Article

Impacts of Social Trust on Rural Households' Attitudes Towards Ecological Conservation—Example of the Giant Panda Nature Reserves in China

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Abstract: Understanding rural households' conservation attitudes is crucial to achieving biodiversity conservation effectiveness, and one underlying predictor of household conservation attitudes is social trust. This study examined the impact of rural households' social trust on their ecological protection attitudes based on 922 rural household data around 13 giant panda nature reserves in Shaanxi Province and Sichuan Province, China. The results show that: (1) Social trust has a significant positive impact on rural households' conservation attitudes. (2) Males' ecological conservation attitudes are influenced by all the social trust variables, whereas females' attitudes are influenced mainly by interpersonal trust (trust in neighbors and villagers). The conservation attitudes of households with higher education levels and higher family incomes are mainly affected by trust in government, while those with lower education levels and lower family incomes are more significantly affected by the trust in villagers and village cadres. The above conclusions are helpful to understand the influencing mechanism of rural households' conservation attitudes and improve the protection effects of nature reserves.

Keywords: social trust; conservation attitudes; giant panda nature reserve

1. Introduction

The construction of nature reserves (NRs) is recognized as one of the most effective ways to protect rare wildlife species and natural ecosystems [1,2]. By the end of 2018, China had established 2750 NRs of various types and levels (Hong Kong, Macao, and Taiwan are excluded), accounting for 14.88% of its land area and 4.1% of its territorial sea [3]. Although NRs in China have achieved great success in terms of biodiversity conservation, the effectiveness of NRs is primarily threatened by local development. Biodiversity conservation has the typical positive externality, the whole society benefits, while the residents in the NRs bear the most protection costs [4]. Hence there is now widespread acceptance that conservation policy should, at least, do no harm and contribute to local livelihoods [5,6].

As the main stakeholders in biodiversity conservation, rural households' attitudes towards ecological protection are considered the crucial factor in achieving the effectiveness of the NRs' conservation target and the related conservation projects [7]. Relevant studies have demonstrated that rural households' attitudes towards ecological conservation can be used to predict the households' natural resources utilization intensity, the acceptance level of NRs' conservation projects, and the responses to conservation measures [1,2,8]. Furthermore, rural households' positive conservation attitudes are beneficial for achieving the conservation goal, while negative ones might hamper the conservation target [9]. Therefore, understanding the influencing factors of rural households' conservation attitudes has received substantial research attention.

Researchers have attempted to explain the heterogeneity of rural households' conservation attitudes, and several reasonably consistent and often overlapping findings have emerged. They concluded that rural households' education level, social capital, family wealth, relationship to NRs, and perceptions of the costs and benefits induced by the establishment of NRs are the most significant influencing factors for their attitudes towards ecological conservation. For example, Jafari et al. analyzed the rural households' attitudes towards natural resources conservation around Serengeti National Park in Tanzania. They concluded that conservation cost and education level significantly impacted rural households' attitudes [1]. Nepal and Spiteri surveyed residents around Chitwan National Park in Nepal and found that as the conservation project revenue increases, rural households' attitudes towards conservation projects are more positive [2]. Through a scoping review of sub-Saharan Africa, Ihemezie et al. found that rural households' dependence on forest resources, low benefits from conservation, and conservation costs often trigger negative conservation attitudes [10]. Mirrasooli et al. observed a positive correlation between age, training receiving with awareness, and conservation attitudes through a study of residents around the southern Caspian Sea [9].

These previous studies provide an excellent basis for the research reported here. However, no studies have focused on the relationship between social trust and ecological conservation attitudes of rural households surrounding NRs. Much of the literature has demonstrated that social trust can promote environmental governance [11–13]. Higher trust levels increase the likelihood of cooperation and contribute to forming reciprocal norms and civic engagement networks [14]. Social trust is especially crucial for villages surrounding NRs because first, most of them are located in remote and mountainous areas, the role of the formal institutions is limited. Rural households around NRs reach consensus often through ties such as consanguinity, marriage, and neighbor (known as acquaintance society). As an informal institution, social trust is essential to supplement or substitute formal institutions in obeying the NRs' regulations and keeping promises between individuals and NRs' authorities. Second, the regulation of NRs and their conservation activities may have significant consequences for local people's social trust. For example, studies have shown that although the contradiction between NRs and local villages is decreasing, they still exist and should not be ignored because most rural households in NRs bear more costs than the benefits gained after establishing NRs [15], which might lead to a trust crisis in NRs authorities and even local government. Besides, Duan et al. have proved that the establishment of NRs exacerbated income inequality of local households due to the uneven distribution of compensation and the unequal development opportunities, which might impact the traditional interpersonal relationship and harm the trust in villagers and villager cadres [6]. Hence, a better understanding of the association between the social trust of households surrounding NRs and their conservation attitudes helps realize the NRs' conservation goals.

This study aims to empirically explore the influence of rural households' social trust on their attitudes towards ecological conservation. Specifically, two questions are examined: (1) whether rural households' social trust plays a significant role in formulating their conservation attitudes? (2) whether the heterogeneity existed in the effects of rural households' social trust on their conservation attitudes? To pursue the objectives, a valid sample of 922 households around 13 giant panda (Ailuropoda melanoleuca) NRs in Shaanxi and Sichuan provinces, China was used to estimate the empirical model.

2. Literature Review and Theoretical Framework

Due to the complexity of composition, trust has been defined differently. Some scholars regard trust as an expectation or a belief. For example, Deutsch defined trust as the expectation of others' behaviors in the future, and the expectation would affect the public's behavior decisions [16]. Ganesan defined trust as a belief about another party from their expertise, reliability, and intentionality [17]. Fukuyama similarly defined trust as an expectation that other people will act in a positive manner based on social norms [18].

Other scholars deem trust as a behavior. For example, Messick and Kramer believed that individuals' feedback behaviors based on whether others' behaviors could affect moral standards is trust [19]. In social sciences, together with networks and norms, trust is regarded as the vital component of social capital [20,21]. As an integral part of social capital, social trust is expected to significantly reduce transaction costs, encourage common values sharing, and guide people to comply with approved behaviors [22–24]. Even though there are many definitions of social trust, they tend to integrate that trust involves assuming that other people, or institutions, are acting in a mutually beneficial manner under the expectation of fairness and cooperation [25,26].

