

Research Note

## Farmers' Policy Identity of the Under-Forest Economy in Jingshan City, China: the Intermediary Effect of Social Trust and Moderating Role of Environmental Cognition

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### 【 Summary 】

After collective forest tenure reform, the under-forestry economy of China developed very quickly, and achieved certain results experience of under-forest economy at a county level in Jingshan of Hubei Province. This research explores interrelationships among people's participation in and participation motivation in the forest economy, social trust, and policy propensity, with the goal of understanding people's relevance toward participation motivation, social trust, and policy tendencies, as well as social trust's mediating role in participation motivation's influence on policy identity. The experimental period ran from mid-June to the end of December 2017. The purpose was to determine attitudes of farmers who had not previously taken part in the under-forest economy. Using purposeful sampling, a questionnaire survey was carried out among farmers who add not taken part in the collective forest rights transaction system in 14 districts of Jingshan City, Hubei Province, China, and related data and information were obtained. A regression analysis, and mediation and moderation process analyses were used to study the intermediary effect of social trust and whether there was a moderating intermediary effect under the interference of environmental cognition. The main variables had mutual influences. At the same time, the intermediary effect of social trust and the mediating role of environmental cognition were found to be significant, indicating that the mediating model of regulation was valid. It was found from this study that social trust had a partial influence on farmers' policy identity, and social trust under the adjustment of environmental cognition affected the choice of identity. Problems of individual cases might also be a blind spot that is often overlooked in under-forest economic policies. Therefore, in the future, social trust can be used as a judgment. The establishment of good social trust is the foundation for government and farmers to promote the under-forest economy and can help farmers recognize and promote rural values.

**Key words:** under-forest economy (UFE), participation motivation, social trust, environmental cognition, policy identity.

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## 研究簡報

## 中國京山市農戶對林下經濟的政策認同-社會信任的中介作用與環境認知的調節作用

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### 摘要

在中國的集體林權制度改革後，林下經濟發展快速，而湖北省京山市在推動林下經濟上的效果顯著；研究農戶對林下經濟的預備轉型動機、社會信任、環境認知與政策認同間的關聯性驗證研究所提出模式的適配度與變數間的關係。以立意抽樣對京山市14個行政區沒有參與集體林權交易制度的農戶進行問卷調查，獲取相關資料資訊。採用迴歸分析、中介及調節變數分析，研究社會信任的中介效果，及其在環境認知干擾下的調節式中介效果是否存在。在主要變數中彼此具有相互的影響性，同時社會信任的中介作用與環境認知的調節作用在研究中具有顯著性，說明調節式的中介模型是成立的。從案例發現，社會信任能對京山市農戶在政策認同上具有部分影響力，而環境認知調節下的社會信任會影響農戶在政策認同的選擇。由個案的問題，亦可能是林下經濟政策常被忽視的盲區，故未來可根據社會信任作為判斷，建立良好的社會信任是政府部門和農戶在推動林下經濟的基礎，有助於農戶認同與共享農村資源的提升。

關鍵詞：林下經濟；轉型動機；社會信任；環境認知；政策認同。

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Forest economy policy is a link between the government and local people that exhibits harmony and symbiosis. Although implementation of agro-forestry ecological policies in the past had biotechnological or economic value, if there was a lack of social trust, then the policy could easily encounter resistance or blind spots (Howe et al. 2005, Lon, 2009, Chuang and Yen 2017). Social trust is a phenomenon that reflects social relations and trust relationships. It is the level of trust among the majority of people in society, and includes special trust and general trust (Li and Liang 2002, Cai and Zhu 2014, Yang and Zhu 2016). Thus, the government should aim to determine farmers' understanding of a policy and execute a corrective strategy from

the level of social trust (Li et al. 2020). Under reform of the collective forest rights system, series of policies were issued by local governments to encourage and support the featured forestry industry with a primary focus on economic forests and the under-forest economy (UFE). One of the most important purposes of this reform was to stimulate farmers' enthusiasm for production (Zhu et al. 2018, Zhi et al. 2019). However, not all farmers shared this enthusiasm. Based on past experiences, difficulties in promoting the UFE were mainly due to farmers having insufficient awareness of the importance and necessity of developing an UFE. In addition, with the long-time influence of inherent ideas and conservative thought in traditional cultivation culture, older

