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# Is trust in government associated with farmers' behaviors of farmland transfer? Evidence from China

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**Introduction:** Farmland transfer plays an important role in optimizing the allocation of agricultural resources. In recent years, public intervention through establishing intermediary organizations from local governments has provided a new perspective for analyzing the differences in farmers' behaviors of farmland transfer. However, the effectiveness of public intervention depends on farmers' trust in government.

**Methods:** In this study, we investigate the impact of farmers' trust in government on their farmland transfer behavior, using data from the China Family Panel Studies (CFPS) and the Probit model.

**Results and discussion:** The results show that trust in government has a significant and positive effect on both farmland transfer-out and transfer-in behaviors, with a stronger effect on transfer-out behavior. The findings have passed robustness tests. The disaggregated analysis shows that farmers who receive government subsidies and use the Internet benefit the most. Further analysis reveals a substitutive relationship between trust in government and interpersonal trust, which are both key components of social trust. Finally, this study provides policy implications to steadily promote public intervention in farmland transfer, pay more attention to farmers' trust in government, and strictly implement the agricultural subsidy policies.

## KEYWORDS

trust in government, farmers, farmland transfer, interpersonal trust, China

## 1 Introduction

Guiding farmland transfer and promoting scaled management help address an aging workforce and fragmented land (Gao et al., 2018; Gong et al., 2019; Xiao and Zhao, 2018). The Chinese government has made significant progress in promoting farmland transfer, with the transfer rate reaching 36% by 2023. However, in some provinces like Guizhou, Qinghai, Shaanxi, and Gansu, the transfer rates are below 20% (Gao et al., 2020; Wang et al., 2023a). To bridge this gap and improve farmland transfer rates in underdeveloped regions, it is crucial to enhance farmers' willingness and behavior to participate in this process. Unfortunately, some farmers would rather leave their farmland idle than transfer it (Xu et al., 2019; Zeng et al., 2024; Zhou et al., 2020). This passive attitude toward farmland transfer hinders the improvement of farmland utilization efficiency, ensuring agricultural product supply, and promoting agricultural economic growth. Therefore, analyzing how to motivate farmers to engage in farmland transfer holds substantial practical relevance.

Previous studies have examined the policy factors affecting farmers' farmland transfer behavior. These policy factors mainly include land titling reform and public intervention

through establishing intermediary organizations from local governments (Bu and Liao, 2022; Cao et al., 2024; Cheng et al., 2019; Fan et al., 2024; Li and Ito, 2021; Ma et al., 2015; Qiu et al., 2022; Tang et al., 2019; Zhang et al., 2020a, 2022, 2023). The land titling reform promoted by the government can encourage farmers to both transfer in and transfer out farmland. For instance, Cheng et al. (2019) focused on China's land titling reform initiated in 2009, which enabled rural households to receive land certificates detailing the locations, boundaries, and areas of their land. With these certificates, farmers will be more confident in transferring out their farmland (Wang et al., 2015; Yan and Huo, 2016). Land titling reform can reduce the risk of land loss for farmers and incentivize them to make their farmland accessible (Xie et al., 2023). With the increase in farmland supply, farmers who want to scale up their farmland can be transfer in farmland from others (Rogers et al., 2021). In addition, Zhang et al. (2022) focused on the 2011 Land Certificated Program (LCP) in China and found that it encourages farmers to transfer in farmland. The reason is that farmers who obtain land certificates can use them as collateral to secure loans (Yan and Huo, 2016).

Although land titling reform promotes both the farmland transfer-out and farmland transfer-in among farmers, it does not address the challenge of effectively matching transferors with transferees. This matching challenge is closely linked to transaction costs. Higher transaction costs increase the likelihood of unsuccessful matches (Carter and Yao, 2002; Ito et al., 2016; Ma and Zhu, 2020; Ricker-Gilbert and Chamberlin, 2018). Fortunately, public interventions through establishing intermediary organizations from local governments can reduce transaction costs, thereby promoting farmland transfer (Tang et al., 2019; Zhang et al., 2023). Zhang et al. (2023) pointed out that in China, some local governments have established online platforms to facilitate farmland transfer, while others have created farmland transfer registration centers. These public interventions help significantly reduce contract supervision costs. Tang et al. (2019) further found that public interventions can lower both information search and contract supervision costs. With the decrease in transaction costs, the quantity and quality of farmland transfer will be improved (Holden et al., 2011).

The positive impacts of public interventions depend not only on the interventions themselves but also on farmers' trust in government. In practice, if farmers are unwilling to trust the effectiveness of public interventions, even well-designed efforts will be ineffective or have limited impacts (Fan et al., 2020; Pan et al., 2021; Peng et al., 2020a; Zheng et al., 2024a). Existing studies found that an increase in the degree of trust in government will enhance the effectiveness of policies and the welfare of human beings (Cai et al., 2020; Jiang et al., 2020; Sleiman et al., 2021; Wang et al., 2023b; Zheng et al., 2024b; Zuo et al., 2017). For instance, Cai et al. (2020) discovered that there is a positive nexus between trust in government and individual support for pension payments. Wang et al. (2023b) discovered that trust in government has a significant and positive impact on the innovation investments of small and medium enterprises. Zheng et al. (2024b) showed that the decrease of trust in government can dampen individual fertility intentions. Specific to the farmland transfer, if farmers trust the government to enforce public interventions fairly and

