

## Article

# Does the Self-Identity of Chinese Farmers in Rural Tourism Destinations Affect Their Land-Responsibility Behaviour Intention? The Mediating Effect of Multifunction Agriculture Perception

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**Abstract:** Farmers are the heart of rural tourism destinations, and their land-responsibility behaviours affect sustainable development. In this study, four rural tourist sites in the suburbs of Chengdu were selected, and the structural equation model was used to analyse the influence of farmers' self-identity on their land-responsibility behaviours intention under the condition of agricultural multifunction perception as a mediation variable. The results show that, in rural tourism destinations of suburban districts of China, farmers' self-identity is an important variable that affects their land-responsibility behaviour intention. Agricultural economic function perception mediates the relationship between farmers' self-identity and land-responsibility behaviour intention. Agricultural non-economic function perception positively affects their agricultural economic function perception.

**Keywords:** self-identity; agricultural non-economic function perception; agricultural economic function perception; land-responsibility behaviour intention



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## 1. Introduction

In recent years, China's sustainable rural development has faced many challenges, some of which involve farmers' land decisions such land-responsibility behaviour intention. For example, farmers are confronted with decisions on non-point source pollution caused by the overuse of pesticides, the loss of traditional farming culture caused by the abandonment of peasants, as well as vegetable and food safety problems caused by pesticide residues. Farmers are the main subjects of the countryside and the principal force promoting the revitalisation of China's rural areas. Therefore, understanding farmers' land behaviour could help to clarify the role of policies in development of rural areas, and to aid the integrated and coordinated development of multiple industries, such as agriculture, forestry, and tourism, as well as encourage the protective use of environmental and cultural factors in land-planning.

Researchers have primarily used the research framework of the theory of planned behaviour (TPB) [1] to investigate farmers' land behaviour and policy interactions. The Theory of Planned Behaviour (TPB) is an extension of the theory of reasoned action [2]. The theory uses factors such as attitudes, social norms, and personal abilities to predict individual farmers' behavioural intentions and directions [3–6]. Farmers' decision making in agricultural practice can be rooted in certain social and cultural backgrounds, and many behaviours cannot be explained by the theoretical framework of rational behaviour alone. Indeed, the included variables in the TPB cannot fully explain the large variances in individual behavioural intentions [7,8]. Therefore, increasingly, researchers have attempted

to combine the rational logic of TPB with farmers' personal emotions, feelings, and other psychological factors to more accurately predict and manage farmers' land behaviours and policy responses [9,10]. To enhance the predictive power of TBP in farmers' decision making, social psychologists have renewed their interests recently in articulating how self-identity can play an important role [10,11]. Self-identity has a strong correlation with behavioural intention across a wide range of public health areas [12–14], consumer behaviour [15,16], and environmental behaviour [17–19]

The role of self-identity to farmers' behavioural intentions has been illustrated empirically in many studies [20,21]. Based on Self-Identity Theory, self is envisaged as a social construct in which a distinctive self-component represents each of the roles we occupy in different social settings, internally generated role-expectation [22]. It views self as a societal role and incorporates the meanings and expectations associated with that role. For farmers, when their self-perception positively matches with the behavioural outcomes, they would have more intention to undertake the action. To summarise, self-identity is one of the most important non-rational factors [23] for predicting farmers' land-responsibility behaviour.

At present, the process of urbanisation in China is quickly advancing to the countryside, and rural tourism around large cities is developing rapidly. This rapid development can be expected to affect the thinking, especially in terms of how to re-recognise themselves, agriculture and land. The development of rural tourism has changed the way that rural residents and urban populations interact, forming a new social interaction context. On the one hand, more and more Chinese urban residents flock to the countryside to experience rural life. This may cause farmers to re-examine their environment and self-identity, and thus generate a new self-identity. On the other hand, in these rural areas, part of the land is dedicated to rural tourism, and agriculture has gradually developed from having a single function (food and vegetable production) to multiple functions, such as natural landscape provision, cultural atmosphere creation, and education; furthermore, these non-economic functions are linked to economic functions through the tourism industry. At the same time, farmers' land decisions such as land-responsibility behaviour can also be affected by farmers' perception of internal self and external environment.