generations are sometimes reluctant to adopt new technologies. The reason originates from pure peasant households' family economic conditions not being allowed. In addition to this aspect, with weak self-reliance and self-development abilities, the benefits available to farmers are shared among them; however, many are unwilling to bear the relevant risks together. Farmers are reluctant to take risks due to insufficient government support funds and a lack of financial support and necessary policies (Chen et al. 2012a, Li et al. 2012, Xu et al. 2013, Zhi et al. 2019). Yang and Zhu (2016) stated that social trust has a positive effect on farmers' participation in productive activities in rural areas and can be used as a standard or guide for farmers' participation in productive activities. In addition, social trust can also be used as a regulatory and social ethics standard to reduce the cost of policy implementation (Harring 2013, Zhang and Zhao 2019). Hence, social trust can determine farmers' trust in current policies and enhance the cohesion of stakeholders' cooperation. At the same time, policy identity can also be regarded as key to promoting participation, solidarity, and policy implementation (Groeling and Linnememan 2008).

In terms of Chinese UFE development and guidance mechanisms, Hubei Province, a pioneer in promoting the UFE, issued "Opinions on Vigorously Promoting the Development of Under-forest Economy (E-Zheng-Ban-Fa#201275)" in November 2012. This comprehensive launch of the UFE produced outstanding achievements in ecological protection and gross output. For example, underwood planting was carried out in citrus-producing areas of Hubei Province, which improved the forest land utilization rate, balanced the farmland ecosystem, and produced a 15% increase in profits (Chen et al. 2012b). Compared to traditional farming methods,

the process of forest farming in Hubei Province was more beneficial for farmers and also protected land resources. Although there are many successful cases, there are still unsatisfactory results, and so this research focused on this aspect. For example, recalling a case in Yanmenkou Township, Jingshan City, Hubei Province in 2017, the forest oil development model of Santongzi was introduced to provide opportunities for poor households. By 2019, the planting area of the entire city was 700 ha (Jingmen Municipal People's Government 2020, Zhang et al. 2020). However, due to the low survival rate of *Idesia polycarpa* Maxim., the improper management of the crop caused the loss a proportion of afforestation of more than 50% of seedlings and the lack of rapid income, so farmers were conservative or suspicious about participation, and thus it is necessary to explore the influence of social trust (Zhang et al. 2020).

Although the under-forest policy has many advantages, there are still many problems in reality (e.g., farmers' evaluation of the policy and production). Hence, there is a need to understand farmers' social identity toward the policy to make it more ideal (Eriksson et al. 2013, Ford et al. 2014, Chuang and Yen 2017). There is scant literature on farmers' social trust, participation motivations, environmental cognition, and policy inclinations, as well as on farmers who have not yet participated in forest economic policies in China. Therefore, this paper examines participation motivations and policy identity of farmers who have not yet joined in the forest economy based on social trust, in order to understand relationships among participation motivation, social trust, and policy identity. Social trust may play an intermediary role in the relationship between participation motivation and policy identity. Second, the moderating effects of environmental cognition on

relationships among participation motivation, social trust, and policy identity were investigated.

### Research area and objectives

The UFE has been promoted in many cities, but there are still many areas to which attention has not been paid or where there is a lack of enthusiasm, resulting in a lack of farmers' knowledge of developing the UFE and restrictions on the overall atmosphere. Therefore, purposeful sampling was adopted in this survey as the basis for sample selection. The advantage is that it can select cases with rich information according to the research purpose and strategy. This kind of research with a special purpose does not need to summarize all types of groups and can obtain highly representative samples (Patton 2001). According to the follow-up study, farmers who had not participated in the forest economic policy were mainly selected to understand whether their passivity stemmed from a relationship of social trust, which made them have a reserved and wait-and-see attitude to join.