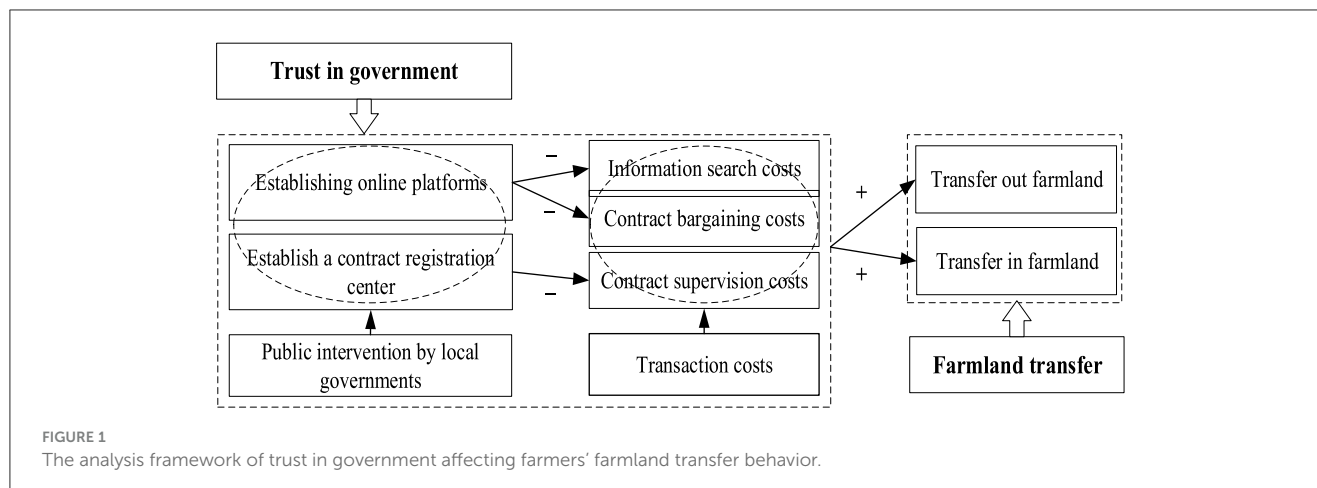
transparently, and perceive clear benefits, they are more likely to engage in farmland transfer activities. However, there is limited literature exploring the nexus between farmers' trust in government and their behaviors of farmland transfer.

In addition, trust in government is an important component of social trust. Social trust as a multidimensional concept has sparked extensive discussion in the field of sociology. It can be expressed not only in interpersonal trust but also in the trust between individuals and governments (Welch et al., 2005). From the perspective of social trust, previous studies have investigated the nexus between social trust and farmland transfer. The results showed that social trust as a whole is conducive to the transfer of farmland (Yuan and Pu, 2025). It is worth noting that social trust has multi-dimensional characteristics, and different dimensions of trust may play different roles in farmland transfer. Given this, scholars have tended to focus on interpersonal trust and discussed its impact on farmland transfer (Bai et al., 2019; Xie and Xu, 2024). However, research on the impact of government trust on farmland transfer remains limited, with even fewer investigating the relationship between interpersonal trust and government trust in influencing farmland transfer.

To fill in the research gaps, this study investigates the impact of farmers' trust in government on their behaviors of farmland transfer, by utilizing data from the China Family Panel Studies (CFPS) and the Probit model. The main empirical results show that trust in government has a significant and positive effect on both farmland transfer-out and transfer-in behaviors, with a stronger influence on transfer-out behaviors. Specifically, for each one-unit increase in trust in government, the probability of the farmer's farmland transfer-out behavior increases by 0.41%, while the probability of the farmer's farmland transfer-in behavior increases by 0.19%. The disaggregated analysis shows that farmers who receive government subsidies and use the Internet benefit the most. Further analysis shows that there is a substitutive relationship between government trust and interpersonal trust, both of which are key components of social trust, especially in farmland transfer-out activities.

This study introduces three innovations compared to prior research. First, we select the perspective of farmers' trust in government and investigate its impact on their farmland transfer behavior. To the best of our knowledge, growing attention has been paid to the role of local governments in promoting farmland transfer in China by establishing intermediary organizations. This is because such intervention helps reduce transaction costs, thereby facilitating the advancement of the farmland transfer market (Tang et al., 2019; Zhang et al., 2023). Although the local government serves as an intermediary in farmland transfer, farmers' participation remains voluntary. At this point, farmers' trust in government is likely to exert a significant impact. Thus, it is innovative to examine the effect of farmers' trust in government.

Second, farmers' farmland transfer behavior encompasses both transfer-out and transfer-in behaviors. Farmers' transfer-out and transfer-in behaviors will be affected by trust in government to different degrees. Specifically, in the absence of public intervention by the local governments, farmers usually transfer out their farmland based on interpersonal trust (Qiu et al., 2022). With the advance of public intervention, local governments can consolidate



the farmland of various farmers in the village and transfer it to demanders via standardized procedures, thereby providing greater security for farmers (Zhang et al., 2023). Given this, most farmers are willing to transfer out their farmland based on trust in government. Comparatively, farmland transfer-in depends primarily on the transferee's motivation for agricultural production and their capacity to pay rent, which is not directly alleviated by government trust. Thus, the impact of trust in government on farmers' transfer-out behavior may be greater.

Third, this study further examines the relationship between trust in government and interpersonal trust in the process of farmland transfer. Trust in government and interpersonal trust are both key components of social trust (Bryan et al., 2015; Son and Feng, 2019). Existing studies have showed that under information asymmetry, interpersonal trust could reduce the transaction costs and promote the farmland transfer (Tian et al., 2021; Wang et al., 2021). Meanwhile, trust in government could mitigate the transaction costs during the process of farmland transfer. Given this, trust in government and interpersonal trust are functionally consistent, and a substitutional relationship may exist between the two types of trust. Additionally, the results of this analysis are conducive to deeply understanding how social trust affects individual behavioral decision-making.

