscape resources, biodiversity, and humanistic facilities and resources; (2) complementary environmental resources in the surroundings—a robust community mutual aid system, the scope of service of public facilities, eco-conscious tour packages, coordination with the community's external resources, and complementation with nearby scenic spots; (3) functions of community development—overall business sustainability, capability of planning common visions, cohesiveness of residents, capability of a community to increase its quality of tourism on its own, coordination capabilities of private and governmental organizations, and capability of building touristic features; (4) market potential of ecotourism—designing touristic packages, constructing a public welfare fund, designating a dedicated window for communications, marketing management of key aspects; (5) theme of community development—traditional culture of the Tsou people, in-depth touristic experiences, features of a community's identity, and conservation park planning and reform; (6) mechanisms of ecotourism developments—transport accessibility, diverse industrial developments, community-built ecotourism land size, visitor value creation, and scope of target market.

Udomwech et al. [33] put forth several directions for developing organic agriculture: (1) utilizing group system management for empowerment and development; (2) creating an organic agricultural source and a means to transport safe food from a family to society; (3) creating a balance between life, nature, and ecosystems; (4) maintaining resources and plants and inheriting local wisdom and cultures; (5) promoting sustainable development through self-adaptation, rights protection, and network innovation. Chen et al. [34] investigated the key factors of success in organic agriculture and found that in

addition to government regulations, in terms of production and sales, increasing the competitiveness of a product and delving into the organic agricultural products market are important factors as well. In terms of education promotion, the authors identified providing guidance to establish organic villages, creating an agricultural extension framework, and advocating organic concepts and verification mechanisms as salient factors. Based on the perspectives of resource-based theory, Chung et al. [35] explored the conditions and strategies required for developing recreational fishing. The authors formulated initial evaluation items and drafted a hierarchical framework based on the data collected and the contents of interviews with experts. Seven evaluation dimensions were proposed—infrastructure, internal environment, specialty products, participation from local communities and residents, experiences in activities, the culture of the fishing industry, and organizational managerial capabilities.

3. Materials and Methods

3.1. Construction of Model

According to the aforementioned statements pertaining to analyses of business modes and tourism development potential, even though organic agritourism is closely associated with the environment and various stakeholder such as visitors, communities, and residents, Taiwan's farmland size per farmer is rather small, and hence, communities serve as the core unit in organic agritourism development, which maintains the sustainability of organic and non-toxic environments. Therefore, an organic agritourism development model should consist of four features as follows: (1) the attractiveness of resources: Based on the core concept of value creation, resources are utilized efficiently to generate attractions for visitors from organic agriculture, leisure, and humanistic and natural environment resources [28–33,35,36]. In this regard, five sub-criteria were delineated for the attractiveness of resources criterion: organic agricultural resources, leisure and recreational resources, natural environment resources, farm-based stress relief and leisure, and village-based cultural heritage. (2) Market development potential: Market development potential influences revenue and sustainability. On the basis of the diversity and distinctiveness of landscape resources, relevant resources can be integrated to shape brand awareness and market competitiveness, while the convenience of transport is related to visitor accessibility [29,32]. Therefore, five sub-criteria were delineated for this criterion: transport accessibility, brand awareness, diversity of resources, distinctiveness of landscapes, and integration with other recreational areas. (3) Community development capabilities: Organic agritourism is a mode of regional development achieved through co-creations and consensuses within communities, the acquisition of relevant resources, the integration of organic agriculture and leisure agriculture, the development of relevant industries, and the marketing of innovative themes and excellent services to customers and residents, in addition to obtaining their identification [30,32–36]. Therefore, seven sub-criteria were devised for the community development capabilities criterion: capabilities of achieving community consensus, community development capabilities, innovative capabilities for tourism, marketing capabilities for tourism, resource acquisition capabilities, industrial connection capabilities, and excellent service capabilities. (4) The creation of diverse values: Creating stakeholder value, including diverse values for visitors, residents, communities, and environmentally sustainable developments [25,26,28,29,33,35]. The creation of value serves as the basis for sustainable development. Providing visitors with organic agriculture-based and leisure and recreational experiences is a measure that takes into account the sustainable usage of environmental resources. The production of healthy agricultural products enhances the value of community-based industries and improves the living environments of residents, thus creating balanced and diverse values. Against this backdrop, six sub-criteria were devised for this criterion: organic agriculture-based experiences, leisure agriculture-based experiences, improvements to living environments, enhancement of community-based industries, and development of environmental sustainability, and healthy agricultural products. Based on the statement above, this study proposes a model for assessing the developmental potential of organic agritourism, as shown in Figure 1. The model is centered

