



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

Study on the Influence of Farmer Social Capital on Cooperative Supply Willingness of Agricultural Disaster Reduction Public Goods——Based on the Investigation on 515 Farmers

Jiarui XU*, Yi JIANG, Qi WO, Shuying XIAO

College of Economics and Management, Huazhong Agricultural University, Wuhan 430070, China

Abstract Based on social capital theory, related factors of three dimensions (structure dimension, cognition dimension and relation dimension) of farmer social capital are taken as independent variables, and farmer's willingness to cooperatively supply agricultural disaster reduction public goods is taken as dependent variable. Taking 515 farmers in 27 villages of Hubei Province as investigation objects, the influence of farmer social capital on cooperative supply willingness of agricultural disaster reduction public goods is explored by Logistic regression model. Research results show that social solidarity, common value concept, social trust and reciprocal content have positive impact on farmer's willingness of cooperative supply, while annual household income, number of agricultural disaster reduction public goods and social network have negative impact on farmer's willingness of cooperative supply.

Key words Social capital, Agricultural disaster reduction public goods, Cooperative supply, Farmer's willingness

1 Introduction

According to the information of website for Ministry of Civil Affairs, there were 186.203 million people affected by various natural disasters in 2015, and the affected area of agricultural crops reached $21769.8 \times 10^3 \text{ hm}^2$, in which there was $2232.7 \times 10^3 \text{ hm}^2$ of harvest failure, and direct economic loss reached 270.41 billion yuan. Therefore, prevention and management of agricultural disaster are very important in rural construction process. But seen from whole countryside, supply of disaster reduction public goods still has many problems: total shortage, lagged watch and low efficiency. It is because of China's supply system from top to down, that is, country decides the number and species of public goods, and it lacks demand expression mechanism taking farmer's will as decision principle, causing that supply does not match with demand^[1]. After experiencing low supply efficiency of rural public goods by market and government, its supply transforms from government led to farmer independent supply. By comparing supply efficiency of public goods by government and person, Zheng Shuyao approved the necessity of private supply of public goods, and obtained feasibility of private supply^[2]. Therefore, it has extremely important theoretic and actual significance to study the influence factors of farmer social capital on cooperative supply willingness of agricultural disaster reduction public goods under the above background.

2 Literature review

At present, there is clear definition on agricultural disaster reduction public goods in academic circles. Yan Fengxian *et al.* thought that agricultural disaster reduction public goods indicates the pro-

vided rural public product or service to defense agricultural natural disaster and avoid agricultural risk in rural community range^[3]. Based on previous opinions, in this paper, agricultural disaster reduction public goods is defined as rural common product or service which is used to rationally avoid agricultural risk and decrease loss brought by agricultural natural disaster in rural region. The definition of social capital mainly contains two kinds: Bourdieu's "resource theory" and Coleman's resource element theory. In this paper, social capital is defined as the ability of obtaining resource and realizing information share by using connection or social relationship. Guo Ronghua thought that some performance forms of social capital are important factors of farmer joining in rural public goods supply, such as transparency of public expenditure, farmer's trust degree on other villagers, and surrounding resident joining in supply of public goods^[4]. Li Bingbing *et al.* analyzed the influence of social capital on farmer's behavior, and result showed that farmer's social capital is conducive to promoting farmer joining in supply of rural public goods^[5]. There are more researches on subdivision dimension of social capital, but there are fewer researches on subdivision of three dimensions of social capital. Based on the existing results, selecting typical three-dimension framework of social capital proposed by Nahapiet *et al.*, namely structure dimension, cognition dimension and relation dimension^[6], and starting from the angle of cooperation, the influence of social capital on cooperative supply willingness of agricultural disaster reduction public goods is studied. Dyer *et al.* proposed that connection is refinement embodiment of social capital, and it is because that social connection of network member could realize information share and promote information communication among members^[7]. The research of Adler *et al.* further showed that the closer the population's connection, the more the potential information communication^[8]. Seen from cognition dimension of social capital,

Received: November 3, 2016 Accepted: January 2, 2017

Supported by National Natural Science Foundation Item(71373098).