Self-Identity Theory emphasises that self-identity affects the cognitive style of individuals and can predict the direction of individual perception and cognitive process. Lee et al. [24] used it within the context of the Technology Acceptance Model (TAM), introducing an extension of a validated framework, and proved that self-identity influences the adoption behaviour of WebCT through perceived usefulness. From this perspective, how does farmers' self-identity affect their cognition of agricultural function? Additionally, whether it determines their land responsibility behaviour? This has not been discussed in the literature before.

The environmental protection behaviour of farmers and the issue of inheritance of traditional culture are related to future rural sustainable development. The study defined the land decision-making behaviours that are conducive to sustainable rural development as land responsibility behaviour intention. In rural tourism text, farmers' land-responsibility behaviour intention refers to their intention of behaviour aimed the environmental protection, social profit, and inheritance of traditional culture that are related to future rural sustainable development. Land-responsibility behaviour is the most important factor related to sustainable development of rural areas. The aim of sustainable development is to achieve a balance between the complementary goals of providing environmental, economic, and social opportunities for the benefit of present and future generations, while also maintaining and enhancing the quality of the land resource [25].

From a farm level, contributing to the preservation of the landscape's character, strengthening the landscape's quality, and sustainable development, the study presents the relations of farmers self-identity, agricultural multifunction perception (including agricultural non-economic function perception and agricultural economic function perception), and their land responsibility behaviour. This empirical study sought to answer how farmers' self-identity affects their perception of agricultural economic function, non-economic

function and land responsibility behaviour. The findings could assist policymakers and land use planners in decision making related to sustainable rural tourism in China.

## 2. Literature Review and Research Hypotheses

### 2.1. Farmers' Self-Identity and Its Impact on Farmers' Land-Responsibility Behaviour Intention

Self-identity, also known as role identity, is derived from Identity Theory [26]. Identity Theory is an important theory in the field of sociology that focuses on the social structural attributes of people's connection with others. Self-identity is defined by the specific role that a person plays, or considers themselves to play, in the existing social structure, such as social roles (parent or child), professional roles (farmer, student), and group roles (manager, employee). These different role classifications lead to the formation of different behavioural intentions, and people spontaneously behave according to their role expectations [27,28]. Scholars introduced the concept of self-identity to modify the traditional theoretical model of planned behaviour. They pointed out that the role positioning of self-identity triggered a habitual behaviour that supports self-concept verification [29]. In this way, people try to establish self-identity consistency between attitudes and behaviours [30,31]. Self-identity also reflects the enduring characteristics of individual self-cognition [32], and the prediction of individual behaviour through self-identity is stable. Therefore, the socio-psychological factor of self-identity is a key influencer of individual behavioural intentions [23]. The link between self-identity and the behavioural intentions of farmers has been confirmed by many studies. For example, farmers' pro-environmental behaviours, environmental protection behaviours under non-economic subsidies, as well as land decisions not only depend on rational decisions [10,33], but also variables such as perception of farmers' job independence, pride [30,34], and farmers' lifestyles [35], which have been reported to have a direct or indirect effect on farmers' individual behavioural intentions. Research from Lokhorst et al. [33] has shown that farmers' self-identity affects their pro-environmental behaviours by affecting their connectedness to nature.

Self-identity can be a direct or intermediary condition that affects farmers' land behaviour by affecting their cognition and other socio-psychological factors (such as attitudes and social norms). Therefore, based on the perspective of farmers' self-identity, this study explored the impact path of farmers' land-responsibility behaviour intention in suburban rural tourism destinations. As such, we made the following hypothesis:

**Hypothesis (H1).** *Farmers' self-identity has a positive significant impact on farmers' land-responsibility behaviour intention.*

### 2.2. Farmers' Perception of Agricultural Multifunction: Agricultural Non-Economic Function Perception and Agricultural Economic Function Perception

The concept of "agricultural multifunction" or "agricultural versatility" describes the multiple non-productive benefits of agricultural systems and land. It has been highlighted that, in addition to food production, agriculture also exerts unique production functions such as economy, society, environment, and culture, and is the result of the joint production of economic and non-economic products (Millennium Ecosystem Assessment, 2005).

With the continuous changes in agriculture and land functions in modern society, as well as the development of agricultural tourism and rural tourism, the theme of agricultural multifunction has received more and more academic attention. Much research on agricultural multifunction has focused on the national and regional levels, mainly investigating the value judgement of agricultural multifunction, land multifunction planning, agricultural compensation system design, urban agricultural development positioning, and agricultural multifunction technical practice. Practical technical methods, such as rural governance and village planning, need to be studied from multiple dimensions, such as subject and function. Multifunctional agriculture is the basic unit of decision making and a direct expression of multifunctional agriculture in families, farms, and rural communities; in particular, the agricultural multifunction at the family farm level is closely related to farmers' attitudes, ideas, and identity [36].