Scholars have attempted to classify the dimensions of trust, and some inconsistent and often overlapping findings have emerged. The literature review concludes that trust has at least two dimensions. The first, what we call interpersonal trust, some of the literature named personal trust, social trust or simply as generalized trust, refers to trust in others within a society, linking individuals with each other, and reflecting social bonds [27]. Interpersonal trust had just limited trust's definition to the 'people' or the situation among the people. In rural areas of China, the establishment and development of formal institutions are relatively hysteretic; therefore, interpersonal trust plays a vital role in the development of Chinese rural society. Due to the "small-scale peasant economy (Chinese idiom: *xiao nong jing ji*)" and the deep-rooted concept of "family interest", rural households in China attach great importance to and highly rely on their blood relatives, for example, many villages named after their family names, such as the "Yang family village". Because of the inconvenience of transportation, people in the villages are incredibly familiar with each other (Chinese idiom: *di tou bu jian tai tou jian*), and their trust was based on emotional ties and guaranteed by customs and ethics [28].

Second, trust in significant institutions, such as the government and the legal system, is based on contracts, regulations, and other institutions. We called this kind of trust institutional trust (In the relevant literature, there are at least two views of institutional trust one that institutional trust is a 'generalised' type of interpersonal trust, namely we trust the people that are at the interface of a particular institution, and the other is the more intrinsic trust, where the institutions and the way they operate meet our expectations, therefore we trust them [25,26,29]. In this paper, institutional trust refers to the second definition.). Conceptually speaking, institutional trust is different from interpersonal trust; while interpersonal trust measures the personal assessment of individuals, institutional trust measures the collective as a whole [30] (Sztompka believes that institutional trust cannot be easily separated from interpersonal trust, namely if people distrust in an organization, then they will not have confidence on the organization members. While in this study, we used trust in government and the government's agent-village leaders as the proxy of institutional trust and used trust in neighbors and villagers as the proxy of interpersonal trust. Rural households can easily distinguish the difference of their trust in different objects during our survey [31].). In rural areas surrounding the NRs of China, trust in government is helpful for rural households to comprehend and support NRs' regulations and adopt eco-friendly livelihood strategies. Furthermore, many individuals lack relative knowledge, enough time and interest to make decisions, and thus rely on trust in the government agencies [32]. With the development of society, institutional trust will become a more and more critical mechanism adjusting rural households' attitudes and behaviors in China [33].

The literature has demonstrated that social trust is positively associated with environmental conservation attitudes and behaviors. Prazan found that trust and reciprocity between rural households and state administrations contributed to the implementation and diffusion of agri-environmental programs in Europe [13]. A study by Zauskova et al. similarly showed that social trust improves the purchase behavior of environmentally friendly products [11]. Kei et al. analyzed rural households' willingness to participate in agricultural waste resource utilization in China and found that interpersonal trust and institutional trust can significantly contribute to farmers' participation patterns [12]. Guo et al. found that the social trust mechanism positively affects individuals' willingness to pay for watershed

ecological compensation [34]. Zhao et al. also found that trust positively affects rural households' willingness to participate in ecological compensation [35]. Chen et al. found that the level of social trust significantly reduced the environmental pollution behavior of enterprises [36].

According to the existing literature, the impact mechanism of social trust on rural households' conservation attitudes mainly includes the following three paths (Figure 1): (1) Improving the efficiency of information delivery. Paton argued that trust is particularly significant when accurate information about the severity of potential risks is unknown or perhaps unknowable [37], therefore lack of relevant knowledge about environmental conservation might result in less involvement in conservation participation [38]. In addition, communities around NRs are generally distant from cities with poorer infrastructure. The information source of the local residents mainly through bulletin boards, neighborhood chats, and villagers' meetings, especially for the elder ones, hence a higher level of interpersonal trust could help enhance rural households' conservation attitudes through the higher efficiency of information transmission. (2) Restricting environmental destructive behaviors. Social norms and moral constraints are crucial for restricting rural households' environmentally destructive behaviors. At the same time, interpersonal trust serves as an informal rule that guides people to abide by approved behaviors through social norms [22]. As a result, local residents tend to comply with rather than violate these social norms [39]. Besides, a higher level of intuitional trust could restrict people's environmentally destructive behaviors through laws and regulations and encourage people to engage in public affairs, eventually forming a "soft constraint". (3) Promoting livelihood strategy transformation. Rural households are generally more involved in government-oriented community development projects with higher institutional trust levels, such as eco-tourism management, clean energy projects, and non-farm employment ability training. Rural households tend to benefit from these development projects, enhancing their conservation attitudes.
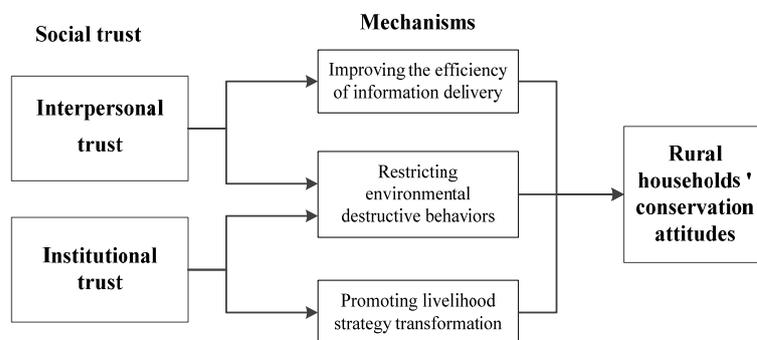

Figure 1. The theoretical framework of the impact of rural households' social trust on their conservation attitudes.

Because of the differences in the trust objects and influence mechanisms, the two types of social trust may play different roles in improving rural households' attitudes toward conservation according to the theoretical analyses above; therefore, this study mainly examines the impact of social trust, especially interpersonal trust and institutional trust on rural households' conservation attitudes in NRs in China.

3. Materials and Methods

3.1. Data Sources

The study area selected 13 giant panda (Ailuropoda melanoleuca) NRs in Sichuan Province and Shaanxi Province. As a unique and endangered species in China and a flagship species for biodiversity conservation, giant panda conservation has received significant attention.

The data were collected from July 2018 to January 2019. The team members were social science graduate students with considerable research interest and field experience.

Before conducting the household survey, they had training in research methods and data collection. The sample was selected through stratified random sampling. First, 12 and 5 giant panda NRs were selected in Sichuan and Shaanxi provinces (There are 46 giant panda nature reserves in Sichuan Province and 16 giant panda nature reserves in Shaanxi Province. According to the 25% sampling standard, 12 reserves in Sichuan Province and 4 reserves in Shaanxi Province need to be sampled for research. Since each reserve needs to investigate four villages, and only two villages are involved around Huangbaiyuan nature reserve, hence Niuweihe nature reserve was added to the study as a supplement. Niuweihe nature reserve is adjacent to Huangbaiyuan nature reserve and has belonged to the same nature reserve in history. Therefore, the natural resource endowment and policy constraints of rural households are similar.), respectively, according to the reserves' level (national or provincial) and location. Secondly, two villages are selected both inside and outside the nature reserves. Finally, about 20 rural households were randomly surveyed in each village. Altogether, a total of 968 households were sampled, and 922 questionnaires were executed correctly.