* Corresponding author. E-mail: 370896997@qq.com

Peng Changhong thought that social capital describes same value embodiment of different individuals on organization task and target, including common language and equal value concept, and common will and goal are conducive to promoting cooperation formation^[9]. On this basis, cognitive social capital is divided into four aspects: social trust, common target, common value concept and social norm. "Network key" used in structure dimension by Kang *et al.*^[10] is used to measure member interaction in relation dimension. In this paper, social relationship is divided into four kinds of indexes: interaction frequency, cognition time, close degree and reciprocal service. Bruni *et al.* proposed that in social interaction process, people are used to giving feedback to others in the way they treat themselves, and this interpersonal interaction is called as "weak reciprocity", which still corresponds with the opinion of "rational man" and is a kind of self-interest tendency^[11]. To the 1990s, corresponding "strong reciprocity" started to appear, and it indicates that two parties A and B select cooperation strategy under repeated game. Therefore, the effect of strong reciprocity theory restricting cooperation behavior can not be ignored^[12]. In this paper, according to social capital theory, by studying the influence factors of farmer voluntary cooperation sup-

ply, suggestions and incentive measures of promoting farmer voluntary cooperation supply are proposed, making that farmer plays a role in the process of offering disaster reduction public goods.

3 Data source and variable selection

3.1 Data source Data are from three counties of Hubei Province, with developed agricultural economy but frequent natural disaster, and they are Yiling District of Yichang City, Suixian County of Suizhou City and Xishui County of Huanggang City. The three counties are respectively in west, middle and east Hubei Province, with certain regional representation. According to the affected situation, three towns are selected from each county, and three villages are selected randomly from each town for investigation. There are 540 copies of questionnaires collected from 27 villages. After ridding invalid questionnaire, 515 copies of effective questionnaires are obtained, with effective rate of 95.37%.

3.2 Variable selection (i) Explanatory variables. In this paper, farmer social capital is divided into three dimensions: structure dimension, cognition dimension and relation dimension. According to the three dimensions, questionnaire is designed (Table 1).

Table 1 Questionnaire content of farmer social capital

Farmer social capital dimension	Question
Structure dimension	Q7 Your communication degree with relatives
	Q8 Your communication degree with village cadres and collective
	Q9 Your communication degree with neighbors
	Q10 Your communication degree with farmers with noble character and high prestige
	Q11 Your communication degree with agricultural organization
	Q12 Your communication degree with family members
	Q13 Your understanding degree on one thing and one discussion of rural public goods financing
	Q14 Your joining frequency in one thing and one discussion
	Q15 Payment frequency of one thing and one discussion
	Q16 If you take part in one thing and one discussion, the frequency of expressing real advice and opinion
	Q17 If you propose opinion, is your opinion often adopted
Cognition dimension	Q18 How is organizational mobilization power of your village collective
	Q19 How is collective honor and cohesion sense of your village
	Q20 If your village is neighborhood unity and has high well-being sense
	Q21 Your trust degree on neighbors
	Q22 Your trust degree on relatives
	Q23 Your trust degree on village committee and cadres
	Q24 Your trust degree on farmers with noble character and high prestige
	Q25 Your trust degree on agricultural organization
	Q26 Your trust degree on family members
	Q27 Your trust degree on ordinary people
	Q28 Your trust degree on stranger
Relation dimension	Q29 Help frequency of relatives and friends when family has a happy event
	Q30 Help frequency of relatives and friends when farming is busy
	Q31 Help frequency of relatives and friends when building house
	Q32 Frequency of you helping when people have a contradiction
	Q33 Frequency of you helping when people make a decision
	Q34 Villager's respect degree on you
	Q35 Your joining frequency if village has problem to be solved
	Q36 Joining frequency in village collective activities
	Q37 Joining frequency in village cadre election
	Q38 Your proposing frequency when village public affairs are made decision