The sources of data and sample selection criteria are first introduced. The selection criteria of participants had to meet the requirements of citizens over 18 years of age in accordance with the General Principles of Civil Law of the People's Republic of China, and those who did not take part in the collective forest rights transaction system. These farmers were chosen in order to determine what they thought about the UFE policy and why they hesitated; perhaps they sometimes encountered a new set of circumstances or temporary changes in plans for farmers (who did not necessarily have to be involved). A policy identity to participate in the UFE may easily cause cognitive errors or bias in the measurement of participation factors. In or-

der to ensure the quality of the questionnaire, when conducting the questionnaire survey, parts of each questionnaire involving proper nouns were explained (orally explained by the researcher). One-to-one answers were used to fill out the questionnaires to reduce the probability of invalid answers. Before filling in the answers, the proper terms or contents of the questionnaire were explained. If the subjects had any questions, they were answered immediately.

Before issuing the questionnaires, a pre-test was carried out, and according to results of the experiments, the study deleted items whose Cronbach's numerical  $\alpha$  value was  $< 0.7$  before revisions and formal issue. Consequently, the questionnaire was in line with validity requirements. The procedure of developing the questionnaire included three stages: a preliminary test, a pilot test, and the formal study. In the first stage, 50 farmers took the preliminary test; in the second stage of both times to become a member of the UFE, 30 farmers took the pilot test. As predicted by the questionnaire data for the analysis, inappropriate items were modified and a factor analysis of the preliminary questionnaire was conducted resulting in the formal questionnaire (Table 1). Then the formal questionnaire was issued from mid-June to the end of December 2017 in Jingshan City, Hubei Province. We finally conducted a formal questionnaire survey and collected the final data. According to the sample types defined above, 14 areas were sampled in the study area, including Xinshi, Yongxing, Caowu, Luodian, Songhe, Pingba, Sanyang, Lulin, Yangji, Sunqiao, Shilong, Yongzhuo, Yanmenkou, and Qianchang etc. townships. Each area was represented by 10 people, and so 140 questionnaires in total were distributed. After eliminating invalid questionnaires (including omissions or wrong meanings, large differences in answers, etc.),

**Table 1. Structure of the questionnaire**

Description	Cited references
<p style="text-align: center;"><b>Participation motivation</b></p> <ul style="list-style-type: none"> <li>• Reduce the load on the ecological environment and illegal overuse.</li> <li>• Improve the utilization efficiency.</li> <li>• Can be helpful for biodiversity protection and sustainable development.</li> <li>• Improve the quality of life in rural areas.</li> <li>• Highlight the successful participation experience of relatives.</li> <li>• Solve rural aging and agricultural problems.</li> <li>• Develop the under-forestry economy as a very important approach to boost the economic development of forest regions and increase farmers' income.</li> </ul>	<p>Blakemore (2003) Li et al. (2012) Chen et al. (2012a) Xv et al. (2013) Zhu et al. (2018) Zhi et al. (2019)</p>
<p style="text-align: center;"><b>Policy identity</b></p> <ul style="list-style-type: none"> <li>• Provide regular training and guidance.</li> <li>• Support programs and policy guarantees of forest rights.</li> <li>• Divide rights and responsibilities to encourage stakeholder cooperation.</li> <li>• Strengthen rural financial reform and improve financing efficiency.</li> <li>• Develop the under-forestry economy as a technology-model revolution, which needs to be protected by high-tech.</li> <li>• As standard collective forest right circulation, improve the forest insurance system, build a perfect forestry socialization service system, and strengthen collective forestry financial support.</li> </ul>	<p>Gilbert &amp; Terrell (2002) Maehar &amp; Meyer (1997) Zhang (2000) Winter et al. (2004) McFarlane (2012)</p>
<p style="text-align: center;"><b>Environmental cognition</b></p> <ul style="list-style-type: none"> <li>• Encourage harmony between humans and the environment.</li> <li>• Have functions of natural and agricultural cultural education.</li> <li>• Promote fallow farmland and idle forest land as important habitats.</li> <li>• Perfectly protect ecological species and activate ecosystems.</li> </ul>	<p>Hsu &amp; Cheng (2005) Hsiao et al. (2013) Gong et al. (2017)</p>
<p style="text-align: center;"><b>Social trust</b></p> <ul style="list-style-type: none"> <li>• Governments can be impartial in making policies and offer many preferential policies.</li> <li>• Develop technical guidance and technical training.</li> <li>• Carry out innovations according to opinions and suggestions.</li> <li>• Establish a rational property right structure and forest circulating mechanism.</li> <li>• Transfer rights of foresters in the forest who are at a disadvantage, as their interests are not reflected.</li> </ul>	<p>Poortinga &amp; Pidgeon (2003) Harring (2013) Yang &amp; Zhu (2016) Chuang &amp; Yen (2017) Zhang &amp; Zhao (2019)</p>

121 valid questionnaires were collected, for an effective rate of 86.4%.