The questionnaire includes household characteristics, resource endowment, production behavior, and attitudes to ecological protection. The questionnaire surveys were conducted in face-to-face interviews; local people provided help due to language barriers in some regions. The household heads were the main target of the interview. In the absence of the household heads, their spouses or adults over 18 years were interviewed. After the survey, the research team cross-checked the questionnaires three times to ensure the quality of the data.

3.2. Model Specification

Studies have shown that rural households' characteristics, family characteristics, linkage to NRs, and perceived conservation costs and benefits are important factors influencing their conservation attitudes [1,2]. Therefore, we developed the following model to investigate the impacts of household social trust on their conservation attitudes.

$$attitude_i = \beta_0 + \beta_1 trust_i + \Pi X_i + \Omega F_i + \Phi B_i + \Sigma C_i + \varepsilon_i \qquad (1)$$

where $attitude_i$ represents household conservation attitudes, $trust_i$ represents household social trust level. X_i represents respondent characteristics, including gender, age, and education level of the respondents. F_i represents family characteristics, including total annual household income, housing area, livestock value, cropland area, and forestland area. B_i represents households' perception of conservation benefits and costs. C_i represents households' connection with the NRs, including the number of times contacted with NR's staff last year, whether they participated in NRs' training (yes = 1), and whether they participated in NRs' development projects (yes = 1). E_i is the error term, i refers to the household. Logit model was used to estimate the empirical model. We used Stata 12.0 to analyze the data.

3.3. Variable Definition

3.3.1. Household Conservation Attitude

Three questions were asked to reflect rural households' attitudes toward biodiversity conservation, including "Do you support for the establishment of NRs", "Are you willing to participate in wildlife conservation", "Is ecological protection more important than economic development in your village".

3.3.2. Social Trust

According to Luhmann [40] and Möllering [41], social trust was divided into interpersonal trust and institutional trust. Following Kei [42] and Zhou [43], two variables are used to represent individuals' interpersonal trust: trust in neighbors and trust in villagers, while trust in village officials and trust in government are used to present institutional trust. Specifically, we asked the rural households the following question: "Please tell us how

trustworthy these categories of people are". The respondents were asked to assess the trust level in four categories: neighbors, villagers, village cadres, and government. Following previous studies [36,44], for each category, the options take the form of a Likert scale, from very distrustful to very trustful, with values of 1–5, respectively (see Appendix A).

3.3.3. Perceptions of Conservation Costs and Benefits

Households' perceptions of conservation costs and benefits include direct costs and benefits, and indirect costs and benefits. Direct costs include the average costs of resettlements, the loss caused by wildlife damage, the loss caused by the timber harvesting ban [45,46]. Direct benefits include income of wild plant collection from the NRs (such as Chinese herbs, mushrooms, and wild vegetables), business income from family tourism management (including restaurants, stores, family inns, etc.), wage income from the employment opportunities provided by NRs (including forest rangers, tourism services such as tourist guides, drivers, park conductor, etc.), subsides (compensations for wildlife damage, compensations for public welfare forests, etc.) [47–49]. Indirect costs were measured by asking the respondents whether the following restrictions were severe, such as pesticide and fertilizer utilization restrictions, fuelwood collection restrictions, timber harvesting restrictions, wild plant collection restrictions, and grazing restrictions. Indirect benefits include whether the NRs provided employment opportunities, strengthened contacts with the outside world, improved infrastructure facilities, improved community environment, and provided assistance. The entropy value method was used to calculate the indirect benefits and indirect costs of conservation for rural households. Table 1 presents the descriptive statistics of the variables used in this study.

Table 1. Descriptive statistics of variables.

Variable	Mean	Standard Deviation
Conservation attitudes		
Support for the establishment of NRs (yes = 1)	0.62	0.17
Willingness to participate in wildlife conservation (yes = 1)	0.75	0.14
Ecological conservation is more important than economic development (yes = 1)	0.31	0.26
Interpersonal trust		
Trust in neighbors (1–5 score, from very distrust to very trust)	4.09	0.67
Trust in villagers (1–5 score, from very distrust to very trust)	3.73	0.66
Institutional trust		
Trust in village cadres (1–5 score, from very distrust to very trust)	3.10	0.95
Trust in government (1–5 score, from very distrust to very trust)	3.60	0.86
Respondent characteristics		
Gender (1 male, 0 female)	0.84	0.36
Age (yrs.)	55.71	10.97
Education (yrs.)	7.15	3.71
Family characteristics		
Annual household income (10,000 yuan)	5.76	5.35
Housing area (100 m^2)	0.77	0.43
Livestock value (10,000 yuan)	0.10	0.12
Cropland area (mu)	3.68	4.96
Forestland area (100 mu)	0.20	0.26
Perception of conservation costs and benefits		
Direct benefits (10,000 yuan)	0.36	0.69
Direct costs (10,000 yuan)	0.46	1.17
Indirect benefits	0.57	0.22
Indirect costs	0.64	0.30
Households' connection with the NRs		
Times contacted with NR's staff last year,	1.86	0.30
Participated in NRs' training (yes = 1)	0.24	0.43
Participated in NRs' projects (yes = 1)	0.40	0.49

4. Results

4.1. Descriptive Statistics of Variables

Statistical results of the variables are shown in Table 1. In terms of households' conservation attitudes, 62.52% of the respondents supported the establishment of the giant panda reserve, 75.03% of the respondents were willing to participate in wildlife conservation, and 30.71% of them said ecological protection was more important than economic development in their village, indicating that most of the rural households in our study area hold positive conservation attitudes. Regarding social trust variables, rural households trust their neighbors most, then villagers and government, and trust village cadres least. In respondent characteristics, about 84% of the respondents are male, and the average age and education are 55.71 and 7.15, respectively. In family characteristics, the average annual income of rural households is 57,600 yuan, the average housing area is 77.23 m², and the average livestock value is 1025 yuan. The average cropland area and forestland areas are 3.68 and 20.23 mu, respectively, indicating that households surrounding NRs have less livelihood capital. In terms of perception of conservation costs and benefits, the average direct benefits and costs are 3606 and 4635 yuan, respectively. The average indirect benefits and costs are 0.57 and 0.64, respectively, showing that rural households bear more conservation costs than benefits in our study area. Regarding households' connection with the NRs, the average times of households contacted with NR's staff last year is 1.86, and about 24% and 40% of the rural households have participated in NRs' skill training and development projects.