(ii) Interpreted variables. Firstly, Q39: farmer's willingness of cooperative supply, that is, if farmer is willing to supply disaster reduction public goods with other farmers, and if farmer is willing to encourage surrounding farmer for cooperative supply. Secondly, Q40: if you agree that public goods supply is every farmer's duty. Thirdly, Q41: if you agree that farmer participation could improve supply level of public goods.

(iii) Control variables. Control variables contain Q1 farmer sex, Q2 farmer age, Q3 if engaged in agricultural production activity in full time, Q4 culture degree, Q5 annual household income, Q6 if village has agricultural disaster reduction public goods.

According to elaboration of theoretical part and selection of above variables, theoretic model is established (Fig. 1).

4 Empirical analysis

4.1 Reliability and validity analyses Because that Cronbach α coefficient calculation method is scientific, the manner is used to measure credibility of the questionnaire. After credibility analysis on all indexes, it is obtained that Cronbach α coefficient of structure dimension is 0.775; Cronbach α coefficient of cognition dimension is 0.783; Cronbach α coefficient of relation dimension is 0.870, and Cronbach α coefficient of cooperative supply will-

ingness is 0.9, which is all more than 0.7. It shows that the survey data have very good credibility, and questionnaire has higher reliability. Next, validity of structure dimension, cognition dimension, relation dimension and cooperative supply willingness is analyzed, and structure rotation component matrix is made.

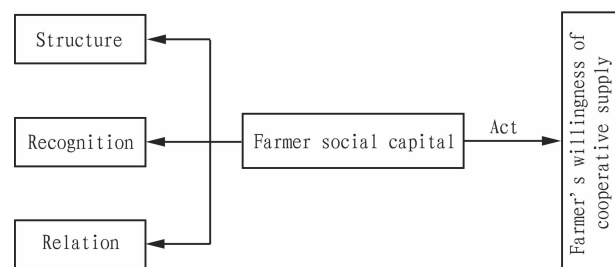


Fig. 1 Theoretic model

(i) Validity analysis of structure dimension. Validity test is conducted on the questionnaire, and its validity is tested. By SPSS19, factor analysis of all indexes is conducted. It is obtained that KMO value of social structure is $0.777 > 0.5$, and P value of Sig test is $0.000 < 0.01$ (Table 2). It illustrates that the questionnaire design is relatively rational, and validity feasibility is higher.

Table 2 Rotational component matrix of structure dimension

Item	1	2	3
Q7 Communication with relatives	-0.065	0.776	0.147
Q8 Communication with village cadres	0.077	0.436	0.548
Q9 Communication with neighbors	0.023	0.736	0.231
Q10 Communication with authoritative peasants	-0.019	0.051	0.885
Q11 Communication with agricultural organization	-0.118	0.088	0.852
Q12 Communication with family members	-0.086	0.768	-0.045
Q13 Understanding degree of one thing and one discussion	0.737	0.121	-0.093
Q14 Participation frequency in one thing and one discussion	0.893	-0.014	-0.024
Q15 Payment frequency	0.862	-0.238	-0.091
Q16 Frequency of expressing opinions and suggestions	0.871	-0.157	0.009
Q17 Opinion be adopted	0.763	-0.072	0.063

Factor 1(A1) has higher load on Q13, Q14, Q15, Q16 and Q17, and these factors are all related to social system of village. Therefore, factor 1 could be named as social system of village. Factor 2(A2) has higher load on Q7, Q9 and Q12, and they are communication degree with relatives, communication degree with neighbors and communication degree with family members. Therefore, factor 2 could be named as social network. Factor 3(A3) has higher load on Q8, Q10 and Q11, and they are communication degree with village cadres and village collective, communication degree with farmers with noble character and high prestige and communication degree with agricultural organization. Therefore, factor 3 could be named as social solidarity.