on for main criteria (dimensions) —the attractiveness of resources, market developmental potential, community development capabilities, and the creation of diverse values. Consolidating the statements above, this study developed a model for assessing the development potential of organic agritourism, as shown in Figure 1. The model covers four criteria—attractiveness of resources, market development potential, community development potential, and creation of diverse values, as well as 23 sub-criteria.

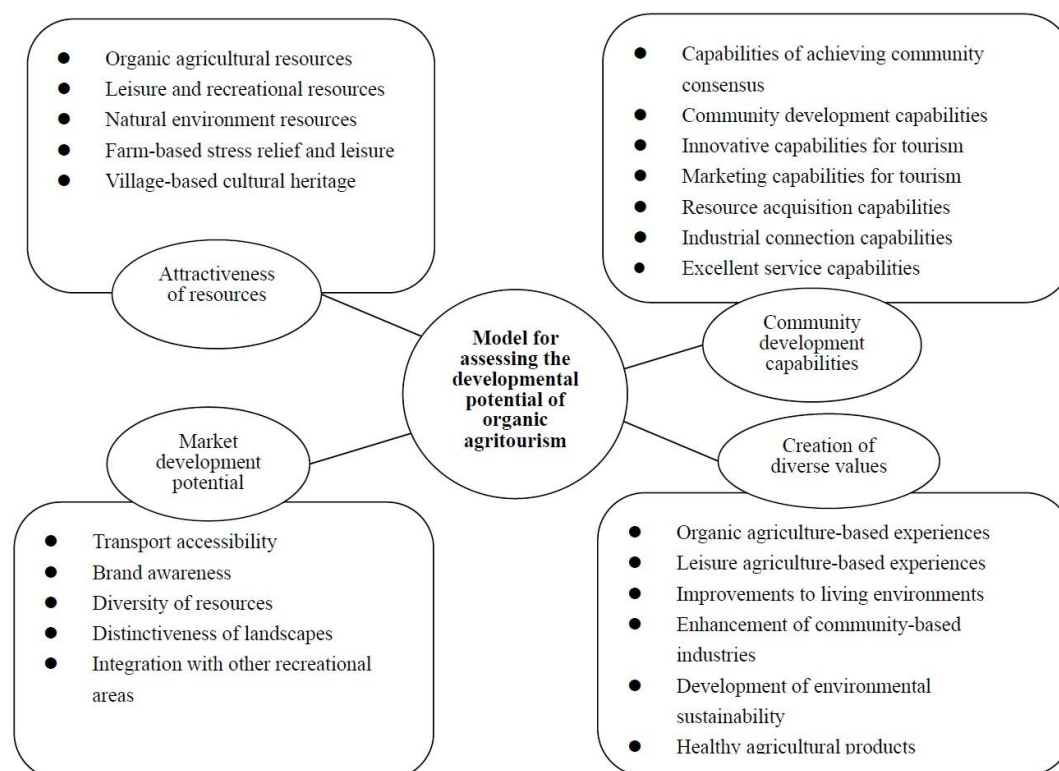


Figure 1. Model for assessing the developmental potential of organic agritourism. Source: Prepared by the authors of this study.