4.2. The Effect of Social Trust on Rural Households' Conservation Attitudes

Considering the potential correlation between variables, this study first carried out a multicollinearity test. According to the variance inflation factor (VIF), the degree of multicollinearity of variables is within a reasonable range (<3). The regression results are shown in Table 2. Standard errors were clustered at the village level to cope with the error term correlation, and village dummies were included to control unobserved location-specific factors. The Chi² statistic suggests that the model is well fit.

Table 2. Regression results of the effects of social trust on rural households' conservation attitudes.

	Support for the Establishment of NRs	Willingness to Participate in Wildlife Conservation	Ecological Conservation Is More Important Than Economic Development
Interpersonal trust			
Trust in neighbors	1.825 *** (0.424)	2.020 *** (0.440)	0.503 *** (0.195)
Trust in neighbors	0.349 * (0.210)	0.385 * (0.226)	0.363 * (0.213)
Institutional trust			
Trust in village cadres	0.329 ** (0.155)	0.466 *** (0.177)	0.273 ** (0.121)
Trust in government	0.282 * (0.168)	0.377 ** (0.189)	0.221 * (0.129)
Respondents characteristic			
Gender (male = 1)	−0.000 (0.355)	−0.007 (0.401)	0.203 (0.252)
Age (years)	0.001 (0.012)	−0.019 (0.013)	−0.013 (0.009)
Education (years)	0.014 (0.035)	0.048 (0.040)	0.054 ** (0.026)

Table 2. *Cont.*

	Support for the Establishment of NRs	Willingness to Participate in Wildlife Conservation	Ecological Conservation Is More Important Than Economic Development
Family characteristic			
Annual household income (10,000 yuan)	0.063 ** (0.025)	0.054 * (0.028)	0.005 (0.017)
Housing area (100 m^2)	0.385 (0.283)	0.732 ** (0.321)	−0.584 *** (0.218)
Livestock value (10,000 yuan)	0.022 (1.019)	0.947 (1.105)	−1.678 ** (0.830)
Cropland area (mu)	0.028 (0.025)	0.006 (0.028)	−0.028 (0.019)
Forest land area (100 mu)	−3.859 *** (0.545)	−2.782 *** (0.610)	−0.567 (0.366)
Perceptions of conservation costs and benefits			
Direct benefits	4.322 *** (1.495)	4.786 * (2.709)	1.302 *** (0.383)
Direct costs	−1.106 *** (0.194)	−0.370 ** (0.176)	−0.255 (0.167)
Indirect benefits	4.089 *** (1.078)	4.708 *** (1.161)	1.192 (0.946)
Indirect costs	−0.825 (0.535)	−2.809 *** (0.595)	−0.123 (0.650)
Households' connection with the NRs			
Times contacted with NR's staff last year	0.063 (0.097)	0.100 (0.114)	0.141 ** (0.072)
Participated in NRs' training (yes = 1)	0.902 * (0.493)	2.784 ** (1.106)	0.314 (0.225)
Participated in NRs' projects (yes = 1)	0.469 * (0.283)	0.689 ** (0.347)	0.577 *** (0.191)
Constant	−10.723 *** (2.192)	−9.854 *** (2.246)	−5.475 *** (1.519)
Log likelihood	−236.79	−188.09	−402.18
LR chi^2	606.03 ***	585.63 ***	381.02 ***
Sample size	922	922	922

*, ** and *** represent the significance levels of 10%, 5% and 1%, respectively. Standard error in parentheses.

The results indicate that both interpersonal and institutional trust variables significantly impact rural households' conservation attitudes. Regarding interpersonal trust, trust in neighbors and trust in villagers significantly positively affect rural households' conservation attitudes. Besides, the coefficients and significance levels of trust in neighbors are larger than trust in villagers in all three models, indicating that improving rural households' interpersonal trust level, especially trust in neighbors, could improve their conservation attitudes. Granovetter described the relationship between neighbors as "strong ties" and is characterized by long-term, high-frequency interactions (Chinese idiom: *di tou bu jian tai tou jian*) [50]. Especially in villages surrounding NRs in China, where most of them are located in remote mountainous areas, interpersonal trust plays a crucial role in rural society. The closer relationship between neighbors and villages allows rural households to share information more frequently and obey the social norm [51], thus enhancing their conservation attitudes.

Of the institutional trust, both trusts in government and village cadres have positive and significant impacts on rural households' conservation attitudes, while the coefficients and significance levels of trust in village cadres are larger than trust in government in all the models. Village cadres have a dual identity: village managers subordinate to the superior government and village members with equal status [52]. As rural households' trust in village cadres grows, an informal institution based on the social norms and common values will establish in villages. Studies also demonstrated that the higher level of trust in villager cadres is, the lower the executory costs of environmental conservation policy are [53]. Especially after the participatory management has been implemented in most of the NRs, the village as a whole has the responsibility to sustain the environmental and ecological safety, while the villager leaders play a guiding and supervising role in daily management. Unlike villager cadres, most rural residents have less connection with the local government, household trust in local government mainly through the implementation of regulations, providing development projects, and compensation [54]. As a formal institution, trust in government reflects rural households' motivation to obey the regulation, hence significantly improving their conservation attitudes.

Most of the control variables are consistent with the expectation; for example, education level has significant positive effects on rural households' conservation attitudes. Households with higher education levels generally have a deeper understanding of the importance of conservation [14,55,56]. Meanwhile, households with higher education levels can easily get non-farm employment opportunities, hence holding more positive conservation attitudes [8]. Family income has a positive impact on households' conservation attitudes. The wealthier households are generally less dependent on natural resources, thus have fewer conflicts with NRs, and their conservation attitudes are more positive [57]. Consistent with other studies [58,59], both direct and indirect benefits have positive effects on rural households' conservation attitudes, while both direct and indirect costs negatively impact the rural households' conservation attitudes, indicating that the Chinese government and PA authorities should not neglect the costs those people bear and the benefits they are supposed to earn during the protection process, and design better conservation policies that bring about the harmonious and concurrent development of ecological objectives and livelihood objectives. All the variables of households' connection with the NRs positively impact household attitudes. Many studies have shown that close contact between community residents and NRs is a critical element in achieving the effectiveness of PA management [1,6]. Only when residents are closely involved in the management of PAs can the realization and continued effectiveness of protection be ensured [60].

4.3. Robustness Test

Our robustness check was done from three perspectives. First, considering that the potential unobserved factors both affect social trust and conservation attitudes, we used the IV-2SLS method to re-estimate our model. Referring to Zhang and Zhao [61], the instrument variables (IV) we chose are the average value of four social trust variables in the same village, except for the respondents themselves. The average value of social trust of the whole village is highly correlated to the respondents' social trust level, while they are uncorrelated with the respondents' conservation attitudes, hence satisfying the exogenous condition of the IV. Second, the sample data include rural households who lived outside the NRs. We excluded these samples and re-estimated our model because households outside the NRs are generally less affected by the NRs' regulations. Third, our empirical models do not include village characteristic variables. Considering the potential estimation bias caused by the omission of village characteristic variables, we added the village dummies in our empirical models and re-ran the model. The results of all the robustness test models show that rural households' social trust significantly impacts their conservation attitudes, indicating that the results obtained in this study are robust (Table 3).