From the perspective of European land management practices, there is reportedly a profound interaction between the policy of agricultural multifunction and farmers [37]. However, in the context of China's tourism development, previous research on the multifunction of agriculture in China has overlooked the micro-levels of communities, businesses, families, and individual farmers. Instead, it has mainly focused on human geography, environmental science and resource utilisation, and landscape planning, involving the evaluation of the multifunction of agricultural landscapes, spatial identification, and planning management. In response to this gap in the literature, this study took farmers who are most closely connected to the land as the research object. From the perspective of the perception of agricultural "multifunction", we focused on the micro-expression of the "agricultural multifunction" of rural tourism destinations; additionally, we combined the self-identity of farmers in rural tourism destinations, the perception of the importance of agricultural multifunction, and farmers' land-responsibility behaviour intention, and in such a way, a micro-perspective for multifunctional agricultural research is provided.

Social logic and economic studies have traditionally studied agriculture as a means of making money and improving the livelihoods of farmers. At the same time, agricultural activities are also affected by various irrational factors, such as culture, family, and lifestyle preferences [38]. Therefore, we believe that farmers' perception of agricultural multifunction can be divided into two dimensions: agricultural economic function perception and agricultural non-economic function perception. Some studies have shown that there are large differences between farmers' perceptions and practices of multifunctional agriculture. For example, a survey results of Norwegian farmers' showed that the respondents identified themselves as producing not only high-quality food, but also public goods such as cultural landscapes and cultural heritage, and income maximisation is less important [39]. Another study found that residents in the state of Maine felt protecting farmland was important, but that protecting natural resources/wild landscapes was more important [40]. Hence, this study puts forward the following research hypotheses:

**Hypothesis (H2a).** *Farmers' self-identity positively affects their agricultural non-economic function perception.*

**Hypothesis (H2b).** *Farmers' self-identity positively affects their agricultural economic function perception.*

Farmers' perception of agricultural multifunction may influence their land-responsibility behaviour intention. Previous studies have shown that, at the farm level, the perception and practice of multifunctional agriculture affects farmers' environmental protection behaviours (such as reducing the use of pesticides), and farmers' protection and inheritance of traditional culture [41]. The awareness of agricultural landscape values enable farmers to create new strategies [42].

Kontogeorgos et al. [43] mentioned that the farmers' perceptions towards land environment impact their responsibility to protect it. While, the farmers were beginning to realise the importance of landscape culture and tourism and leisure functions of cultivated land. Taking tourism and leisure functions as an example, in order to create a good atmosphere and to create their own farm characteristics to attract tourists, farmers will learn how to improve the ecological environment protection of their cultivated land. Then, we believe that the farmers' agricultural non-economic perception will affect their willingness to take land responsibility behaviour positively.

Previous study has investigated farmers' attitudes about farming, the results indicated that land is always closely related to farmers' income and livelihoods, then they view themselves in a caretaker role for the land and showed their greater concern for the soil as a resource [44]. Emerton and Snyder [45] identified characteristics such as the ability to generate higher crop yields, better food supplies influence farmers' sustainable land management choices. Hence, we consider that farmers' economic perception of agricultural may influence their land-responsibility behavioural intention.

Then, the study puts forward the following research hypotheses:

**Hypothesis (H3a).** *Farmers' agricultural non-economic function perception positively affects their land-responsibility behavioural intention.*

**Hypothesis (H3b).** *Farmers' agricultural economic function perception positively affects their land-responsibility behavioural intention.*

In tourism context, the agricultural production functions of social, environmental, and cultural products have met the market demand for rural tourism products [46]. Accordingly, the non-economic function of agriculture has been transformed into economic functions through the tourism industry under the multifunctional system of agriculture [47].

Based on the previous findings outlined above, we made the following research hypothesis:

**Hypothesis (H4).** *Farmers' agricultural non-economic function perception positively affects their agricultural economic function perception.*

The proposed research framework is shown in Figure 1.