The rest of this study is designed as follows. Section 2 shows the theoretical analysis and research hypotheses. Section 3 presents the estimation strategy, variables, and data source. Section 4 discusses the impact of farmers' trust in government on their farmland transfer behavior. Section 5 shows the discussion. Finally, Section 6 shows the conclusion.

## 2 Theoretical analysis and research hypotheses

We discuss the impact of trust in government on farmers' farmland transfer-out and transfer-in behaviors by integrating the effects of public intervention by local governments on transaction costs (see Figure 1).

First, public intervention by local governments can theoretically reduce information search costs. Once farmers

trust the government's ability in this area, they are more likely to participate in farmland transfer-out and transfer-in activities. In China, local governments have actively acted as intermediaries by establishing online platforms to organize farmland transfer transactions. For instance, the government of Huaiji County, Zhaoqing City, Guangdong Province, has established a smart cloud platform for rural collective "three resources". Online platforms significantly lower information search costs for both transferors and transferees. Transferors can efficiently obtain contact details of potential transferees online (Lu et al., 2020), while transferees can remotely access farmland information, eliminating the need for on-site visits and saving time and expenses. The online platforms can reduce information search costs for both transferors and transferees. For transferors, they can easily access the contact details of potential transferees online (Lu et al., 2020). For transferees, they can remotely access farmland information, eliminating the need for on-site visits and saving time and expenses. However, transferors and transferees will utilize online platforms to transfer farmland if they trust the government's capabilities, believe in the platforms' fairness and authenticity, and think the platforms can reduce transaction costs.

Second, public intervention by local governments can theoretically reduce contract bargaining costs. Once farmers trust the government's ability in this area, they are more likely to participate in farmland transfer-out and transfer-in activities. Contract bargaining costs refer to the total amount of time, effort, money, and other resources expended by both parties to reach a mutual agreement (Yang, 2024). To minimize contract bargaining costs, it is essential to design and use standardized contract templates. This is because standardized contract templates clearly define the rights and obligations of both parties, thereby reducing negotiation time and costs arising from disputes over terms. Online platforms established by governments can provide standardized contract templates. In addition, online platforms can also offer legal consultation services, helping parties reach agreements quickly. However, transferors and transferees will utilize online platforms and transfer farmland if they trust the government's capabilities in providing standardized contract templates and legal services.

Third, public intervention by local governments can theoretically reduce supervision costs. Once farmers trust the

government's ability in this area, they are more likely to participate in farmland transfer-out activities. In China, poor performance in farmland transfer contracts occasionally arises (Cui et al., 2024). For instance, the transferee failed to pay the farmland rental on time as agreed in the contract, causing transferors to be unable to receive their due earnings; the transferee refuses to return the farmland after the contract expires. To reduce the post-contract enforcement risks, local governments request that farmland transfer transactions be registered with the farmland transfer centers (Tang et al., 2019). Registered contracts have stronger legal validity, and in the event of a dispute, they can serve as authoritative evidence, facilitating quick adjudication by courts, thereby reducing the cost and time associated with dispute resolution. However, only if both transferors and transferees trust the government's capabilities will they register the contract with the farmland transfer centers. With this trust, farmers are more likely to transfer out their farmland.

Based on the above analysis, this study proposes the following research hypotheses.

H1: Increased trust in government can encourage farmers to transfer out and transfer in farmland.

H2: The impact of trust in government on farmers' farmland transfer-out behavior is greater than that on farmers' farmland transfer-in behavior.

## 3 Estimation strategy, variables, and data source

### 3.1 Estimation strategy

To verify the impact of farmers' trust in government on their farmland transfer-out and transfer-in behaviors, we construct the following estimation model.

$$Transfer_i = \alpha_0 + \beta_1 Trust_i + \beta_2 Control_i + \varepsilon_i \quad (1)$$

Where the subscript  $i = 1, 2, \dots, N$  refers to the  $i$ th farmer, who is the head of the household in the rural area.  $Transfer_i$  is the dependent variable, representing the farmland transfer decision of the  $i$ th farmer.  $Trust_i$  is the core explanatory variable, representing the  $i$ th farmer's trust in government.  $Control_i$  is a set of control variables.  $\varepsilon_i$  is the random disturbance term.  $\alpha_0$ ,  $\beta_1$ , and  $\beta_2$  are the parameters to be estimated.

### 3.2 Variables

The dependent variable is the farmers' farmland transfer behavior, which includes both farmland transfer-out and transfer-in behaviors. Transfer-out behavior is a binary variable, and its value depends on whether a farmer transfers out his farmland to others. Transfer-in behavior is a binary variable, and its value depends on whether a farmer acquires farmland from others.

The key explanatory variable is trust in government, measured by the farmer's degree of trust in local government officials. The trust degree ranges from 0 to 10, with 0 representing complete distrust and 10 representing complete trust. As the score increases, the degree of government trust also increases.