### **The questionnaire design and statistical analysis**

According to previous literature and based on a field investigation, the questionnaire design was based on the principle of selecting keywords; this study used self-compiled questionnaires to investigate discussion of the problems of farmers' UFE in Jingshan (Table 1). During the survey, the processes were field research, questionnaire development before the start of the survey, the formal questionnaire, and final processing and analysis of the data. In this paper, the questionnaire contained 5 parts, that were labeled "subjects' social and economic background", "participation motivation", "policy identity", "social trust", and "environmental cognition". Cronbach's  $\alpha$  coefficients of latent variables were found to range 0.82 to 0.89. The descriptive statistical analysis and reliability analysis were based on the background of participants. Research data reliability consisted of participation motivation ( $\alpha = 0.892$ ), social trust ( $\alpha = 0.825$ ), policy identity ( $\alpha = 0.822$ ), and environmental cognition ( $\alpha = 0.850$ ), all of which had good credibility ( $\alpha > 0.8$ ). The study next further transformed the factors into variables and finally performed a regression analysis using Syn Process vers. 34 for SPSS 22.

### **Theoretical and research hypotheses**

Motivation is a continuous psychological process, which reflects demand and the dominant behavior of a person (Zhang 2000). So it is the driving force that reflects the current needs of farmers and promotes change (Steers and Porter 1991). The final policy identity of farmers is the internal psychological activity of individual decisions on

behavior attitudes or evaluations of things and then making a choice that reflects the representation of things (Maecher and Meyer 1997, Zhang 2000). Social trust is a reference index that reflects the degree of recognition of social or policy trust relationships and affects one's final judgment (Hardin 2002, Wang et al. 2006). The UFE system is an important approach to achieve an efficient allocation of resources and also an objective requirement to practically protect and realize farmers' interests in policy.

Participation motivation has a significant impact on social trust. Most policy studies have suggested that trust is correlated with the motivation to participate, while trust and intensity also have positive impacts on the intent to participate (Zheng 2000, Cohen et al. 2001, Blakemore 2003). From a psychological perspective, motivation consists of intrinsic motivation and extrinsic motivation. Intrinsic motivation refers to an individual's voluntary behavior, which is stimulated, guided, and integrated by internal factors (e.g., from self-interest or need) (Iso-Ahola 1980). On the other hand, external motivation is influenced by the external environment (Deci and Ryan 1985). Meanwhile, this study considered that the degree of farmers' social trust belonged to external motivation. As there is presently no internal factor from their own needs to explore the degree of social trust, this study attempted to explore the relationship between farmers' social trust and motivation, and proposed this hypothesis.

H1: Participation motivation has a significant impact on social trust.

The motivation to participate in policies will enhance the recognition and implementation of public policies (Thomas 1995, Gilbert and Terrell 2002, Do 2010). For example, when the motivation to participate is mainly a livelihood demand, Stancheva et al. (2007)



and Minang et al. (2014) believed that using a reasonable incentive for afforestation would be an incentive to provide basic security and resource assistance for farmers who are willing to transform and can help support their livelihood and allow local agriculture to stably develop (Gilbert and Terrell 2002, Stancheva et al. 2007, Minang et al. 2014). We proposed this hypothesis.

H2: Participation motivation has a significant impact on policy identity.

Weber (1997) described the traditional Chinese's societal trust mechanism as being based on familiarity and on relationships that influence farmers' choices or judgments. The general trust between farmers and village cadres, villagers, and neighbors, and the special trust among family members and relatives directly impact farmers' willingness to engage in "policy identity" (Cai and Zhu 2014, Lian 2020). This research attempted to coordinate research into social trust and policy identity dimensions, and proposed this hypothesis.

H3: Social trust has a significant impact on policy identity.