3.2. Description of Criteria

The model for assessing the developmental potential of organic agritourism covers four criteria and 23 sub-criteria, which are described in Table 2.

3.3. Data Collection

The initial hierarchical model was distributed to 27 experts from various sectors, including the industry, government agencies, community development associations, and academic experts with backgrounds in organic agriculture, leisure agriculture, community development, and tourism development. Among them, there were seven industry experts (managers of landscape consultant firms and organic agritourism-based experiential tourism operators); seven experts from government agencies (chief secretaries, chiefs, executive secretaries, and secretaries); seven academic experts (professors and associate professors of leisure agriculture and tourism); and six chairs of community development associations. The responses of these 27 experts (17 males and 10 females) were subjected to analytic hierarchy process (AHP) analysis, after which the results were used to develop the survey. In order to maintain consistency, the criteria for selecting respondents were expertise in organic agriculture and travel industry management, as well as proficiency in answering questionnaires. The questionnaire was administered face-to-face to the respondents between 1 March 2014 and 15 April 2014. In total, we recovered 26 valid responses, achieving an effective response rate of 97%. The criteria's relative priority was ranked (using a 1–9 scale) by the interviewed experts, after which by

an AHP pairwise comparison was performed and the experts independently evaluated the relative impact of the elements between each level [37].

Table 2. Definitions of criteria in the model for assessing the developmental potential of organic agritourism.

Criteria	Definition	Sub-Criteria	Definition
Attractiveness of resources	Generating attractive organic agriculture, leisure, humanistic, and natural environment resources to visitors	Organic agricultural resources	Organic agricultures resources such as rice and pomelo
		Leisure and recreational resources	Leisure and recreational resources such as daylilies and waterfalls
		Natural environment resources	Breathtaking natural landscapes and environments of Hualien County
		Farm-based stress relief and leisure	Farm landscapes allow one to feel relaxed and relieved of stress
		Village-based cultural heritage	History of rural life, relics, and cultural heritage
Market development potential	Shaping brand awareness and market competitiveness through the diversity and uniqueness of landscape resources	Transport accessibility	County Road 193 is near the Provincial Highway 9 and the Yuchang Highway and offers convenient transport access
		Brand awareness	Shapes the image of a brand and enhances consumers' recognition of a brand
		Diversity of resources	Diversity of resources enables visitors to meet their diverse needs
		Distinctiveness of landscapes	Distinct landscape resources attract visitors
		Integration with other recreational areas	Integration of recreational spots and activities near Yuli Township such as Antong Hot Spring, rafting in Rueisuei Township, Wuhe Tea Plantation, etc.
Community development capabilities	Capabilities related to the integration of community-built organic agriculture and leisure and recreation industries, innovative themes, and marketing strategies	Capabilities of achieving community consensus	Consensus of community residents regarding community development
		Community development capabilities	Community residents' capabilities of shaping organic agriculture and leisure agriculture industries
		Innovative capabilities for tourism	Community residents' capabilities of shaping and innovating touristic themes
		Marketing capabilities for tourism	Community residents' capabilities of promoting and marketing tourism
		Resource acquisition capabilities	Touristic resources include funding and support from governmental and non-governmental entities
		Industrial connection capabilities	Linking nearby organic agriculture and touristic agriculture industries
		Excellent service capabilities	Providing visitors with excellent facilities and services

Table 2. Cont.

Criteria	Definition	Sub-Criteria	Definition
Creation of diverse values	Creating diverse values for visitors, residents, and communities, as well as sustainable developments	Organic agriculture-based experiences	Providing visitors with organic agriculture-based experiences such as the Dongfeng Rural Life Festival, rice farming at an organic agriculture school, Wheat Cultural Music Festival, etc.
		Leisure agriculture-based experiences	Providing visitors with leisure agriculture-based experiences
		Improvements to living environments	Improvements made to the living environment of community residents
		Enhancement of community-based industries	Enhancing the quality of community-based industries, product certifications, and output value
		Development of environmental sustainability	Environmental protection and sustainable development
		Healthy agricultural products	Organic and toxic-free agricultural products

Source: Prepared by the authors of this study.