Table 3. Robustness test results.

	Support for the Establishment of NRs	Willingness to Participate in Wildlife Conservation	Ecological Conservation Is More Important Than Economic Development
IV-2SLS estimating			
Interpersonal trust			
Trust in neighbors	0.940 ** (0.407)	1.902 *** (0.709)	1.001 ** (0.436)
Trust in villagers	0.997 * (0.578)	1.051 (0.681)	0.279 (0.456)
Institutional trust			
Trust in village cadres	0.281 (0.413)	0.516 *** (0.105)	0.374 * (0.223)
Trust in government	0.378 (0.516)	0.301 *** (0.120)	0.204 ** (0.105)
Wald chi^2	585.63 ***	381.02 ***	207.18 ***
Sample size	922	922	922
Excluding samples living outside the NRs			
Interpersonal trust			
Trust in neighbors	1.726 *** (0.524)	2.262 *** (0.647)	0.601 * (0.281)
Trust in villagers	0.678 * (0.349)	0.403 (0.346)	0.772 ** (0.321)
Institutional trust			
Trust in village cadres	0.204 (0.257)	0.630 ** (0.298)	0.362 ** (0.172)
Trust in government	0.656 *** (0.248)	0.466 * (0.281)	0.227 (0.181)
Log likelihood	−108.99	−89.27	−198.35
LR chi^2	333.87 ***	326.79 ***	219.78 ***
Sample size	445	445	445
Controlling village dummies			
Interpersonal trust			
Trust in neighbors	2.192 *** (0.519)	2.362 *** (0.564)	0.424 ** (0.217)
Trust in villagers	0.288 (0.246)	0.193 (0.275)	0.445 * (0.234)
Institutional trust			
Trust in village cadres	0.362 * (0.188)	0.645 *** (0.218)	0.320 ** (0.132)
Trust in government	0.256 (0.200)	0.453 ** (0.230)	0.248 * (0.137)
Log likelihood	−202.25	−156.46	−370.99
LR chi^2	675.10 ***	584.04 ***	439.18 ***
Sample size	922	922	922

*, ** and *** represent the significance levels of 10%, 5% and 1%, respectively. Standard error in parentheses. Results of control variables are not reported here.

4.4. Heterogeneity Analysis

We further analyzed the impact of social trust on household conservation attitudes based on different socio-economic variables. Samples were divided into two subsamples according to the average of respondents' age, education, and family income level, and re-estimated the model for each subsample (Table 4). First, all the social trust variables affect male respondents' conservation attitudes, while interpersonal trust only influences female respondents' attitudes. This might be because females rely more on chat to obtain information than males. Second, younger households' attitudes are mainly affected by trust in neighbors and government, while the elder ones are more influenced by the interpersonal trust and trust in village cadres. This is because the elder ones generally live longer in the village, hence are more easily affected by neighbors, villagers, and village cadres. Third, the higher education group is more influenced by institutional trust, while interpersonal trust mainly influences the lower education group. Rural households with higher education generally have a better understanding of government laws and regulations, while the information acquisition of lower education households mainly comes from villagers, so their conservation attitudes are more likely to be influenced by interpersonal trust. Last, households with higher income levels are more affected by institutional trust, while those with lower income levels are major affected by interpersonal trust. The reason might be that rural households with higher income levels usually have more communication and better relationship with the government and village cadres and thus have a higher level of trust in them.

Table 4. Results of heterogeneity analysis.

	Explanatory Variable: Willingness to Participate in Wildlife Conservation							
	Gender		Age		Education Level		Family Income	
	Male	**Female**	**Younger**	**Older**	**Higher**	**Lower**	**Higher**	**Lower**
Interpersonal trust								
Trust in neighbors	1.570 *** (0.421)	0.025 * (0.014)	1.595 ** (0.683)	2.027 *** (0.594)	2.151 *** (0.738)	1.645 *** (0.518)	1.807 *** (0.461)	2.829 ** (1.062)
Trust in villagers	1.904 ** (1.122)	0.396 * (0.233)	−0.124 (0.304)	0.876 ** (0.341)	0.074 (0.308)	0.864 ** (0.348)	0.370 (0.395)	0.520 * (0.295)
Institutional trust								
Trust in village cadres	1.114 * (0.410)	0.266 (0.172)	0.163 (0.249)	0.521 ** (0.216)	0.428 * (0.251)	0.345 (0.219)	0409 * (0.211)	−0.130 (0.280)
Trust in government	0.364 * (0.189)	0.329 (0.566)	0.578 ** (0.262)	0.100 (0.243)	0.344 * (0.208)	0.193 (0.254)	0.497 * (0.296)	0.251 (0.225)
Log likelihood	−197.81	−20.48	−104.47	−122.18	−123.80	−102.84	−144.40	−73.87
LR chi^2	513.79 ***	67.30 ***	315.02 ***	310.93 ***	320.37 ***	298.37 ***	474.91 ***	150.68 ***
Sample size	778	93	441	481	457	465	409	513

*, ** and *** represent the significance levels of 10%, 5% and 1%, respectively. Standard error in parentheses. Results of control variables are not reported here.

5. Conclusions and Policy Implications

This study examined the effects of social trust on rural households' attitudes toward ecological conservation based on 922 rural households in 13 giant panda NRs in Shaanxi and Sichuan provinces, China. The main conclusions are as follows: (1) All the social trust variables, including interpersonal trust (trust in neighbors and villagers) and institutional trust (trust in village cadres and government), have significant positive impacts on rural households' conservation attitudes. This result remains robust after using IV-2SLS methods, excluding samples of households outside the NRs and controlling village dummies. (2) The results of the heterogeneity analysis show that male, younger households and households with higher education levels and higher incomes are majorly influenced by institutional

trust. In comparison, the contra groups are mainly affected by interpersonal trust. We hope that these findings have contributed to a better understanding of the relationship between household social trust and conservation attitudes.