When discussing social beliefs based on Coleman's argument, the degree of trust is linked to people's behavior and usually affects their action decisions. Social trust has been verified in studies on forestry policies over the years and can assist farmers in judging the purposes of policies when they lack the required knowledge (Siegrist et al. 2001, Winter et al. 2004, McFarlane 2012, Ford et al. 2014). Social trust plays a key role in the traditional thinking of Chinese farmers. This trust is referred to as "social relations in Chinese" as the sound operation of the system in providing background support (Cai and Zhu 2014, Yang and Zhu 2016). Social trust and policy identity were independent variables in the past. In particular, policy identity is an important component of social trust (Ford et

al. 2014, Lian 2020). This research attempted to coordinate research into social trust and policy identity dimensions, and used social trust as an intermediary variable to explore the mediating effect of participation motivation on the policy identity dimension. Based on a review of the previous literature, there may be mutual relations among participation motivation, social trust, and policy identity, and we proposed this hypothesis.

H4: Social trust has an intermediary relationship in the relationship between participation motivation and policy identity.

Environmental cognition can be considered an important process to achieve protection of natural resources, maintenance of ecological balance, and sustainable development; it is a skill of executing environmental knowledge and action strategies. Individuals can perceive existing problems, and then through interactions between humans and the natural environment, they can cultivate feelings and appreciation, and explore the environment, leading to responsible values regarding the natural environment (Hsu and Cheng 2005, Hsiao et al. 2013, Gong et al. 2017). From the perspective of related environmental issues, in terms of farmers' cognition of environmental pollution and social trust, there is an interactive relationship between local people's cognition of environmental issues and trust in government in China, which will affect subsequent behavioral decisions (Sun 2016, Gong et al. 2017, Wang et al. 2020). Based on this and taking environmental cognition as a factor that regulates social trust, the following was deduced.

H5: Environmental cognition has a significant effect on social trust and the policy identity-moderating process.

The relationship model of participation motivation, social trust, environmental cognition, and policy identity is shown in Fig. 1.

Regarding the basic attributes of participants, males (64.5%) comprised a greater proportion than females (35.5%). Those aged 31–40 yr were the most prevalent (39.7%), and those over 61 yr (inclusive) were the least prevalent (5%). Educational levels were mostly secondary education (51.2%) and higher education (31.4%), and the number of people without an education was the least prevalent (4.1%). The study initially examined the mutual influences of participation motivation, social trust, and policy identity; then the research questions tested the model and discussed 5 assumptions of the results.

#### Analysis of the influence of participation motivation, social trust, and policy identity

(1) Participation motivation has a significant impact on social trust. Regarding the influence of participation motivation on social trust, the results first showed that the  $\beta$  and  $p$  values of 0.523 ( $p < 0.05$ ) were significant, and there was no collinearity (variance inflation factor (VIF) = 1.000 < 3). The explanatory power of participation motivation in the social trust model was 27.3%. Participation motivation had a significant impact on social trust. The stronger the participation motivation was, the higher was the degree of social trust. Participation motivation and social trust

had mutual influences; and so hypothesis 1 was true (Table 2, Fig. 2). Based on this inference, even if farmers had high willingness to invest in participation of the state under a forest economic policy, when they did not trust or could not get a guarantee from the local government's service work, then their inner psychology and policy identity would also change. That is, when farmers had clear participation motivation, it meant that they agreed with the degree of trust, reliability, and overall well-being of a certain policy, and so the intention to participate would be higher. The UFE needs to balance the demands of various stakeholders (farmers, local governments, agricultural cooperatives, production, and education cooperation), by building social trust mechanisms between subjects and objects to achieve recognition of the policy goals.

(2) Participation motivation had a significant impact on policy identity. The influence of participation motivation on policy identity showed that the  $\beta$  value and  $p$  value of 0.592 ( $p < 0.05$ ) were significant, and there was no collinearity (VIF = 1.000 < 3). The explanatory power of the model of participation motivation to policy identity was 32.7%, which meant that the motivation of people to participate in the forest economy affected the