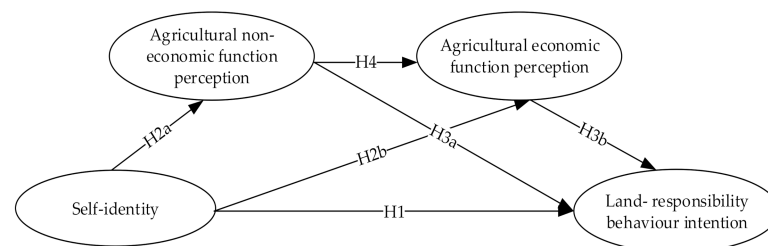


Figure 1. Research framework.

### 3. Methodology

#### 3.1. Research Area

Over nearly 10 years of development, a more mature suburban rural tourism industry cluster has formed around Chengdu, Sichuan Province, which is a region in China that well reflects multifunctional agriculture. In this study, four rural tourist sites around Chengdu were selected as our survey sites (Nongke Village in Pi County, Mingyue Village in Pujiang County, Taohuagou in Longquanyi District, and Sansheng Township in Jinjiang District).

Rural tourism has been developing in Sansheng Township, Jinjiang District, since the early 1990s. The “Five Golden Flowers”, which has an area of about 12 km<sup>2</sup>, is a typical representative area of rural tourism; it is a tourism and leisure area that integrates business, leisure, vacation, culture, and creativity. Taohuagou, Longquanyi District, is a representative area of multifunctional agriculture; it is an agricultural tourist attraction with peach and pear trees as the main rural landscape resources. Compared with Sansheng Township, the degree of government participation is relatively low, and most of initiatives are farmers’ independent development. Nongke Village, which is located in Youai Town, Pidu District, is a national agricultural tourism site; its main tourism interest is agritainment, which originated in the 1980s, whereby farmers attract citizens by opening their Sichuan bonsai nurseries for tourists to visit. The tourism industry started later in Mingyue Village, Pujiang County, which relies on local resources such as *Phyllostachys praecox*, ecological tea gardens, and ancient kilns, with the theme of pottery culture and home to the Mingyue International Ceramic Art Industry Cultural and Creative Park. With the creation of a humanistic ecological resort that integrates ceramic art production and sales, cultural display, creative experience, leisure sports, and rural vacations, this area is now a well-known rural tourism destination and a prime example of rural construction in Chengdu.



### 3.2. Sampling Procedures

From March to June 2018, random sampling method was used to select farmers from village household lists provided by local government authorities and institutions in the selected four rural tourist sites, resulting in a total of 393 farmers overall.

After 46 farmers were removed from the dataset because of missing and inconsistent answers, a total of 347 valid questionnaires were obtained. Of these, 92 were from Mingyue Village, 88 from Taohuagou Village, 91 from Nongke Village, and 76 from Sansheng Township. The socioeconomic characteristics of the study sample are shown in Table 1.

**Table 1.** Socio-economic characteristics of sample.

Characteristics of Participants	Frequency (n)	Percentage (%)
<b>Gender</b>		
Male	167	48.1
Female	180	51.9
<b>Age</b>		
18–29 years old	52	15
30–39 years old	72	20.7
40–59	167	48.1
Over 60 years old	55	15.9
<b>Education level</b>		
Under 9 years	276	79.5
High school	47	13.5
College	19	5.5
Bachelor’s degree and above	3	0.9
<b>Land area</b>		
<1 mu	152	43.8
1–5 mu	154	44.4
5–10 mu	40	11.5
10 mu	1	0.3
<b>Status of land management</b>		
Always cultivate by own	156	45.0
Lease to others	85	24.5
Hand over to the government for unified management	88	25.4
Other	18	5.2
<b>Farming time per year</b>		
None	64	18.4
1–3 months	109	31.4
4–6 months	65	18.7
7–9 months	52	15.0
10–12 months	42	12.1
<b>Other forms of economic sources</b>		
Go out for work	167	48.1
Tourism industry services	91	26.2
Other	79	22.7
None	10	3

Note: 1 mu = 0.07 acres. (n = 347, with some missing).

### 3.3. Measures

#### 3.3.1. Farmers’ Self-Identity

The three items of farmers’ self-identity were measured using the self-identity scale by Lee et al. [24]. Amendments to this scale were made with consideration to the characteristics of farmer identity, mainly from the perspective of professional identity, such as perception of farmers’ job independence, pride (Christensen & P., 2004; Key, 2005), and lifestyles (Howley, 2014). Based on previous interviews and the identity characteristics of Chinese farmers, three measurement items were used, including “I enjoy the lifestyle of being

a farmer" (F1), "Being a farmer is an honest profession" (F2), and "I have freedom and independence as a farmer" (F3). All variables were scored on a Likert-type scale that ranged from totally disagree (1) to totally agree (7).