This study has important implications to the government and NRs authorities that could enhance household conservation attitudes. According to our results, social trust as a significant factor is not only a theoretical concept in the literature but an empirical phenomenon [62]. In villages around PAs, where formal institutions are not well developed, social trust, as informal institutions, is essential to achieve conservation goals in NRs because social trust can supplement or substitute formal institutions in maintaining law and regulations and keeping promises between individuals [44]. Unlike formal institutional arrangements, social cooperation in the provision of public goods lacks third-party scrutiny. Thus, supervising and punishing free-riders is a core issue faced by social cooperation participants. The large-radius interpersonal trust provides an effective solution to this supervising problem [54]. There usually exist many moral constraints and social norms in a community with a high level of social trust, where local residents tend to obey rather than go against these social norms [39]. On the contrary, lack of trust generally causes people to believe that environmental policy is less effective [63]. Therefore, the government should continue to improve its informal systems while developing high-quality formal institutions through the following ways: first, efficiently protecting private property rights. Only people anticipated that their private property had been efficiently protected; they had the motivation of long-term cooperation and high social trust. Second, standardize the government behavior. Government behaviors have controlled all the institutional environment in which trust is formed; hence effective constraint on government behaviors is beneficial for individuals predicting the future and building trust, while the short-term, especially frequently changed government behaviors would impair the social trust [64].

Furthermore, the conservation attitude of rural households is closely related to their costs and benefits in reserve. Therefore, the NRs should not ignore the interests of local residents, provide enough compensation while restricting the utilization of natural resources, and help rural households realize livelihood transformation through alternative livelihood projects, thereby improving their conservation attitudes. The connection between rural households and the NRs significantly affects the conservation attitudes of rural households; therefore, NRs authorities must realize that only local residents actively participate in the management of the NRs can ensure the effectiveness and sustainability of biodiversity conservation. Participatory management, skills training, and development projects are good choices for NRs authorities to enhance the connection between NRs and communities [65].

This study has some limitations that need further attention. First, the concept of interpersonal and institutional trust used in this study is not unanimous in the literature; even though we described the difference between them and their potential impact mechanisms on respondents' attitudes, our findings need to be interpreted with caution. Furthermore, this study measured trust in questionnaires based on five points Likert scale, which might not accurately reflect the respondents' real trust propensity. The realistic environment and local social norms would affect their answers. Further analysis could combine economic experiment methods with questionnaire surveys to measure trust more accurately. Finally, this study was based on a cross-sectional dataset, but given that household conservation attitudes might change over time; therefore, panel data over the long term should be used in further analysis.

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Appendix A. Household Survey Questionnaires (Partial)

Appendix A.1. Personal Information of Family Members ①

Codes of family members	Relationship with household head	Gender	Age	Education ②	Health condition	Village leadership
	Q1	1 male 2 female	years	years	Q2	Q3
H1	1 household head					
H2						
. . .						

Q1:1 household head 2 spouse 3 parents 4 children 5 grandchildren 6 others 9 respondent. Q2:1 healthy 2 non-serious disease 3 chronic disease 4 serious illness 5 disability. Q3:1 Now you are a village cadre; 2 You used to be a village cadre; 0 You are not a village cadre. **Note:** ① A family is a group of people living under the same roof, sharing various resources (labor force and income), sharing the income and expending together. ② Years of study: 6 years in primary school, 9 years in junior high school, 12 years in senior high school, 16 years in university, 11 years in technical secondary school, 15 years in junior college, 19 years in post-graduate school.

Appendix A.2. Forestland and Cropland Information

Forestland code	Area	Soil quality	Cropland code	Area	Soil quality
	mu	1 very good 2 not very good 3 bad		mu	1 very good 2 not very good 3 bad
F1			F1		
F2			F2		
. . .			. . .		

Appendix A.3. Annual Family Total Income Unit: Yuan

Wages	Crop Production		AnimalHusbandry		Timber Forests harvesting		Economic Forests products		
Wild Gathering income		Business income			Crop subsidy	Forest subsidy	Social insurance	Relatives subsidy	Others

Appendix A.4. Household Conservation Attitude

Do you support for the establishment of NRs	1 yes 2 no 3 have no idea	
Are you willing to participate in wildlife conservation	1 yes 2 no 3 have no idea	
Is ecological protection more important than economic development in your village	1 ecological protection is more important 2 equally important 3 economic development is more important 4 have no idea	

Appendix A.5. Trust on Rural Household

Please tell us how trustworthy your neighbors are?	1–5 score, from very distrust to very trust	
Please tell us how trustworthy villagers are?	1–5 score, from very distrust to very trust	
Please tell us how trustworthy village cadres are?	1–5 score, from very distrust to very trust	
Please tell us how trustworthy government are?	1–5 score, from very distrust to very trust	

Appendix A.6. Households' Connection with the NRs

How many times have you contacted with NR's staff last year?	Numbers	
Have you participated in NRs' training ?	1yes 0 no	
Have you participated in NRs' projects ?	1yes 0 no	

Appendix A.7. Perceptions of Direct Conservation Costs and Benefits

Perceptions of direct conservation costs			Perceptions of direct conservation benefits			
Average costs of resettlements	Loss caused by wildlife damage	Loss caused by the timber harvesting ban	Income of wild plant collection from the NRs [1]	Business income from family tourism management [2]	Wage income from the employment opportunities provided by NRs [3]	Subsides [4]
Yuan/year	Yuan/year	Yuan/year	Yuan/year	Yuan/year	Yuan/year	Yuan/year
………						

[1] Such as Chinese herbs, mushrooms and wild vegetables. [2] Including restaurants, stores, family inns, etc. [3] Including forest rangers, tourism services such as tourist guides, drivers, park conductor etc. [4] Including compensations for wild-life damage, compensations for public welfare forests, etc.

Appendix A.8. Perceptions of Indirect Conservation Costs and Benefits

Does the management of nature reserves bring about the following benefits?				
Employment opportunities	Increased contact with the outside world	Improved infrastructure	Improved community environment	Provided assistance
1Yes, 0No	1Yes, 0No	1Yes, 0No	1Yes, 0No	1Yes, 0No

Does the management of nature reserves bring about the following restictions?				
Restrictions on pesticides and fertilizers	Restrictions on fuelwood collection	Restriction on timber harvesting	Restrictions on wild plant collection	Restrictions on grazing
1 Strict control 2 General control 3 No control	1 Strict control 2 General control 3 No control	1 Strict control 2 General control 3 No control	1 Strict control 2 General control 3 No control	1 Strict control 2 General control 3 No control