3.4. Data Analysis Methods

The study required an assessment in which every criterion was assigned a relative level of importance or a weight. In this regard, a highly effective assessment method is the analytic network process (ANP) [38], which has been gaining popularity among researchers [39]. ANP analysis comprises four basic steps [40,41]:

- Step 1 Determine the hierarchy of criteria for a problem at hand. A problem is broken down into criteria and sub-criteria elements that are then organized into a hierarchical structure;
- Step 2 The criteria are assessed by performing pairwise comparisons for various problems. A 1–9 scale is used as it is ideal for expressing opinions and consistency is achieved in ANP using a scale of absolute judgments. When both criteria contribute equally to the objective (i.e., both are equally important), a score of 1 (on the scale) is assigned. When moderate preference is given to one criterion or alternative over the other (i.e., the preferred criterion is of moderate importance), a score of 3 (on the scale) is assigned. When strict preference is given to one criterion over the other (i.e., the preferred criterion is strictly more important), a score of 5 (on the scale) is assigned. When one criterion or alternative is strictly preferred over the other, a score of 7 is assigned. When one criterion or alternative is preferred over the other (i.e., the preferred criterion is of extreme importance), a score of 9 (on the scale) is assigned [41].
- Step 3 Determine criteria priorities. The relative comparison values are then processed to rank all of the criteria. The weight W_i assigned to a criterion was derived from the pairwise comparison matrix A ;

$$A = [a_{ij}] = \begin{bmatrix} a_{11} & a_{12} & \cdots & a_{1m} \\ a_{21} & a_{22} & \cdots & a_{2m} \\ \vdots & \vdots & \ddots & \vdots \\ a_{m1} & a_{m2} & \cdots & a_{mm} \end{bmatrix}_{m \times m} = \begin{bmatrix} 1 & a_{12} & \cdots & a_{1m} \\ 1/a_{12} & 1 & \cdots & a_{2m} \\ \vdots & \vdots & \ddots & \vdots \\ 1/a_{1m} & 1/a_{2m} & \cdots & 1 \end{bmatrix}_{[m \times m]} \quad (1)$$

$$\begin{aligned}
 \bar{w}_j &= \frac{a_{ij}}{\sum_{k=1}^m a_{kj}} (i, j = 1, 2, 3, \dots, m) \\
 \bar{W}_i &= \sum_{j=1}^m \bar{w}_{ij} (i, j = 1, 2, 3, \dots, m) \\
 W_i &= \frac{\bar{W}_i}{m} (i = 1, 2, 3, \dots, m)
 \end{aligned} \tag{2}$$

Step 4 Logical Consistency. The ability to determine consistency is key when making decisions as we want to avoid making decisions when the level of consistency is low. To this end, the AHP method is a popular one as it can be used to identify and analyze the consistency of a decision-maker who is in the process of comparing elements in the hierarchy. Criteria comparison is guided by the subjective estimation of the decision-maker, hence the necessity of constant monitoring to ensure the required accuracy. With the AHP method, evaluation consistency is monitored constantly when criteria pairwise comparisons are performed. The consistency index $CI = (1/(m - 1)) \times (\lambda_{\max} - m)$ calculates the consistency ratio $CR = CI/RI$, where RI is the random consistency index, $\lambda_{\max}$ is the matrix Eigen value, and m is the matrix size. $RI = 0$ when $m = 1$ or 2 , $RI = 0.52$ when $m = 3$, $RI = 0.89$ when $m = 4$, $RI = 1.11$ when $m = 5$, $RI = 1.25$ when $m = 6$, $RI = 1.35$ when $m = 7$, $RI = 1.40$ when $m = 8$, $RI = 1.45$ when $m = 9$, and $RI = 1.49$ when $m = 10$ [40].