Based on existing literature (Hu et al., 2023; Liu and Liao, 2024; Zhang et al., 2020a; Zheng et al., 2024a), the control variables encompass two categories: the personal traits of the rural household head and the characteristics of their household. The individual characteristics of the household head include age, gender, political identity, health status, education level, and digital literacy. Age, gender, health status, and political identity are the basic characteristics of an individual. Education level and digital literacy are important components of human capital. Education level refers to the formal education an individual has received. Digital literacy focuses on the ability to understand, master, and utilize digital tools and devices. In the era of the digital economy, the impact of digital literacy on individual decision-making is becoming increasingly significant. To measure farmers' digital literacy, we select the evaluation index system for digital literacy based on prior research and apply the entropy weight method (Duan et al., 2025; Li et al., 2024; Zhang et al., 2024; Zhao et al., 2022). The household characteristics include household size, non-farm employment behavior, car ownership, and financial product holdings.

Table 1 presents the variable descriptions and the descriptive statistical results. As shown in Table 1, the mean value of transfer-out behavior is higher than that of transfer-in behavior. The average of the key variable is 4.4093, indicating that the degree of farmers' trust in government needs to be enhanced. As for control variables, the average age is about 50, meaning that most heads of a household are in their middle age. The average value of the gender variable is 0.5963, meaning that most household heads are male. The mean value of political identity variable is 0.0913 and the average health status score is 3.0076. The average level of education shows that farmers receive limited formal education. The average level of digital literacy is 0.2955, indicating that farmers generally possess a relatively low level of digital literacy. Nearly 32.42% of rural households own a car, while only a small proportion hold financial products. Furthermore, the Variance Inflation Factor (VIF) values for the key variable and control variables are below the accepted threshold of 10, meaning that multicollinearity is not a concern (see Appendix).

### 3.3 Data source

The data for this study is drawn from the China Family Panel Studies (CFPS), a nationwide social tracking survey conducted by the Institute of Social Science Survey (ISSS) at Peking University. CFPS was initiated in 2010 and has been conducted biennially for follow-up surveys. As of now, it has released seven rounds of data spanning the years 2010 to 2022. This study utilizes the 2020 and 2022 survey rounds for empirical analysis, taking into account the adjustments and optimizations in China's agricultural land transfer policies. China issued the "Measures for the Administration of the Transfer of Rural Land Contractual Management Rights" in 2005. However, many provisions are now outdated due to changing circumstances and legal policies, requiring urgent updates. In 2019, the Ministry of Agriculture and Rural Affairs extensively solicited opinions from all sectors of society, leading to the revised "Measures for the Administration of the Transfer of Rural Land

TABLE 1 Descriptive statistics of variables.

Variables	Definition	Mean	S.D.
<b>Dependent variable</b>			
Transfer-out behavior	1 if the farmer transfers out the farmland to others, 0 otherwise	0.3576	0.4793
Transfer-in behavior	1 if the farmer transfers in the farmland from others, 0 otherwise	0.0980	0.2974
<b>Key variable</b>			
Trust in government	Farmer's trust in local government officials (0 = Very untrustworthy, 10 = Very trustworthy)	4.4093	2.7770
<b>Control variables</b>			
Age	Age of the farmer (years)	50.0099	14.5941
Age <sup>2</sup>	Age <sup>2</sup> of the farmer (years)	2,713.96	1,472.56
Gender	1 if the farmer is male, 0 otherwise	0.5963	0.4906
Political identity	1 if the farmer is a party member, 0 otherwise	0.0913	0.2881
Health status	1 = Very healthy; 2 = Healthy; 3 = Fairly healthy; 4 = Average; 5 = Unhealthy	3.0076	1.2268
Education level	0 = Illiterate; 1 = Nursery; 2 = Kindergarten; 3 = Primary school; 4 = Junior high school; 5 = Senior high school/Vocational school; 6 = Associate degree; 7 = Bachelor's degree; 8 = Master's degree; 9 = Doctorate	3.2541	1.9557
Digital literacy	Farmer's digital literacy	0.2955	0.2829
Household size	Number of people residing in the household	3.7648	2.0331
Non-farm employment	1 if the household member works away from home, 0 otherwise	0.3734	0.4837
Car ownership	1 if the household owns a car, 0 otherwise	0.3242	0.4681
Financial product holdings	1 if the household holds financial products, 0 otherwise	0.0411	0.1987

Management Rights.” This new version clarifies the roles of the government and its departments in land transfers, offering clearer guidance for standardization.

CFPS aims to collect comprehensive data across three dimensions: individuals, households, and communities. In this study, we utilize data at both the individual and household levels. We follow a three-step process to clean the data. First, we kept the rural household samples from the 2020 and 2022 waves, focusing on household heads as the primary decision-makers. Second, we appended the two waves of rural household data. Third, we delete samples that contain missing values. The final dataset comprises 9,151 samples.

## 4 Results

### 4.1 Baseline analysis

Due to the binary dependent variable, a Probit model is utilized for empirical analysis. The results are displayed in Table 2, with Columns 2 and 4 showing estimation results without control variables, and Columns 3 and 5 presenting results with control variables. From Column 2, it can be seen that trust in government has a significant positive impact on farmers' farmland transfer-out behavior. From Column 3, it can be seen that after incorporating control variables, the regression coefficient of trust in government is significant at the 5% level and remains 0.0041. This result indicates that for each level of increase in government trust, the

probability of farmers' farmland transfer-out behavior increases by 0.41%. From Column 4, it can be seen that without incorporating control variables, the coefficient of trust in government is 0.0027 and is significantly at the 5% level. After incorporating control variables, the coefficient of government trust slightly decreases to 0.0019 and remains significant at the 10% level, as shown in Column 5. This result indicates that for each level of increase in government trust, the probability of farmers' farmland transfer-in behavior increases by 0.19%. Based on the results in Table 2, we conclude that an increase in government trust can promote both farmers' farmland transfer-out and transfer-in behaviors. Thus, the H1 is confirmed. Additionally, the coefficient of trust in government in Column 3 is larger than that in Column 5, meaning that the impact of trust in government on farmers' farmland transfer-out behavior is greater than that on farmers' farmland transfer-in behavior. Thus, the H2 is confirmed. The above results suggest that enhancing farmers' trust in government during the process the farmland transfer is meaningful. In some rural areas of China, local governments have intervened in the process of farmland transfer, but farmers' responses have remained relatively unenthusiastic. One of the major reasons for this situation may be the lack of trust in government among farmers. At this point, efforts should be made to enhance their confidence in governmental policies and interventions regarding farmland transfer.