References

1. Jafari, R.K.; Eivin, R.; Bjørn, P.K. Factors influencing conservation attitudes of local people in Western Serengeti, Tanzania. *Biodivers. Conserv.* **2007**, *16*, 2213–2230.
2. Nepal, S.; Spiteri, A. Linking Livelihoods and Conservation: An Examination of Local Residents' Perceived Linkages between Conservation and Livelihood Benefits around Nepal's Chitwan National Park. *Environ. Manag.* **2011**, *47*, 727–738. [CrossRef] [PubMed]
3. National Forestry and Grassland Administration (NFGA). China's Protected Areas. National Forestry and Grassland. 2020. Available online: http://www.forestry.gov.cn/main/65/20200527/110735699913323.html (accessed on 7 May 2019).
4. Duan, W.; Wen, Y. Impacts of protected areas on local livelihoods: Evidence of giant panda biosphere reserves in Sichuan Province, China. *Land Use Policy* **2017**, *68*, 168–178. [CrossRef]
5. Shen, J.; Horgarth, N.J.; Hou, Y.; Duan, W. Impact of nature reserves on human well-being—Evidence from giant panda reserves in China. *J. For. Econ.* **2021**, *36*, 79–101. [CrossRef]
6. Duan, W.; Hogarth, N.J.; Shen, J. Impacts of protected areas on income inequality: Evidence from the giant panda biosphere reserves in Sichuan province, China. *J. For. Econ.* **2021**, *36*, 27–51. [CrossRef]
7. Hariohay, K.M.; Fyumagwa, R.D.; Kideghesho, J.R.; Røskaft, E. Awareness and attitudes of local people toward wildlife conservation in the Rungwa Game Reserve in Central Tanzania. *Hum. Dimens. Wildl.* **2018**, *23*, 503–514. [CrossRef]
8. Larson, L.R.; Conway, A.L.; Krafte, K.E.; Hernandez, S.M.; Carroll, J.P. Community-based conservation as a potential source of conflict around a protected area in Sierra Leone. *Environ. Conserv.* **2016**, *43*, 242–252. [CrossRef]
9. Mirrasooli, E.; Ghorbani, R.; Gorgin, S.; Aghilinejhad, S.M.; Jalali, A. Factors associated with illegal fishing and fisher attitudes toward sturgeon conservation in the southern caspian sea. *Mar. Policy* **2018**, *100*, 107–115. [CrossRef]
10. Ihemezie, E.J.; Nawrath, M.; Strau, L.; Stringer, L.C.; Dallimer, M. The influence of human values on attitudes and behaviours towards forest conservation. *J. Environ. Manag.* **2021**, *292*, 112857. [CrossRef]

11. Zauskova, A.; Miklencicova, R.; Madlenak, A.; Bezako-va, Z.; Mendelova, D. Environmental Protection and Sustainable Development in The Slovak Republic. *Eur. J. Sci. Theol.* **2013**, *9*, 153–159.
12. Kei, H.E.; Junbiao, Z.; Yun, T. Influencing Factors and Differences in Farmer Willingness to Pay for Ecological Compensation of Agricultural Waste Utilization: Based on rural areas of Hubei. *Resour. Sci.* **2013**, *35*, 627–637.
13. Prazan, J.; Theesfeld, I. The role of agri-environmental contracts in saving biodiversity in the post-socialist Czech Republic. *EconStor Open Access Artic.* **2014**, *8*, 1–25. [CrossRef]
14. Han, Y.Q.; Su, S.P.; Wei, Y.Z. Interpersonal trust, institutional trust and household willingness of participation in the carbon sequestration project: Based on 344 survey data from Fujian province. *J. Hunan Agric. Univ. Soc. Sci.* **2017**, *18*, 64–70.
15. Bidaud, C.; Schreckenberg, K.; Jones, J.P.G. The local costs of biodiversity offsets: Comparing standards, policy and practice. *Land Use Policy* **2018**, *77*, 43–50. [CrossRef]
16. Deutsch, M. Trust and suspicion. *J. Confl. Resolut.* **1958**, *2*, 265–279. [CrossRef]
17. Ganesan, S. Determinants of long-term orientation in buyer-seller relationships. *J. Mark.* **1994**, *2*, 1–19. [CrossRef]
18. Fukuyama, F. *Trust: The Social Virtues and the Creation of Prosperity*; Free Press: New York, NY, USA, 1995.
19. Messick, D.M.; Kramer, R.M. Trust as a form of shallow morality. In *Trust in Society*; Cook, K.S., Ed.; Russell Sage Foundation: New York, NY, USA, 2001; pp. 89–117.
20. Woolcock, M. Social capital and economic development: Toward a theoretical synthesis and policy framework. *Theory Soc.* **1998**, *27*, 151–208. [CrossRef]
21. Stanley, D.A.; Sokol-Hessner, P.; Banaji, M.R.; Phelps, E.A. Implicit race attitudes predict trustworthiness judgments and economic trust decisions. *Proc. Natl. Acad. Sci. USA* **2011**, *108*, 7710–7715. [CrossRef]
22. Jiang, D.; Lim, S.S. Trust and Household Debt. *Rev. Financ.* **2016**, *22*, rfw055. [CrossRef]
23. Beugelsdijk, S.; Mariko, J.K. Diversity and trust: The role of shared values. *J. Comp. Econ.* **2016**, *44*, 522–540. [CrossRef]
24. Kirchler, E.; Hoelzl, E.; Wahl, I. Enforced versus voluntary tax compliance: The "slippery slope" framework. *J. Econ. Psychol.* **2008**, *29*, 210–225. [CrossRef]
25. Zhang, S.; Xu, Z.; Xu, Y. Social Justice and Political Trust: The Mechanism of Cooperation with Government. *Adv. Psychol. Sci.* **2014**, *22*, 588–595. [CrossRef]
26. Zhang, S. Social Justice, Institutional Trust and Public Cooperation Intention. *Acta Psychol. Sin.* **2017**, *49*, 794–813. [CrossRef]
27. Herreros, F.; Criado, H. Social trust, social capital and perceptions of immigration. *Political Stud.* **2010**, *57*, 337–355. [CrossRef]
28. Wang, C.H. Rural households' attitudes toward ecological conservation: New findings and policy implications. *Manag. World* **2014**, *11*, 70–79.
29. Möllering, G. Understanding Trust from the Perspective of Sociological Neoinstitutionalism: The Interplay of Institutions and Agency. MPIfG Discussion Paper. 13 May 2005. Available online: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1456838 (accessed on 3 December 2021).
30. Baek, Y.M.; Chan, S.J. Focusing the mediating role of institutional trust: How does interpersonal trust promote organizational commitment? *Soc. Sci. J.* **2015**, *52*, 481–489. [CrossRef]
31. Sztompka, P. *Trust: A Sociological Theory*; Cambridge University Press: Cambridge, UK, 1999.
32. Siegrist, M.; Cvetkovich, G. Perception of Hazards: The Role of Social Trust and Knowledge. *Risk Anal. Int. J.* **2000**, *20*, 713–720. [CrossRef] [PubMed]
33. Ly, Y.C.; Tony, T. Trends and structure of institutional trust: An analytical strategy of "multiple rating scales". *Taiwan J. Sociol.* **2005**, *35*, 75–126.
34. Guo, W.X.; Fu, Y.C.; Zhang, L.F. Social Capital Simulation of Watershed Eco-compensation. *China Popul. Resour. Environ.* **2014**, *24*, 18–22.
35. Zhao, X.Y.; Zhang, L.; Zhang, F.Y.; Hou, C.X.; Lu, L.P.; Lu, H.L. Characteristic analysis of farmer household' social capital in Zhangye City. *Arid. Land Geogr.* **2013**, *36*, 1136–1143.
36. Chen, Z.; Chen, F.; Zhou, M. Does social trust affect corporate environmental performance in China? *Energy Econ.* **2021**, *102*, 105537. [CrossRef]
37. Paton, D. Risk communication and natural hazard mitigation: How trust influences its effectiveness. *Int. J. Glob. Environ. Issues* **2008**, *8*, 2–16. [CrossRef]
38. Tao, Z.L.; Wang, H. The change of trust mode—From interpersonal trust institution-based trust. *J. Beijing Univ. Posts Telecommun.* **2006**, *2*, 20–23.
39. Akerlof, G.A. A Theory of Social Custom, of which Unemployment may be One Consequence. *Spec. Stud. Pap.* **1980**, *94*, 749–775. [CrossRef]
40. Luhmann, N. *Trust and Power*; John Wiley and Sons: New York, NY, USA, 1979.
41. Möllering, G. The Nature of Trust: From Georg Simmel to a Theory of Expectation, Interpretation and Suspension. *Sociology* **2001**, *35*, 403–420. [CrossRef]
42. Kei, H.E.; Junbiao, Z.; Zhang, L.; Wu, X. Institutional trust and rural households' willingness to participate in environmental governance: The case of agricultural waste resourceization. *Manag. World* **2015**, *5*, 75–88.
43. Zhou, Y.C.; Ao, D. A study of the differences in social capital between the self-employed and the employed. *Sociol. Study* **2011**, *5*, 198–224.