Therefore, we have established that $\lambda \geq m$, and the difference of $(\lambda_{\max} - m)$ is used to measure the evaluation consistency. If $\lambda_{\max}$ is closer to n , the evaluation is considered more consistent. If $CR \leq 0.10$, the relative importance of the criterion (that is, the relative priority) is considered acceptable. Conversely, when there is a high level of evaluation inconsistency, the decision-maker has to analyze and determine the reasons behind such a result.

4. Results

4.1. Consistency Testing

This study employed the analytic hierarchy process (AHP) proposed by Saaty [42]. Following an expert validation of the questionnaire, weights were assigned to the criteria in the framework for assessing the developmental potential of organic agritourism developed in this study. The AHP results generated by the 26 experts were analyzed using the Excel software. The pairwise comparison matrix comprised two parts. Part 1 was a comparison of criteria and Part 2 was the internal comparison of sub-criteria. The comparison results for the N number of criteria or factors were placed in the upper triangle of the matrix, and the lower triangle comprised reciprocal values in relative positions to the upper triangle. A pairwise comparison matrix is achieved if the comparison value of an element relative to itself is 1, in which case the relative importance of each element is subsequently calculated. In Saaty's consistency test for the validity of survey, CR measures the consistency of a decision-maker's level judgments by dividing CI and RI . Saaty [43] suggested that the random index is determined by the matrix size of a study, if CR is less than 0.10, then the judgment is fairly consistent and therefore acceptable, if CR is greater than 0.10, the decision-makers should reassess their judgment. This study sought to derive the CI and the CR of each criterion, so as to test the consistency of the paired comparison matrix. The results, as presented in Table 3, show that the CR values of all the hierarchies in the experts' responses were smaller than or equal to 0.1. Therefore, the estimates of all the experts attained an acceptable standard of consistency.

4.2. Analysis of Weights Assigned to Criteria

Once the experts' questionnaire responses were tested and shown to have acceptable consistency, weights were assigned to each criterion and sub-criterion. Table 4 presents the mean values of the weights assigned by each group of experts, while Table 5 presents the mean values of the weights assigned by all experts. On an aggregate level, all the experts perceived that the criterion "attractiveness

of resources” should be assigned the most weight. As for the second highest weight, the experts from government agencies and the chairs of community development associations concurred that it should be assigned to “community development capabilities”; the academic experts perceived that it should be assigned to “creation of diverse values”; and the industry experts opined that it should be assigned to “market development potential”.

Table 3. Consistency test results of the experts’ questionnaire responses derived through analytic hierarchy process (AHP).

Type of Expert	Criteria	Attractiveness of Resources	Market Development Potential	Community Development Capabilities	Creation of Diverse Values
Government unit experts	0.0214	0.0282	0.0388	0.0426	0.0428
Academic experts	0.0434	0.0398	0.0293	0.0336	0.0303
Community development associations	0.0593	0.0337	0.0483	0.0565	0.0167
Industry experts	0.0438	0.0240	0.0435	0.0421	0.0483
All interviewed experts	0.0389	0.0325	0.0396	0.0428	0.0339

Source: Prepared by the authors of this study.

Table 4. Weights assigned by different groups of experts to criteria and sub-criteria of the assessment model.