As for the impacts of control variables on farmers' behaviors of farmland transfer. The age has a non-linear impact on farmers' farmland transfer-out behavior, as shown in Column



TABLE 2 Results of baseline regression.

Variables	Transfer-out	Transfer-out	Transfer-in	Transfer-in
Trust in government	0.0041** (0.0018)	0.0041** (0.0017)	0.0027** (0.0011)	0.0019* (0.0011)
Age		−0.0321*** (0.0020)		0.0147*** (0.0017)
Age <sup>2</sup>		0.0003*** (0.0000)		−0.0001*** (0.0000)
Gender		−0.0846*** (0.0097)		0.0209*** (0.0064)
Political identity		0.0267 (0.0167)		0.0012 (0.0109)
Health status		0.0115*** (0.0041)		−0.0003 (0.0026)
Education level		0.0155*** (0.0028)		−0.0045** (0.0018)
Digital literacy		0.0717*** (0.0219)		0.0206 (0.0139)
Household size		−0.0391*** (0.0027)		0.0091*** (0.0015)
Non-farm employment		0.0659*** (0.0099)		0.0028 (0.0065)
Car ownership		0.0425*** (0.0112)		0.0190*** (0.0068)
Financial product		0.1516 (0.0247)		−0.0468 (0.0195)
Constant	−0.4134*** (0.0251)	1.9183*** (0.1610)	−1.3643*** (0.0343)	−3.7192*** (0.2672)
Observation	9,151	9,151	9,151	9,151

\* &lt;0.10.

\*\* &lt;0.05.

\*\*\* &lt;0.01.

Coefficient is a marginal effect. Robust standard errors are presented in parentheses.

3. Within a certain range, an increase in age hinders farmers from deciding to transfer out farmland; however, beyond that range, an increase in age has a significant positive impact on farmland transfer-out behavior. The main reason may be that with advancing age, the elderly experience a natural decline in physical strength and energy levels. This makes it increasingly challenging for them to perform the physically demanding tasks associated with agricultural work. At the same time, a non-linear relationship exists between age and farmers' farmland transfer-in behavior, as shown in Column 5. The variable of gender has a negative effect on farmers' farmland transfer-in behavior. This is due to the fact that the male labor force is more mobile and more likely to engage in non-farm employment. The variable of health status has a positive effect on farmers' farmland transfer-out behavior, indicating that the deterioration of health conditions will prompt farmers to make choices to transfer out their farmland.

The variable of education level positively influences farmers' farmland transfer-out behavior but negatively affects their farmland transfer-in behavior. The variable of digital literacy has a positive effect on farmers' farmland transfer-out behavior. These results can be explained. Individuals with a higher education level and digital literacy possess greater employment competitiveness, enabling them to more readily access opportunities in the non-farm sector. Non-farm employment not only offers higher income but also provides a better working environment. As for the impact of non-farm employment, it has a positive and significant effect on farmers' farmland transfer-out behavior at the 1% level, as shown in Column 3.

The variable of household size negatively influences farmers' farmland transfer-out behavior but positively affects their farmland transfer-in behavior. The reason may be that a larger household

size provides more labor resources, allowing for specialization and cooperation. Some family members can engage in agricultural production, while others take part in non-farm employment, thus diversifying the household's income. The variable of car ownership positively affects farmers' farmland transfer-out behavior. This result can be explained. Car ownership can function as a means of transportation, enabling farmers to access non-farm employment. With the participation of non-farm employment, farmers are willing to transfer out their farmland. Car ownership also has a negative and significant effect on farmers' farmland transfer-in behavior. As a means of transportation, cars enable farmers to travel more easily between their farmland and residences. This not only saves time and energy but also enhances the efficiency of farmland management. Accordingly, farmers are more likely to transfer in farmland to expand their operations and increase agricultural income.

## 4.2 Robustness analysis

### 4.2.1 Change the key explanatory variable

To test the robustness, we introduce an alternative indicator to measure farmers' trust in government. The indicator is based on farmers' evaluation of the county or municipal government, ranging from 1 to 5 points. A score of 1 indicates a worse situation than before, 2 signifies no achievement, 3 represents little achievement, 4 denotes some achievements, and 5 indicates significant achievements. Utilizing this alternative indicator, we conduct an empirical analysis based on the Probit model, with the estimation results presented in Columns 2 and 3 of Table 3. As demonstrated, the coefficients of trust in government remain positive and significant, confirming the robustness of the positive

TABLE 3 Robustness test.