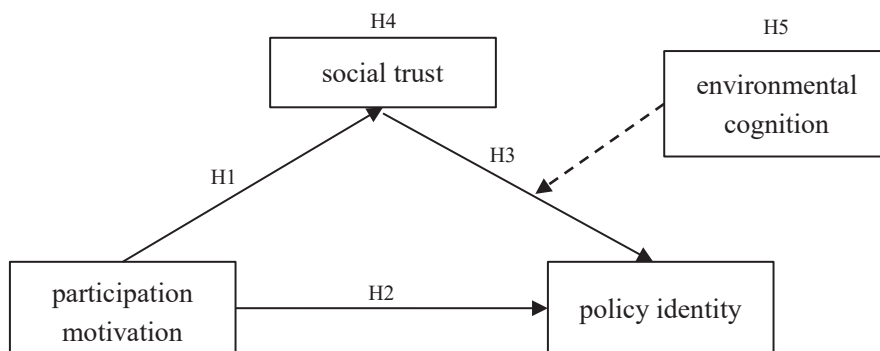
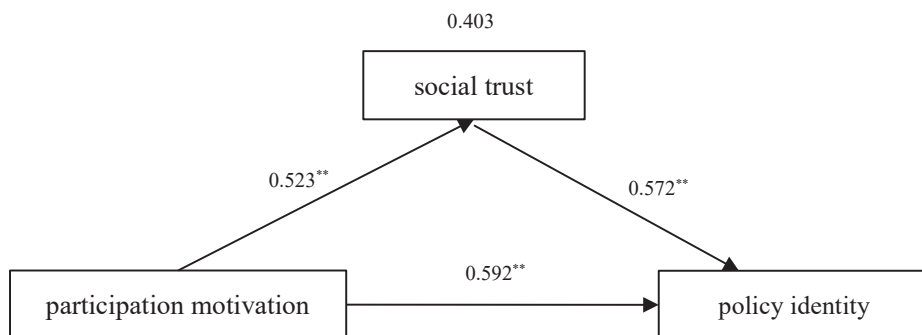


Fig. 1. Relationships among participation motivation, social trust, and policy identity.





**Fig. 2.** Path coefficients of participation motivation, social trust, and policy identity.

**Table 2.** Analysis of the influence of participation motivation, social trust, and policy identity

Independent variable	Dependent variable							
	Social trust				Policy identity			
	Model 1		Model 2		Model 3		Model 4	
	$\beta$	<i>t</i>	$\beta$	<i>t</i>	$\beta$	<i>t</i>	$\beta$	<i>t</i>
Participation motivation	0.523	6.690***	0.592	8.012***	-	-	0.403	5.012***
Social trust	-	-	-	-	0.572	7.605***	0.361	4.490***
<i>F</i>	44.752		64.193		57.841		47.344	
VIF	1.000		1.000		1.000		1.376	
$\Delta R^2$	0.273		0.327		0.350		0.445	
Hypothesis testing and results	valid		valid		valid		valid	

VIF, variance inflation factor.

judgment of their policy identity. When improving one’s livelihood was the motivation for participation, they also preferred to choose policies that could improve their economic benefits. So hypothesis 2 was true (Table 2, Fig. 2). Because the motivation to participate had high purpose and demand, this demand and driving force could meet the needs of farmers in traditional agricultural participation, and so it would affect their preferences and choices of policy identity.

(3) Social trust had a significant impact on policy identity. In terms of the influence of

social trust on policy identity, the  $\beta$  value and *p* value of 0.572 (*p* = 0.000) were significant, and there was no collinearity (VIF = 1.000 < 3). The explanatory power of social trust in the model of policy identity was 35%, which showed that when the degree of performance of social trust in policy promotion, fairness, and practice had a significant impact on the choice of policy identity, then policy identity would differ, and so hypothesis 3 was true (Table 1, Fig. 2). Forest ownership is not common among farmers (i.e., the production brigade takes the place of collective members

to exercise ownership or large-scale contracts). With all the economic forms of woodland, ownership is basically defined by a few people. In effect, the participation of ordinary farmers was low. It is especially significant to strengthen forestry insurance and improve the transaction circulation platform for forest rights, and so hypothesis 3 was true (Table 2, Fig. 2).