Criteria	Weight			
	Government Units Experts	Academic Experts	Community Development Associations	Industry Experts
Attractiveness of resources	0.3458	0.3370	0.3318	0.4180
Organic agricultural resources	0.1662	0.2903	0.2796	0.1953
Leisure and recreational resources	0.1527	0.2053	0.1487	0.1884
Natural environment resources	0.2355	0.1571	0.1850	0.1737
Farm-based stress relief and leisure	0.2052	0.1604	0.1841	0.1564
Village-based cultural heritage	0.2403	0.1869	0.2027	0.2862
Market development potential	0.2079	0.2065	0.2306	0.2073
Transport accessibility	0.2068	0.2193	0.2278	0.1948
Brand awareness	0.2347	0.1803	0.2560	0.1951
Diversity of resources	0.1387	0.1625	0.1782	0.1986
Distinctiveness of landscapes	0.2242	0.2462	0.1678	0.2398
Integration with other recreational areas	0.1957	0.1917	0.1703	0.1716
Community development capabilities	0.2407	0.1529	0.2487	0.2061
Capabilities of achieving community consensus	0.2225	0.2227	0.1430	0.1765
Community development capabilities	0.1442	0.1156	0.1390	0.1712
Innovative capabilities for tourism	0.1393	0.1070	0.1501	0.1709
Marketing capabilities for tourism	0.1368	0.1405	0.1427	0.1596
Resource acquisition capabilities	0.1013	0.1402	0.1296	0.1087
Industrial connection capabilities	0.1135	0.1685	0.1516	0.1077
Excellent service capabilities	0.1424	0.1056	0.1440	0.1054
Creation of diverse values	0.2056	0.3037	0.1889	0.1686
Organic agriculture-based experiences	0.1553	0.2200	0.1628	0.1708
Leisure agriculture-based experiences	0.1668	0.1641	0.1561	0.1807
Improvements to living environments	0.1333	0.1253	0.1444	0.1751
Enhancement of community-based industries	0.1325	0.1480	0.1674	0.1515
Development of environmental sustainability	0.2196	0.1366	0.1852	0.1952
Healthy agricultural products	0.1924	0.2060	0.1840	0.1266

Source: Prepared by the authors of this study.

Table 5. Weights assigned by all experts to criteria and sub-criteria of the assessment model.

Criteria	Weight	Sub-Criteria	Weight
Attractiveness of resources	0.3566	Organic agricultural resources	0.2359
		Leisure and recreational resources	0.1789
		Natural environment resources	0.1856
		Farm-based stress relief and leisure	0.1751
		Village-based cultural heritage	0.2244
Market development potential	0.2111	Transport accessibility	0.2113
		Brand awareness	0.2104
		Diversity of resources	0.1723
		Distinctiveness of landscapes	0.2238
		Integration with other recreational areas	0.1822
Community development capabilities	0.2051	Capabilities of achieving community consensus	0.1951
		Community development capabilities	0.1412
		Innovative capabilities for tourism	0.1379
		Marketing capabilities for tourism	0.1436
		Resource acquisition capabilities	0.1224
		Industrial connection capabilities	0.1337
		Excellent service capabilities	0.1261
Creation of diverse values	0.2273	Organic agriculture-based experiences	0.1781
		Leisure agriculture-based experiences	0.1662
		Improvements to living environments	0.1444
		Enhancement of community-based industries	0.1508
		Development of environmental sustainability	0.1821
		Healthy agricultural products	0.1785

Source: Prepared by the authors of this study.

The relative weights assigned to the criteria and sub-criteria of the model for assessing the potential of the integrated development of organic agriculture and leisure tourism are presented in Table 5. The criteria are listed successively in decreasing weight order, that is, the attractiveness of resources (0.3566), the creation of diverse values (0.2273), market development potential (0.2111), and community development capabilities (0.2051). Developments in organic agriculture and leisure agriculture are rooted in organic agriculture and environmental sustainability, and such developments form a unique and healthy form of travel. These results demonstrate that the attractiveness of resources and the creation of diverse values are the most salient factors related to the potential of the integrated development of organic agriculture and leisure tourism. Wu [30] identified six major issues pertaining to the development of community-based ecotourism and concluded that the environmental resources aspect of sustainability is an important factor affecting the success of developing community-based ecotourism. Chang [31] opined that beautiful natural environments, landscapes, and rustic farm-based climates presented through harmonious societal cultures are the factors emphasized by visitors when they engage in rural tourism and village tourism. According to Magertta [25], business models are integrated systems in which the core values developed by companies are transmitted to their customers, thus creating value for customers [25]. Chung et al. [35] and Gwo et al. [36] agreed that unique environmental resources form the basis of rural and agricultural tourism. Experiential activities enhance visitors' experiential value and attract visitors to such destinations.