Variables	Change the key explanatory variable		Change the regression model	
	Transfer-out	Transfer-in	Transfer-out	Transfer-in
Trust in government	0.0088* (0.0047)	0.0049* (0.0030)	0.0042** (0.0017)	0.0021* (0.0011)
Age	−0.0315*** (0.0020)	0.0177*** (0.0017)	−0.0314*** (0.0020)	0.0156*** (0.0019)
Age <sup>2</sup>	0.0003*** (0.0000)	−0.0002*** (0.0000)	0.0003*** (0.0000)	−0.0001*** (0.0000)
Gender	−0.0864*** (0.0096)	0.0236*** (0.0065)	−0.0845*** (0.0096)	0.0213*** (0.0065)
Political identity	0.0258 (0.0167)	−0.0000 (0.0109)	0.0267 (0.0165)	0.0021 (0.0109)
Health status	0.0039 (0.0029)	−0.0007 (0.0026)	0.0115*** (0.0041)	−0.0001 (0.0025)
Education level	0.0151*** (0.0028)	−0.0052** (0.0018)	0.0155*** (0.0028)	−0.0044** (0.0017)
Digital literacy	0.0717*** (0.0219)	0.0181 (0.0147)	0.0711*** (0.0217)	0.0213 (0.0137)
Household size	−0.0391*** (0.0027)	0.0107*** (0.0013)	−0.0409*** (0.0028)	0.0088*** (0.0014)
Non-farm employment	0.0653*** (0.0099)	0.0093 (0.0065)	0.0654*** (0.0098)	0.0027 (0.0065)
Car ownership	0.0418*** (0.0111)	0.0214*** (0.0069)	0.0435*** (0.0112)	0.0191*** (0.0067)
Financial product	0.159*** (0.0248)	−0.0587*** (0.0147)	0.1517 (0.0248)	−0.0487 (0.0214)
Constant	1.9523*** (0.1630)	−3.1861*** (0.2527)	3.1379*** (0.2657)	−7.1771*** (0.5637)
Observation	9,151	9,151	9,151	9,151

\* <0.10.  
\*\* <0.05.  
\*\*\* <0.01.  
Coefficient is a marginal effect. Robust standard errors are presented in parentheses.

effect of trust in government. In addition, the coefficient in Column 2 is larger than that in Column 3, confirming the robustness of the differentiated impact of trust in government on farmers’ transfer-out and transfer-in behaviors.

4.2.2 Change the regression model

To test the robustness, we replace the Probit model with the Logit model for empirical analysis, with the results presented in Columns 4 and 5 of Table 3. As demonstrated, the coefficients of trust in government remain positive and significant, confirming the robustness of the positive effect of trust in government. Moreover, the coefficient in Column 4 is stronger than that in Column 5, confirming the robustness of the differentiated impact of trust in government on farmers’ transfer-out and transfer-in behaviors.

4.2.3 Consider the endogenous problem

There may be unobserved factors in the random disturbance term that simultaneously influence farmers’ farmland transfer behavior and their trust in government, potentially leading to endogeneity issues and estimation bias. To address the endogeneity issue, we select an instrumental variable and apply the instrumental variable method (IV-Probit model). The instrumental variable (IV) is the trust in government at the village level, constructed by the average of all sample farmers’ government trust in the same village except for the farmer in question. The reason for selecting this IV is that farmers’ trust in government may be influenced by other farmers in the same village, whereas the trust of other farmers does not directly affect farmers’ decisions to engage in farmland transfer. Table 4 displays the IV-Probit model results, with Columns 2 and 4

showing the first-stage regression and Columns 3 and 5 presenting the second-stage regression. In Columns 2 and 4, the instrumental variable (IV) significantly and positively influences farmers’ trust in government at the 1% level. Column 3 shows that trust in government significantly enhances farmland transfer-out behavior, while Column 5 reveals a positive and significant coefficient of trust in government. These findings suggest that after addressing the endogeneity issue, the positive impact of trust in government remains robust.

4.3 Heterogeneity analysis

4.3.1 Government subsidies

Government subsidies are an important policy tool for the government to regulate agricultural production. Since 2015, the Chinese government has consistently adhered to the subsidy principle of “subsidizing those who actually cultivate the farmland”. According to this subsidy principle, scholars began to discuss the nexus between government subsidies and farmers’ behaviors of farmland transfer, but the results are unclear. Some scholars believed that government subsidies can encourage farmers to transfer farmland and promote large-scale agricultural operations (Peng et al., 2020b; Zou et al., 2020). However, some scholars proposed that government subsidies lead to an increase in farmland rent (Graubner, 2018), while higher farmland rent may reduce farmers’ incentives to transfer in farmland (Zhang et al., 2020b). Given this, we conduct a heterogeneity analysis based on whether the farmers receive government subsidies. The estimation results are presented in Table 5. As shown, only the coefficient represented

TABLE 4 Endogenous processing: IV-Probit model.

Variables	Trust in government	Transfer-out	Trust in government	Transfer-in
Trust in government		0.0455*** (0.0144)		0.0339* (0.0192)
Age	0.0639*** (0.0119)	−0.0968*** (0.0062)	0.0639*** (0.0119)	0.0868*** (0.0099)
Age <sup>2</sup>	−0.0001*** (0.0001)	0.0009*** (0.0000)	−0.0001*** (0.0001)	−0.0008*** (0.0000)
Gender	0.1641*** (0.0555)	−0.2521*** (0.0290)	0.1641*** (0.0555)	0.1235*** (0.0389)
Political identity	−0.4709*** (0.0952)	0.0961* (0.0505)	−0.4709*** (0.0952)	0.0188 (0.0661)
Health status	0.2304*** (0.0226)	0.0247** (0.0125)	0.2304*** (0.0226)	−0.0081 (0.0163)
Education level	−0.0064 (0.0161)	0.0448*** (0.0085)	−0.0064 (0.0161)	−0.0272** (0.0112)
Digital literacy	−0.4121*** (0.1252)	0.2217*** (0.0661)	−0.4121*** (0.1252)	0.1328 (0.0838)
Household size	−0.0176 (0.0139)	−0.1134*** (0.0076)	−0.0176 (0.0139)	0.0558*** (0.0093)
Non-farm employment	0.0474 (0.0567)	0.1885*** (0.0297)	0.0474 (0.0567)	0.0155 (0.0383)
Car ownership	0.1761** (0.0622)	0.1153*** (0.0328)	0.1761** (0.0622)	0.1073** (0.0419)
Financial product	−0.1166 (0.1391)	0.4611 (0.0730)	−0.1166 (0.1391)	−0.2707 (0.1162)
IV	0.9651*** (0.0267)		0.9651*** (0.0267)	
Constant	−1.2105*** (0.3294)	1.8223*** (0.1646)	−1.2105*** (0.3294)	−3.7881*** (0.2650)
Observation	9,151	9,151	9,151	9,151