44. Smith, E.K.; Mayer, A. A social trap for the climate? Collective action, trust and climate change risk perception in 35 countries. *Glob. Environ. Change* **2018**, *49*, 140–153. [CrossRef]
45. Lusigi, W.J. Mt. Kulal Biosphere Reserve: Reconciling conservation with local human population needs. In *Conservation, Science, and Society*; UNESCO; UNEP: Paris, France, 1984; pp. 459–469.
46. Clements, T.; Suon, S.; Wilkie, D.S.; Milner-Gulland, E.J. Impacts of Protected Areas on Local Livelihoods in Cambodia. *World Dev.* **2014**, *64*, S125–S134. [CrossRef]
47. Wunder, S. Poverty Alleviation and Tropical Forests—What Scope for Synergies? *World Dev.* **2001**, *27*, 1817–1833. [CrossRef]
48. Scherl, L.M. *Can Protected Areas Contribute to Poverty Reduction?* IUCN: Gland, Switzerland, 2004.
49. Sandbrook, C.G. Local economic impact of different forms of nature-based tourism. *Conserv. Lett.* **2010**, *3*, 21–28.
50. Granovetter, M. The Strength of Weak Ties: A Network Theory Revisited. *Sociol. Theory* **1983**, *1*, 201–233. [CrossRef]
51. Lewicki, R.J.; Bunker, B.B. *Trust in Relationships: A Model of Development and Decline*; Jossey-Bass/Wiley: Hoboken, NJ, USA, 1994.
52. Liu, Q.J.; Xu, Y.P. The influence of Social trust on the level of Corruption. *J. South China Agric. Univ. Soc. Sci. Ed.* **2013**, *12*, 121–127.
53. Zhang, F.; Zhao, X.; Tian, Y.; Hou, C.; Zhang, L. Social Capital and Farmer Willingness to Participate in Ecological Compensation for Three Sites in Gansu. *Resour. Sci.* **2013**, *35*, 1821–1827.
54. Huhe, N.; Chen, J.; Tang, M. Social trust and grassroots governance in rural China. *Soc. Sci. Res.* **2015**, *53*, 351–363. [CrossRef] [PubMed]
55. Gao, W.H.; Pei, W.; Zhen, G. Trust and Commitment: The Supple Mechanism for Channel Harmony. *J. South China Agric. Univ. Soc. Sci. Ed.* **2005**, *4*, 66–70.
56. Zhong, Z.; Mu, N.N.; Qi, J.L. The effect of internal trust on the effectiveness of agricultural quality and safety control in rural households' cooperatives—A case study based on three dairy rural households' cooperatives. *China Rural. Econ.* **2016**, *1*, 40–52.
57. Sun, P.F.; Zhao, K.; He, J. The Rural Population Aging, Social Trust and Farmers' Behavior of Quitting Rural Residential Land (FBQRRL): 614 Farmers' Samples in Jinzhai County, Anhui Province. *J. Huazhong Agric. Univ. Soc. Sci. Ed.* **2019**, *5*, 137–145, 173.
58. Jin, L.S.; Guo, J.Q. Rural Residents' Awareness of Environmental Protection and Willingness to Pay for Environmental Protection: A Case Study of the Nabanhe Nature Reserve. *Resour. Sci.* **2011**, *33*, 50–55.
59. Duan, W.; Ma, B.; Qin, Q.; Wen, Y.L. Research on ecological conservation behavior of farm households based on livelihood capital. *Ecol. Econ.* **2016**, *32*, 180–185.
60. Rao, H.; Drazin, R. Overcoming Resource Constraints on Product Innovation by Recruiting Talent from Rivals: A Study of the Mutual Fund Industry, 1986–1994. *Acad. Manag. J.* **2002**, *45*, 491–507. [CrossRef]
61. Zhang, H.; Zhao, Y. Is Social Trust Enhancement Beneficial to the Public's Environmental Protection?—Empirical Study Based on Chinese General Social Survey (CGSS) Data. *Res. Econ. Manag.* **2019**, *40*, 102–112.
62. Cremer, D.D.; Stouten, J. When Do People Find Cooperation Most Justified? The Effect of Trust and Self–Other Merging in Social Dilemmas. *Soc. Justice Res.* **2003**, *16*, 41–52. [CrossRef]
63. Harring, N. Corruption, inequalities and the perceived effectiveness of economic pro-environmental policy instruments: A European cross-national study. *Environ. Sci. Policy* **2014**, *39*, 119–128. [CrossRef]
64. Zhang, W.; Ke, R. Trust in China: A Cross-Regional Analysis. *Econ. Res. J.* **2002**, *10*, 59–96. [CrossRef]
65. Treves, A.; Wallace, R.B.; White, S. Participatory planning of interventions to mitigate human-wildlife conflicts. *Conserv. Biol.* **2010**, *23*, 1577–1587. [CrossRef]