### 3.3.2. Multifunctional Agriculture Perception: Agricultural Non-Economic Function Perception and Agricultural Economic Function Perception

The multifunctional agriculture perception scale was developed by Kvakkestad et al. [39]. In that original study, the authors designed a 16 item land multifunctional perception survey that was completed by farmers in Norwegian agricultural cultural heritage sites. In this study, to ensure the validity of the measurement items, we randomly selected 15 farmers in the surveyed area and conducted one-to-one in-depth interviews. The main question of the interview was "As a farmer, what function of the agriculture is important to you?" According to the interview results and specific items of multifunctional agriculture from Kvakkestad et al. [39], nine items were put forward by the farmers (e.g., keeping the land or countryside tidy), seven items were not suitable for the research situation (e.g., securing the workplace of myself and my family). Finally, nine items were used to measure multifunctional agriculture perception including agricultural non-economic function perception and agricultural economic function perception in this study [48].

In these items, agricultural non-economic function perceptions are as follows: carrying forward production knowledge and a lifestyle that had been passed down from ancestors (NEF1); keeping the land or countryside tidy (NEF2); maintaining the rural cultural landscape (NEF3); conserving the natural environment (e.g., by minimising pollution) (NEF4); taking care of the land and other resources left by seniors (NEF5). Farmers were asked to rate their importance on the five items, ranging from 1 to 7, representing the importance from not being important at all to being very important.

Agricultural economic function perceptions are as follows: receiving a higher income through agriculture on the basis of constant land area (EF1); obtaining the maximum economic benefits (EF2); receiving a satisfactory income (EF3); ensuring that there are sufficient food and vegetable supplies in the event of an emergency (such as a natural disaster) (EF4). Farmers were asked to rate their importance on the four items, ranging from 1 to 7, representing the importance from not being important at all to being very important.

### 3.3.3. Land-Responsibility Behaviour Intention

Considering three typical land decision-making behaviours of farmers that affect sustainable rural tourism, such as food production, farmland landscape and cultural inheritance [11,49,50], farmers' land-responsibility behaviour intention was measured by the degree of attention paid by farmers to the three following aspects during land disposal: social benefits (such as food security and reducing pesticide use) (P1), environmental benefits (such as reducing pollution and protection of farmland landscape) (P2), and cultural conservation benefits (such as teaching agricultural knowledge to future generations) (P3). All variables were scored on a Likert-type scale that ranged from totally disagree (1) to totally agree (7).

### 3.4. Pre-Test

To ensure the validity of the questionnaire, five farmers in Sansheng Township were asked to complete a pre-interview, and the words and expressions that appeared in the pre-interview were used to form a pre-test questionnaire. The pre-test questionnaire was then used in a small sample survey of 40 farmers. Analysis of pre-test sample scores was performed to identify variables that passed the reliability and validity tests. The corrected item-total correlation and the internal consistency reliability index (Cronbach's  $\alpha$  coefficient) were used to test the reliability of the four variables measured by the questionnaire, and SPSS 25.0 was used. The corrected item-total correlation values of all items retained exceeded 0.6 [51], and the Cronbach's  $\alpha$  reliability coefficients of all variables exceeded the recommended value of 0.6. After deleting any item, the overall Cronbach's  $\alpha$  reliability

coefficient of each variable did not increase significantly. Thus, we concluded that the scale had good internal consistency, reliability, and stability, and ideal internal reliability. Furthermore, the validity of the construction of the measurement scale was tested using factor analysis.

As shown in Table 2, the Kaiser–Meyer–Olkin values of the four latent variables (self-identity, non-economic function perception, economic function perception, and land-responsibility behaviour intention) all exceeded 0.6, which was greater than the recommended value of 0.5. The significance of the Bartlett’s test of sphericity was 0.000. The original hypothesis of the Bartlett’s test of sphericity was rejected, and so the questionnaire measurement scale and the construct validity of each variable could be considered as good.