\* <0.10.  
\*\* <0.05.  
\*\*\* <0.01.  
Robust standard errors are presented in parentheses.

TABLE 5 Heterogeneity analysis.

Variables	Government subsidies (Yes)		Government subsidies (No)	
	Transfer-out	Transfer-in	Transfer-out	Transfer-in
Trust in government	0.0023 (0.0024)	0.0041*** (0.0018)	0.0027 (0.0024)	0.0011 (0.0013)
Controls	Yes	Yes	Yes	Yes
Constant	0.6531*** (0.2826)	−2.7985*** (0.3842)	1.8453*** (0.2056)	−3.9137*** (0.3899)
Observation	4,232	4,232	4,919	4,919

\*\*\* <0.01.  
Coefficient is a marginal effect. Robust standard errors are presented in parentheses.

in Column 3 is positive and significant at the 1% level. This result suggests that farmers who receive government subsidies and trust the government are more likely to transfer in farmland from others. The possible reason may be that farmers who trust the government believe in the continuity of the subsidy policy and the government’s support for large-scale farmland operations. With this belief, these farmers are willing to participate in farmland transfer-in activities.

4.3.2 Internet use

The Internet is an important source of information on farmland transfer. Based on the advantages of the Internet in providing and delivering information, existing studies have discovered that internet use can increase the likelihood of farmers participating in farmland transfer (Gu, 2024; Zuo and Hong, 2022). Given this, we conduct a heterogeneity analysis based on whether the farmers use the Internet. The estimation results are presented in Table 6. As shown, the coefficient represented in Column 2 is positive and significant at the 5% level. The coefficient represented

in Column 3 is positive but insignificant. These results suggest that farmers who use the Internet and trust the government are more likely to transfer out their farmland. The main reason is that farmers who use the Internet can more easily access information related to off-farm employment, thereby increasing farmers’ likelihood of engaging in non-farm employment. Once farmers decide to engage in non-farm work, they may choose to transfer out their farmland to reduce farming obligations and earn additional income through farmland rent. Equally important, internet usage can provide farmers with timely information on government services, thereby encouraging their participation in farmland transfer organized by local governments. Meanwhile, the coefficient in Column 4 is positive and insignificant, while in Column 5 it remains positive but becomes significant, meaning that farmers who do not use the Internet but trust the government are more likely to transfer in farmland. The possible reason may be that farmers who do not use the Internet may be more dependent on agriculture and have the potential to transfer in farmland. In addition, the coefficient in Column 2 is greater than that in



TABLE 6 Heterogeneity analysis.

Variables	Internet use (Yes)		Internet use (No)	
	Transfer-out	Transfer-in	Transfer-out	Transfer-in
Trust in government	0.0058** (0.0023)	0.0009 (0.0014)	0.0019 (0.0026)	0.0032* (0.0016)
Controls	Yes	Yes	Yes	Yes
Constant	1.7949*** (0.297)	−4.0360*** (0.446)	2.1215*** (0.2507)	−3.6219*** (0.3969)
Observation	4,763	4,763	4,386	4,386

\* <0.10.  
\*\* <0.05.  
\*\*\* <0.01.  
Coefficient is a marginal effect. Robust standard errors are presented in parentheses.

TABLE 7 The relationship between trust in government and interpersonal trust.

Variables	Transfer-out	Transfer-in
Interpersonal trust	0.0072*** (0.0023)	0.0026* (0.0015)
Interaction term	−0.0005* (0.0002)	−0.0000 (0.0002)
Controls	Yes	Yes
Constant	1.9074*** (0.1611)	−1.7943*** (0.1232)
Observation	9,151	9,151

\* <0.10.  
\*\*\* <0.01.  
Robust standard errors are presented in parentheses.

Column 5, meaning that farmers who use the Internet benefit the most.

4.4 Further analysis: trust in government and interpersonal trust

Interpersonal trust and governmental trust, as the two core dimensions of social trust, play a significant role in shaping the socio-economic behaviors of farmers. Among them, interpersonal trust has long been regarded as an important factor influencing farmers’ behaviors of farmland transfer (Tian et al., 2021; Wang et al., 2021). However, with the increase in public intervention through establishing intermediary organizations from local governments, the role played by governmental trust is gaining prominence. Given this, we investigate the relationship between trust in government and interpersonal trust by incorporating an interaction term into the analysis. The interaction term refers to trust in government times interpersonal trust. As for interpersonal trust, it is measured by the farmers’ trust in their neighbors. The trust level ranges from 0 to 10, with 0 representing complete distrust and 10 representing complete trust.