5. Discussion

For the attractiveness of resources criterion, the sub-criterion organic agricultural resources had the highest weighting (0.2359), followed by village-based cultural heritage (0.2244), natural environment resources (0.1856), leisure and recreational resources (0.1789), and farm-based stress relief and leisure (0.1751). This finding indicates that organic agricultural resources and village-based cultural heritage are the main factors that attract visitors to a destination. Compared to the west coast of Taiwan, which is overdeveloped and has sustained environmental damage, the natural environmental resources and calming farm-based sceneries in the east coast are unique and rare, and thus attract visitors. Hsu [44] pointed out that experiences based on the organic rice industry, as well as local natural and cultural resources, can be developed into a touristic model for a community. Chung et al. [35] revealed that in terms of resources, building infrastructure and safe and comfortable environments, preserving unique buildings on-site, and having unique products and resources are effective means of enhancing visitors' attraction toward a destination as well as their revisit intentions. Gwo et al. [36] pointed out that promoting and tapping into a community's unique resources such as its leisure and recreational environment and landscapes can provide foundations for developing agricultural and rural tourism.

With respect to the market development potential criterion, the sub-criterion distinctiveness of landscapes was the most important (0.2238), followed by transport accessibility (0.2113), brand awareness (0.2104), integration with other recreational areas (0.1822), and diversity of resources (0.1723). This shows that in order to attract visitors to engage in organic agritourism, relevant entities must strengthen visitors' perceptions of landscape distinctiveness, improve transport accessibility, and integrate a destination with other recreational areas nearby. Saleh and Ryan [45] opined that the surrounding environment and recreational facilities of a destination are important factors that must be taken into account. This is in line with the results of this study. Liu et al. [46] advocated that the features of touristic and recreational resources that deserve more attention should be based on their rarity and uniqueness.

Among the community development capabilities sub-criteria, capability of achieving community consensus was the most important (0.1951), followed by marketing capabilities for tourism (0.1436), community development capabilities (0.1412), innovative capabilities for tourism (0.1379), and industrial connection capabilities (0.1337). Resource acquisition capabilities (0.1224) and excellent service capabilities (0.1261) were relatively low. In order to enable the comprehensive promotion of the integrated development of organic agriculture and leisure tourism, residents must reach a consensus on environmental sustainability and development of organic agricultural resources. Utilizing the planning capabilities of a community and organizing creative activities or events centered on the integration of organic agritourism and leisure tourism would allow such activities to become topics and issues of interest among the public, attract media reports, as well as gaining discussion among and participation from visitors, thereby achieving synergy in integrated marketing. Chung et al. [35] demonstrated the importance of residents' attitudes toward developments in recreational fishing and their quality of life. Furthermore, an organization should have efficient managerial capabilities. By integrating marketing and communication, manpower planning and management, holistic financial control capabilities, and professional competence, an organization can achieve more efficiency in the management of recreational fishing development. Gwo et al. [36] highlighted that community organizations and operations, the integration of the internal opinions, authorizations, and consensus of relevant parties, the enhancement of a community's administrative efficiency, and the integration of various recreational resources within a community are crucial for sustainable operations. Adamov et al. [47] examined local communities' participation in and support of agritourism activities as well as the willingness of agritourism organizations to cooperate with relevant authorities, so as to ensure the effectiveness and sustainability of agritourism activities. In this regard, providing training programs for agritourism organizations is crucial for developing human resources in the agritourism industry.