**Table 2.** Reliability estimations for the questionnaire.

Variables	Items	Cronbach’s $\alpha$	KMO Test	Bartlett’s (SIG)
Self-identity	3	0.780	0.656	0.000
Agricultural non-economic function perception	5	0.799	0.855	0.000
Agricultural economic function perception	4	0.771		
Land-responsibility behaviour intention	3	0.763	0.634	0.000

## 4. Results and Discussion

### 4.1. Measurement Model Estimation

We used Mplus8.0 to perform confirmatory factor analysis to detect the structural validity of the measurement scale, including factors self-identity, agricultural non-economic function perception, agricultural non-economic function perception, and land-responsibility behaviour intention. The various inspection indicators after deleting “taking care of the land and other resources left by seniors is important to me.” (NEF5) for correction are shown in Table 3; the revised scale had a better composition reliability and structural validity. Table 3 presents all constructs’ factor loadings, Construct Reliability (CR), and Average Variance Extracted (AVE), and Table 4 presents the relationships between the constructs.

**Table 3.** Structural validity test of the measurement scale.

Constructs	Items	Unstd.	S.E.	P	Std.	SMC	CR	AVE
SI	F1	1			0.897	0.805	0.802	0.581
	F2	0.847	0.067	0.000	0.747	0.558		
	F3	0.647	0.060	0.000	0.616	0.379		
ANEFP	NEF1	1		0.000	0.548	0.300	0.808	0.517
	NEF2	1.069	0.114	0.000	0.754	0.569		
	NEF3	1.097	0.118	0.000	0.748	0.560		
	NEF4	1.064	0.111	0.000	0.800	0.640		
AEFP	EF1	1		0.000	0.793	0.629	0.859	0.605
	EF2	0.940	0.069	0.000	0.731	0.534		
	EF3	1.105	0.068	0.000	0.842	0.709		
	EF4	1.037	0.073	0.000	0.740	0.548		
LRBI	P1	1		0.000	0.849	0.721	0.810	0.593
	P2	1.003	0.072	0.000	0.839	0.704		
	P3	0.833	0.082	0.000	0.595	0.354		

Note: ANEFP = agricultural non-economic function perception, AEFP = agricultural economy function perception, LRBI = land-responsibility behaviour intention, SI = self-identity.



**Table 4.** Differential validity tests of the measurement scale.

	SI	ANEFP	AEFP	LRBI
SI	<b>0.762</b>			
ANEFP	0.183	<b>0.718</b>		
AEFP	0.450	0.517	<b>0.778</b>	
LRBI	0.399	0.157	0.563	<b>0.770</b>

Note: The diagonal values are the value of the AVE root sign, and the value of the lower triangle is the correlation coefficient between the variables. ANEFP = agricultural non-economic function perception, AEFP = agricultural economy function perception, LRBI = land-responsibility behaviour intention, SI = self-identity.

The results revealed that the model fit was  $\chi^2 = 212.604$ ,  $df = 71$ ,  $\chi^2/df = 2.9$  (less than the recommended value of 3), CFI = 0.942, TLI = 0.926, RMSEA = 0.068, and SRMR = 0.046. The factor loadings of most items were  $>0.7$ , the composition reliability of each factor was  $>0.8$ , the convergence validity was  $>0.5$ , and the fit degree of the measurement model reached an ideal value

#### 4.2. Structural Model Estimation

##### 4.2.1. Path Analysis

First, we adopted Mplus8.0 to estimate the regression coefficient between variables. Given that the data were non-normally distributed, we used the maximum likelihood estimation method provided by Mplus8.0 to verify the relationships between the variables, and the standard error and mean-variance corrected chi-square test (MLMV) as the estimation method. The results revealed that RMSEA = 0.076, SRMR = 0.048 (recommended value  $< 0.08$ ), CFI = 0.942, TLI = 0.915 (recommended value  $> 0.9$ ), and  $\chi^2(162) = 411$ ; these results show that the data fit the model well. We further tested the hypotheses. Self-identity had a significant positive influence on land-responsibility behaviour intention ( $\beta = 0.224$ ,  $p < 0.01$ ), agricultural non-economy function perception ( $\beta = 0.128$ ,  $p < 0.01$ ) and agricultural economy function perception ( $\beta = 0.319$ ,  $p < 0.001$ ), thus supporting H1, H2a and H2b. Agricultural non-economic function perception positively and significantly affected agricultural economy function perception ( $\beta = 0.557$ ,  $p < 0.001$ ), supporting H4, but agricultural non-economic function perception negatively and significantly affected land-responsibility behaviour intention ( $\beta = -0.319$ ,  $p = 0.016$ ), not supporting H3a. Similarly, agricultural economy function perception was found to significantly influence land-responsibility behaviour intention ( $\beta = 0.866$ ,  $p < 0.001$ ), which supported H3b. Results of the hypotheses tests are summarised in Table 5.