(ii) Validity analysis of cognition dimension. Using above validity analysis and rotation component matrix, it is clear that KMO of social cognition is $0.735 > 0.5$, illustrating that factor analysis of the investigation could be accepted, and it is suitable

for conducting factor analysis. Additionally, $\text{Sig} = 0.000 < 0.01$, illustrating that correlation coefficient matrix of factor is not unit matrix, which could extract the fewest factor and explain most of variance, with significant correlation. Factor 4(A4) has higher load on Q18, Q19 and Q20, and they are organization mobilization ability of village cadres, community cohesion and neighborhood unity. These factors are all related to resources owned by the community. Therefore, factor 4 could be named as community norm. Factor 5(A5) has higher load on Q21, Q22 and Q26, and they are trust on relatives, neighbors and family members. Therefore, factor 5 is named as social trust. Factor 6(A6) has higher load on Q23, Q24 and Q25, and they are trust on village cadre, authoritative peasant and agricultural organization. Therefore, factor 6 could be named as common value concept. Factor 7(A7) has higher load on Q27 and Q28, and they are trust on stranger and ordinary people. Therefore, factor 7 could be named as stranger

joint.

(iii) Validity analysis of relation dimension. By validity analysis and rotation component matrix, it is obtained that KMO of social relation is $0.841 > 0.5$, illustrating that factor analysis of the investigation could be accepted, and it is suitable for conducting factor analysis. Additionally, $Sig = 0.000 < 0.01$, illustrating that correlation coefficient matrix of factor is not unit matrix, which could extract the fewest factor and explain most of variance, with significant correlation. Factor 8 (A8) has higher load on Q29, Q30, Q31, Q32 and Q33, and they are help frequency of relatives and friends when family has happy event, help frequency of relatives and friends when farming is busy, help frequency of relatives and friends when building house, your help frequency when other people have a trouble and make a decision. These factors are all related to resources owned by the community. Therefore, factor 8 could be named as reciprocal content. Factor 9 (A9) has higher load on Q34, Q35, Q36, Q37 and Q38, and they are villager's respect degree on you; your participation frequency if village has a problem to be solved; participation frequency in village collective activity; participation frequency in village cadre selection; your proposing frequency when public affairs of village are made decision. Therefore, factor 9 could be named as interaction frequency.

(iv) Validity analysis of cooperative supply willingness. Using validity analysis and rotation component matrix, KMO of cooperative supply willingness is $0.754 > 0.5$, illustrating that factor analysis of the investigation is feasible, and it is suitable for conducting factor analysis. Additionally, $Sig = 0.000 < 0.01$, illustrating that correlation coefficient matrix of factor is not unit matrix, which could extract the fewest factor and explain most of variance, with significant correlation. Factor 10 (A10) has higher load on Q39, Q40 and Q41, and they are if you are willing to join in supply of disaster reduction public goods; if you agree that participation in decision making of disaster reduction public goods supply is every farmer's duty; if you agree that farmer participation could improve supply level of rural republic goods at certain degree. These factors are all related to farmer's willingness of voluntary provision. Therefore, factor 10 could be named as cooperative supply willingness. Overall, by exploratory factor analysis on farmer's social capital, 9 influence factors are obtained, namely Y cooperative supply willingness (Q39, Q40 and Q41), X_1 social system of village (Q13, Q14, Q15, Q16 and Q17), X_2 social network (Q7, Q9 and Q12), X_3 social solidarity (Q8, Q10 and Q11), X_4 community norm (Q18, Q19 and Q20), X_5 social trust (Q21, Q22 and Q26), X_6 common value concept (Q23, Q24 and Q25), X_7 stranger joint (Q27 and Q28), X_8 reciprocal content (Q29, Q30, Q31, Q32 and Q33) and X_9 interaction frequency (Q34, Q35, Q36, Q37 and Q38).