The estimated results regarding the relationship between trust in government and interpersonal trust are presented in Table 7. In Column 2, the coefficient of the interaction term is negative and significant at the 10% level, indicating a substitutive relationship between the two types of social trust. In specific, when government trust is low, interpersonal trust is an important factor influencing farmers’ decisions to transfer out their farmland; however, its

marginal effect weakens as farmers’ trust in government increases. This result is relatively consistent with reality. In some rural areas of China (such as Jiujiang District of Wuhu City and Lingling District of Yongzhou City), the local governments began to intervene in the transfer of farmland by providing intermediary services. This intervention, supported by farmers’ trust and active participation, could facilitate the realization of centralized land transfers. In Column 3, the coefficient of the interaction term is not statistically significant, meaning that the substitutive effect of government trust on interpersonal trust is minimal during the process of farmland transfer-in.

5 Discussion

The transfer of farmland is an important path to promote the development of Chinese agriculture. To effectively promote the transfer of farmland, public intervention through establishing intermediary organizations from local governments is becoming an important pattern. However, whether farmers transfer farmland through government intervention is up to them, and their choices are influenced to some extent by their trust in government. The estimator results in this study show that farmers’ trust in government has a positive impact on their farmland transfer behavior, indicating the importance of trust in government. This finding is similar to the conclusion of existing studies (Sleiman et al., 2021; Wang et al., 2023b), which emphasized that trust in government helps to improve the implementation efficiency of policies. Our disaggregated analysis shows that for farmers who receive government subsidies and use the Internet, the positive effects of trust in government are more pronounced. These findings can be supported by previous studies. For instance, Peng et al. (2020b) highlighted the important role of government subsidies. Zuo and Hong (2022) emphasized that Internet usage has a positive impact on farmers’ farmland transfer-out behavior.

Additionally, we find that there is a substitutional relationship between trust in government and interpersonal trust. This finding validates the views of existing studies (Tian et al., 2021; Wang et al., 2021), which pointed out that there are interactions between different dimensions of social trust. The above results could provide scientific references for accelerating the promotion of high-quality transfer of farmland and understanding the impacts of social trust.

## 6 Conclusion, policy implications, and limitations

Encouraging farmers to participate in farmland transfer remains a critical practical issue in China. This study explores the impact of farmers' trust in government on their behaviors of farmland transfer, using data from the CFPS and the Probit model. The empirical results reveal that trust in government has a significant and positive effect on farmers' farmland transfer-in and transfer-out behaviors, with a stronger effect on transfer-out behavior. In specific, for each one-unit increase in government trust, the probability of the farmer's farmland transfer-out behavior increases by 0.41%, while the probability of the farmer's farmland transfer-in behavior increases by 0.19%. The positive impacts of trust in government remain robust after replacing the core explanatory variables, changing the regression model, and addressing endogeneity issues. The disaggregated analysis reveals that for farmers who receive government subsidies and use the Internet, the positive effects of trust in government are more pronounced. Specifically, for farmers who receive government subsidies, the positive impact of trust in government on farmers' farmland transfer-in behavior is more pronounced. For farmers who use the Internet, the positive impact of trust in government on farmers' farmland transfer-out behavior is more pronounced. Furthermore, the results reveal that there is a substitutive relationship between government trust and interpersonal trust, both of which are key components of social trust.

Based on the above findings, we put forward the following policy recommendations. First, local governments should pay more attention to the degree of farmers' trust in government and strive to enhance farmers' trust in it. To accurately and timely grasp the degree of farmers' trust in government, the local authorities should organize a specialized team to conduct surveys and interviews with farmers. The contents of the surveys and interviews should be centered on farmers' perceptions of government policies, their experiences with administrative services, and their expectations for support in agricultural activities. The forms of the surveys and interviews can be various, such as online, offline, and a combination of both. To enhance farmers' trust in government, it is necessary to improve the democracy and rationality of policy design and ensure the fairness of policy implementation. Second, local governments should strictly implement the agricultural subsidy policies formulated by the central government and ensure that subsidies are distributed accurately, promptly, and equitably, thereby fully encouraging farmers' enthusiasm for agricultural production. Differentiated subsidy strategies should be given according to the characteristics of farmers' farmland operations. For instance, providing more subsidies to farmers who transfer in farmland and operate on a large scale, as this can encourage them to maintain large-scale operations. Third, to enhance the probability of farmers' understanding of the policy and their participation in it, it is necessary for local government to utilize a variety of methods, especially the Internet, to deliver information.

It is important to recognize that this study has certain limitations, primarily stemming from constraints in data availability. First, we primarily focus on whether farmers participated in the transfer of farmland, without investigating specific details such as the size of the transferred farmland or the duration of the transfer. Second, we fail to measure farmers' trust in government using other indicators, such as policy satisfaction and government service evaluation. In the future, we will bridge this limitation by incorporating more comprehensive survey data.

## Data availability statement

Publicly available datasets were analyzed in this study. This data can be found at: <https://www.issf.pku.edu.cn/cfps/>.

## Author contributions

XG: Writing – original draft, Writing – review & editing. HF: Writing – review & editing.

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## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Appendix

TABLE A1 VIF test.

Variables	VIF	1/VIF
Trust in government	1.03	0.9664
Age	1.84	0.5449
Gender	1.05	0.9558
Political identity	1.07	0.9389
Health status	1.10	0.9097
Education level	1.40	0.7131
Digital literacy	1.77	0.5642
Household size	1.09	0.9197
Non-farm employment	1.05	0.9531
Car ownership	1.20	0.8367
Financial product	1.07	0.9303
Mean VIF	1.24	