As for the creation of diverse values sub-criteria, development of environmental sustainability was regarded as the most important, followed by development of environmental sustainability

(0.1821), healthy agricultural products (0.1785), organic agriculture-based experiences (0.1781), leisure agriculture-based experiences (0.1662), enhancement of community-based industries (0.1508), and improvements to living environments (0.1444). This shows that environmental sustainability is the basis of organic agriculture, and the agricultural health products produced by the organic agricultural industry provide dietary and health benefits. Moreover, these products enhance community-based industries and rake in profits for the residents, thus improving their living environment. This finding is in line with the National Research Council's [20] three-fold objectives of sustainable agriculture—ecological sustainability, production sustainability, and life-based sustainability. The integration of organic agriculture and leisure agriculture provides visitors with organic agriculture-based experiences as well as natural farm-based leisure experiences shaped by leisure environments, thereby enhancing the distinctiveness of the visitors' leisure values and experiences. Chung et al. [35] enhanced visitors' quality of recreational experiences and touristic value by implementing experiential activities such as recreational tourism and fishing, professional guided tours, ecological observations, and creative hands-on experience. Chen et al. [34] noted that with regard to organic agriculture extension and development, it is important to build organic agricultural villages and increase experiential activities, so as to allow consumers to understand the concepts of organic agriculture and to build agricultural extension systems that promote organic concepts and validation. For production and sales, they proposed that research can enhance relevant techniques as well as the competitiveness of products. Providing visitors with organic market-related information and tapping into the organic products market can also enhance the output value of organic agriculture. Adamov et al. [47] showed the close associations between agritourism products that help enhance a local community's international profile, support improvements in agritourism products, and ensure the suitability of developments in a local community.

6. Conclusions

In light of the public's increasing awareness of pursuing healthy and friendly environments, in addition to the rapid growth of leisure tourism, the integrated development of organic agriculture and tourism has gained much attention and popularity from the public. This study constructed several assessment indicators of the developmental potential of organic agritourism by means of on-site interviews and surveys. The constructed model consisted of four criteria, namely the attractiveness of resources, market development potential, community development capabilities, and the creation of diverse values, as well as 23 sub-criteria. The analytic hierarchy process (AHP) approach was employed, and a questionnaire with expert validity was used to deduce the weights of each criterion and sub-criterion. The highest-weighted criterion was the attractiveness of resources, followed by, in order, the creation of diverse values, market development potential, and community development capabilities. The results of this study can serve as a reference for Taiwan in developing strategies to promote organic agritourism. Developments in organic agriculture and leisure agriculture are rooted in organic agriculture and environmental sustainability, and such developments form a unique and healthy form of travel. Ciolac et al. [48] indicated that the needs of various relevant stakeholders in tourism can be met by utilizing the natural and cultural heritages of rural villages, which also increases the attractiveness and competitiveness of agritourism. In contrast to regions damaged by excessive urbanization and industrialization and environmental destruction, regions with natural resources and relaxing farm views have their own distinct and unparalleled values, which are key factors that attract visitors. The study by Adamov et al. [47] revealed that visitors' experiences in returning to nature, relaxing, and engaging in rural life can be improved through touristic resources such as accommodation and activities, potential partnerships with regions of rural production, and health food and products. These approaches would in turn create a distinct tourism brand for a given region.

Ciolac et al. [48] pointed out that agritourism provides opportunities for ensuring the health of humans and rural environments, and is associated with the economic development, social and cultural life, and environment of local communities. In order to realize sustainable development

in rural environments, agritourism is an important variable that strongly affects the development of local communities and their residents' attitudes toward tourism [15]. In addition, utilizing the planning capabilities of a community and organizing creative activities or events based on organic agritourism are two approaches that provide visitors with organic agriculture-based experiences and leisure experiences shaped by natural farms and relaxing environments [4,14,35]. As a result, these activities would become topics and issues of interest among the public, attract media reports, and provoke discussion among and participation on the part of visitors. Visitors would gain in-depth knowledge regarding organic agriculture and leisure agriculture, as well as greater environmental awareness. In summary, a balanced and harmonious triple-win scenario can be created between agricultural producers, visitors, and the natural environment.

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