(4) Social trust had an intermediary relationship with participation motivation and the policy identity relationship. The participation motivation factor is the degree to which it influences social trust (Table 2). According to the research objectives, we could judge whether "social trust" had an intermediary influence. Taking the significance of the above results as a standard, when the current statements are all in line with the significance, we further took social trust as an intermediary variable and analyzed its effect on the dependent variable. Results showed after introducing social trust as a mediating variable, the value of  $\beta$  decreased from the original 0.592 to 0.403, there was no collinearity ( $VIF = 1.376 < 3$ ), and the influence of participation motivation on policy identity was weakened and significant ( $t = 5.012$ ;  $p = 0.000$ ). This shows that social trust had a partial mediating effect on policy identity in participation motivation, and the explanatory power of the model was 44.5%. This supported hypothesis 4. Therefore, when we inferred that farmers'

social trust and policy identity tended to be low, their intention to participate may eventually change despite the initial motivation for participation.

After the mediation variable analysis (Table 3), the confidence interval of the indirect effect of participation motivation on policy identity was 0.129~0.448, and the confidence interval of the direct effect was 0.345~0.795. An indirect effect and direct effect existing at the same time indicated that this model had an indirect mediating effect. Therefore, the participation opportunity affects the importance of social trust factors, which in turn affects the performance of farmers' policy tendencies. Social trust is a long-neglected factor in improving the management mechanism of agricultural and forestry ecological resources in Jingshan City. Government credibility is the ability of the government to win the social trust of farmers. That is, the degree of social trust can make people willing to believe in unknown risks, which generally have positive expected benefits (Alaszewski 2003). Thus, the only way to build good social trust is to improve social trust by assisting farmers in participating and effectively implementing the policy.

### Environmental cognition plays a moderating role in the main relationships

A moderator variable process analysis was used to verify hypothesis 5, and envi-

**Table 3. The mediating effect of social trust in participation motivation on policy identity**

	Effect	LLCI~LLCI	Bootstrap LLCI~ULCI
Direct effect	0.570	0.345~0.795	
Indirect effect	0.267	0.129~0.448	0.130~0.435
Total effect	0.837	0.630~1.044	

Bootstrap sample size = 5000. LLCI, lower level confidence interval; ULCI, upper level confidence interval.

ronmental cognition as a moderating variable was employed to examine whether social trust has a significant impact on policy identity after the mediation path is adjusted (Table 4). First, the fitting results of the linear regression model of social trust showed that participation motivation could only linearly explain 27.3% ( $\Delta R^2 = 0.273$ ) of the data change of social trust, and the overall fitting effect of the model,  $p < 0.05$  of the exploratory factor analysis, showed that the model had a significant correlation (participation motivation and social trust were significantly related), although the model fitting results were not so satisfying. In addition,  $p = 0.000 < 0.05$  of the regression coefficient was significant, and the 95% confidence interval of the regression coefficient was 0.736~1.355, which showed that participation motivation had a significant positive impact on policy identity.

Second, model fitting results of policy

identity showed that the explanatory power of the model was 46.2% ( $\Delta R^2 = 0.462$ ), and the variance result was  $p < 0.05$ , which indicates that the model was effective. From regression coefficient results of the model, participation motivation and social trust had significant impacts on policy identity ( $p < 0.05$ ), and the confidence interval did not contain 0. However, environmental cognition and moderating variables (social trust  $\times$  environmental cognition) but no significant influence on that of policy identity ( $t = 0.209$ ;  $p > 0.05$ ), with a confidence interval that contained 0 [-0.004~0.190; -0.087~0.108], indicating that a moderating effect of environmental cognition between social trust and policy identity did not exist.

The study next tested the mediation effect under the regulation. However, in order to avoid a type of error, the mediation effect under the regulation was tested using boot-

**Table 4. Moderating role of environmental cognition in the main relationships**

	$\Delta R^2$ / Effect	SE/ Boot SE	<i>t</i>	95% CI	Bootstrap LLCI~ULCI
<b>M</b>					
Model summary	0.273		***		
X		0.156	6.690***	0.736~1.355	
<b>Y</b>					
Model summary	0.462		***		
M		0.057	4.146***	0.124~0.351	
X		0.114	5.185***	0.366~0.818	
V		0.049	1.908	-0.004~0.190	
Int_1 (M*V)		0.350	0.209	-0.087~0.108	
Direct effect of X on Y	0.483	0.114	5.185***	0.366~0.818	
Mediator					
Model 1		0.238/0.092			0.078~0.446
Model 2		0.248/0.074			0.127~0.422
Model 3		0.259/0.099			0.078~0.460

Bootstrap sample size = 5000. SE, standard error; CI, confidence interval; LLCI, lower level confidence interval; ULCI, upper level confidence interval.

strapping (5000). The test showed that the regression coefficient of the direct effect of participation motivation on policy identity was 0.483 ( $p = 0.000 < 0.05$ ), and the confidence interval did not contain 0 [0.366~0.818]. The regression coefficient of the mediating effect of participation motivation on policy identity was 0.238/0.248/0.259, and the confidence interval of bootstrapping did not contain 0, which indicates that a moderated mediation model was established; thus hypothesis 5 was true.