**Table 5.** Results of the hypothesis tests.

DV	IV	Std. Est.	S.E.	Est./S.E.	p-Value	R-Square	Hypothesis
ANEFP	SI	0.183	0.046	3.978	0.005	0.034	Supported (H2a)
AEFP	SI	0.368	0.051	7.216	0.000	0.398	Supported (H2b)
	ANEFP	0.450	0.086	5.233	0.000		Supported (H4)
LRBI	SI	0.172	0.084	2.048	0.008	0.364	Supported(H1)
	ANEFP	-0.171	0.132	-1.295	0.016		Not supported (H3a)
	AEFP	0.574	0.124	4.629	0.000		Supported (H3b)

Note: ANEFP = agricultural non-economic function perception, AEFP = agricultural economy function perception, LRBI = land-responsibility behaviour intention, SI = self-identity.

##### 4.2.2. Mediating Effects Estimation

Then, we used Mplus8.0 bootstrapping to test the mediating role of ANEFP and AEFP in the relationship between SI and farmers' LRBI. The bootstrapping method has more advantages than the traditional mediation analysis method because it can statistically calculate the significance of direct effects, indirect effects, and total effects within a certain confidence interval (CI) [52,53]. The results are shown in the Table 6.

**Table 6.** Mediation effect test (standardisation).

Model Test	$\beta$	S.E.	$p$	CI (95%)	Results
Total effect	0.521	0.103	0.000	[0.335,0.743]	Supported
Direct effect	0.224	0.097	0.020	[0.039,0.416]	Supported
Total indirect effect	0.297	0.075	0.000	[0.169,0.467]	Supported
SI→AEFP→LRBI	0.224	0.071	0.000	[0.152,0.427]	Supported
SI → ANEFP → LRBI	−0.041	0.023	0.076	[−0.110, −0.008]	Not supported
SI → ANEFP → AEFP → LRBI	0.062	0.030	0.039	[0.017,0.144]	Supported

Note: ANEFP = agricultural non-economic function perception, AEFP = agricultural economy function perception, LRBI = land-responsibility behaviour intention, SI = self-identity.

We found that farmers' self-identity had a significant positive impact on farmers' land-responsibility behaviour intention (total effect:  $\beta = 0.521$ , 95% CI = (0.335, 0.743)). The total indirect effect was  $\beta = 0.297$ , 95% CI = (0.169, 0.467). The ratio of total indirect effects to total effects was  $0.297/0.521 = 0.692$ . In other words, 69.2% of the impact of farmers' self-identity on land-responsibility behaviour intention was affected by agricultural non-economic function perception and agricultural economic function perception. Results also indicated that self-identity directly or through intermediary conditions affected land-responsibility behaviour intention.

In addition, the mediation test of agricultural economic function perception revealed that the significant impact of self-identity on farmers' land-responsibility behaviour intention was mediated by agricultural economic function perception ( $\beta = 0.224$ , 95% confidence interval (CI) = (0.152, 0.427)). However, the mediation test for agricultural non-economic function perception was not supported. This means that farmers' agricultural non-economic function perception mediates the relationship between farmers' self-identity and land-responsibility behaviour intention (H2a) was not supported. The results of each hypothesis test are shown in Table 6.

#### 4.3. Discussion

This study investigated the impact of farmers' self-identity on land-responsibility behaviour intention from individual perspective of local farmers and examined the mediating effect of agricultural multifunctional perception on the relationship between these two variables. Two main research conclusions were obtained.

First, in rural tourism destinations in suburban districts of China, farmers' self-identity is an important variable that affects farmers' land-responsibility behaviour intention, whereby the higher the level of farmers' self-identity, the more likely they are to adopt land-responsibility behaviours. On the one hand, farmers' self-identity can directly affect farmers' land-responsibility behaviour intention. On the other hand, self-identity can also positively influence farmers' land-responsibility behaviour intention through the mediating effect of agricultural multifunctional perception, which means that farmers' self-identity will further initiate rational behaviour decision making through the functional evaluation of agriculture. That is, self-identity support land-responsibility behaviour, directly and indirectly supporting the perceived economic function of agriculture.