In conclusion, the mediating effect under moderation existed. This was due to the reduction in attention to environmental cognition if forest rights transfer was the primary consideration in farmers' policy identity, while environmental and ecological problems became passive if the participation factor was first considered in forest rights transfer. The view of the dual dependence on the environment of farmers changed farmers' concept of ecological and environmental protection. Hence, under the conditions of improving people's environmental awareness, determining how to balance economic development and provide solutions have become key to current UFE reform in Jingshan.

Our model found that environmental cognition had a moderating effect on the relationship between social trust and policy identity. The cognitive study of social interactions of things or evaluation objects indicated that it is an attitude or cognitive behavior (Delhey and Newton 2003, Hardin 2006). Therefore, environmental cognition has a regulatory function on social trust and policy identity; then, people's risk perceptions will feed back on policy trust (Lee 2014).

### Conclusions And Suggestions

Results of this study concluded that hypotheses 1 to 4 were valid, showing that

participation motivation had a positive and significant impact on social trust and policy identity, and social trust had a positive and significant impact on policy identity. In addition, social trust had a partial intermediary effect on the main relationships. Hypothesis 5, a moderator effect of environmental cognition did not exist, but it had a mediating effect under moderation. This finding poses an issue as constructing farmers' trust system and environmental cognition and actively creating social customs of mutual trust and mutual benefit are ways to enhance farmers' participation in UFE activities and identity-affecting policies. We suggest the following countermeasures.

(1) Technical guidance restrictions: Farmers urgently need more-effective skills training, while rural workers need guidance in learning new agricultural technologies. At present, the economic crops of Jingshan City under the forest are generally dominated by market-valued crops. These natural economies are not autonomously generated. While the selection of conditions is strict, the technical requirements are complex. For farmers, cases of failure in the past can easily lead to stories of farmers taking risks.

(2) Restrictions on the circulation of funds: At present, Jingshan City has many restrictions on forest circulation rights and preferential policies. Meanwhile, impoverished smallholders lack credit-worthiness to obtain market loans, especially poor, individual farmers. In addition, farmers need a kind of risk management mechanism to transfer agricultural risks and resolve the capital shortage of agriculture and difficulties with enterprise loans. At the same time, farmers need the system of finance, credit, and land in rural areas to be improved, as well as other relevant policies. For the efficiency of forest circulation, it is necessary to study the

policy of forestland circulation, mitigate the goal of farmers abandoning the circulation, and protect the interests of both parties in the circulation. In addition, the financial sector should simplify processing rights, improve processing efficiency, relax uses, and increase financial allocations. It should also expand scales, financial discounts, and preferential household interest rates, and others and use a combination of farmer microcredit and joint farmer insurance.

(3) Obstruction of communication platforms due to a lack of information and communication: Although Jingshan City currently has a platform for exchanges in the UFE, it is only inclusive of cooperatives or enterprises participating in the UFE. Due to communication barriers between stakeholders, non-participants' demands have been degraded and ignored, meaning that they are unable to fit in and thus feel excluded. Therefore, for individual farmers who have not yet participated, there is a lack of effective exchanges, and equal enjoyment of public services and social benefits. At the same time, various UFE information cannot be fully utilized while distributing information resources, and resource sharing is challenging. The government and management achieving full coordination and communication to enhance the participation of farmers who did not previously take part in the collective forest rights transaction system would be beneficial to future policy implementation.

(4) Environmental cognition is the key in regulating social trust in the entire process of policy promotion. Based on environmental cognition, providing professional knowledge on technology and ecological protection should be strengthened, and farmers' environmental awareness and benefits of agroforestry should be strengthened to promote the harmonious development between humans and

nature, further improving the acceptance of UFE.

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