Second, agricultural non-economic function perception negatively and significantly affected land-responsibility behaviour intention. It was found that some non-economic benefits of agriculture, such as environmental protection and social culture, may come at the cost of individual farmers' interests, which supports previous findings [54,55]. Therefore, although farmers know that adopting certain technologies or programs can improve the non-economic functions of agriculture, they may not adopt corresponding land behaviours [56,57]. In other words, although farmers can envision the non-economic functions that their land-responsibility behaviour may bring about, they may not adopt it, even oppose this kind of behaviour. The main reason for this could be that the farmers bear the additional economic costs for land-responsibility behaviour.

Third, the analysis of the mediating effect shows that the perception of the importance of agricultural multifunction is an important mediating condition for the influence of farmers' self-identity on farmers' land-responsibility behaviour intention. However, the utility of importance perception of agricultural economic function and that of non-economic function are different. Self-identity can influence farmers' land-responsibility behaviour intention through the mediating role of agricultural economic function perception. However, agricultural non-economic function perception does not have a direct mediating effect; that is, although farmers perceive the non-economic functions that their land-responsibility behaviour may bring, this does not directly stimulate them to generate land-responsibility behaviour intention. Farmers' agricultural non-economic functions perception can only significantly influence their land-responsibility behaviour intention through the intermediary effect of agricultural economic functions of land. That is, only when farmers perceive that non-economic function is positively related to economic function does the corresponding land-responsibility behaviour intention occur. Furthermore, the likelihood of adopting land-responsibility behaviours will increase if farmers feel that the non-economic functions of agriculture are accompanied by economic functions that can offset the perceived costs.

## 5. Conclusions

The results indicate that self-identity is a vital factor that affects Chinese farmers' land-responsibility behaviour intention in rural tourism areas. What is more, "not well respected, rather perceived as a low-rank profession" and "the low social status" are primary factors discourage youths from getting involved with farming [58]. Therefore, the government should understand how farmer perspective the value of farming and consider its role in growing the rural economy and rural development.

Second, the conclusions of this study highlight the path dependence of farmers on the economic functions of agriculture. The income of farmers is generally low in China and obtaining economic benefits through agriculture remains the most important motivation for farmers to take land-responsibility behaviour. Therefore, only when farmers get the economic benefits of the tourism industry caused by the non-economic functions of agriculture, will farmers' land-responsibility decisions be effectively stimulated.

Third, farmers' agricultural non-economic function perception positively affects their agricultural economic function perception. That is, farmers can perceive the transformation of agricultural non-economic functions into economic functions, thereby increasing their understanding and support for sustainable land policies. For the sustainable development of villages, our findings are consistent with those of Ahnström et al. [56] and Reimer et al. [57], among others. We believe that investing in the non-economic functions of agriculture will be beneficial to rural communities and their sustainable development. The multifunctional development of agriculture is of great significance to the protection of the rural landscape, ecology, the cultural environment, and the protection of biodiversity and cultural heritage; these factors form the basis for agriculture to generate economic benefits in tourism and other industries. The tourism industry is an important means by which to transform agricultural non-economic functions into economic functions. When farmers in these areas understand that agricultural non-economic functions can achieve economic functions through tourism and other industries, they could be more likely to adopt land behaviours that are more conducive to sustainable development. For agricultural heritage sites and remote rural tourism sites with abundant tourism resources, agriculture and farming culture are important tourist attractions, and rural tourism can be developed with the help of agricultural non-economic functions. Therefore, rural tourism can not only be used as a means by which to alleviate poverty through the development of rural areas but could also enable farmers to experience the transformation of agricultural non-economic functions into agricultural economic functions, thereby stimulating local farmers to adopt more sustainable land decisions.

## 6. Limitations and Future Research

Due to differences in economic development levels, land policies, and location relationships between these sites and central cities, the conclusion from the four destinations cannot fully represent other rural tourist destinations in China. All the variables selected in this study were assessed using cross-sectional data, and future work could further track variables such as farmers' self-identity, agricultural multifunction perception, to better understand how these variables impact farmers' land awareness, and land-responsibility behaviour intention in the context of rural tourism development. In addition, farmers' attitudes, values, and land behaviour were different [59]. Therefore, future research should acknowledge the heterogeneity between "farmers", and strengthen the localisation and differentiation of cultural and social factors. For example, the large wave of people returning home to start a business in China has resulted in huge, ongoing alterations in the structure of farmers in rural tourism destinations. Future work should also consider further analysing the psychology and land decision-making behaviours of different types of agricultural practitioners.

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