4.2 Regression model analysis Because that structure, recognition and relation of independent variable are count type of variables, and probability range of each value of dependent variable (cooperative supply of agricultural disaster reduction public goods by farmer) is $0 - 1$, Logistic regression method could be used to establish logistic regression model on probability value of dependent variable. In this paper, dependent variable has two value lev-

els. It is supposed that Logistic regression model of dependent variable at the i^{th} level is:

$$p_i = F(y_i) = F(\alpha + \beta X_i) = \frac{1}{1 + e^{-z}}$$

$$z = \ln\left(\frac{p_i}{1 - p_i}\right) = \alpha_0 + \sum \beta_p X_p$$

Logistic regression model of the i^{th} level could be set:

$$z = \ln\left(\frac{p_i}{1 - p_i}\right) = \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_i X_i + \varepsilon$$

Here, ε is mutually independent random error item with mean of

0, and i is linear function of X_i and β_i . $\frac{p_i}{1 - p_i}$ is called as rate of event occurrence, and indicates occurrence rate of different cooperative supply willingness. X_i shows the i^{th} factor of independent variable, which contains X_1 social system of village, X_2 social network, X_3 social solidarity, X_4 community norm, X_5 social trust, X_6 common value concept, X_7 stranger joint, X_8 reciprocal content and X_9 interaction frequency. Besides the 9 independent variables, there are 6 control variables in this paper, including X_{10} farmer sex, X_{11} age, X_{12} if engaged in farming in full time, X_{13} culture degree, X_{14} annual income and X_{15} disaster reduction public goods. β_i is parameter, and z_i is dependent variable, with value between 0 and 1.

$$z_i = \begin{cases} 1, & \text{willing to participate in cooperative supply} \\ 0, & \text{not willing to participate in cooperative supply} \end{cases}$$

(i) Model summary. Cox Snell R square and Nagelkerke R square are used to replace statistical amount of R square in linear regression. In this paper, Cox Snell R square and Nagelkerke R square are respectively 0.190 and 0.272, and fitting degree of the model is ideal.

(ii) Result test. LR (likelihood ratio) method is used to screen independent variable, and the model obtains the same result by using three kinds of test methods. Zero hypothesis of "Hosmer and Lemeshow test" table could fit data well. Seen from $Sig = 0.734 > 0.5$, zero hypothesis is accepted, and it is thought that the model could fit data well. The probability predicted by "random nature of Hosmer and Lemeshow test" table according to target variable divides result into ten groups. In the column of "total", it is observation value of each group. Because that observation value with same predicted value is divided together, observation number of each group is not same. Table 3 intuitively reflects predicted result of the model. It is clear that total of rows 1 - 9 is 42, and total of the 10th row is 36, and observed value and predicted value in each row are roughly same. Therefore, it is thought that the model has good fitting effect.

(iii) Parameter estimation. By combining P value of Wald test of each parameter in Table 4, the 7 independent variables passed significance test: annual household income, number of disaster reduction public goods, social network, social solidarity, common value concept, social trust and reciprocal content. Therefore, the 7 factors are important indexes affecting if farmer is willing to cooperatively offer agricultural disaster reduction public goods.

Table 3 Model result test

Group	Cooperative supply willingness = 0.00(No)		Cooperative supply willingness = 1.00(Yes)		Total
	Observed value	Predicted value	Observed value	Predicted value	
1	28	30.011	14	11.989	42
2	21	21.158	21	20.842	42
3	17	17.273	25	24.727	42
4	18	14.020	24	27.980	42
5	10	11.213	32	30.787	42
6	11	9.279	32	33.721	43
7	6	7.056	36	34.944	42
8	4	5.371	38	36.629	42
9	5	3.498	37	38.502	42
10	0	1.120	36	34.880	36

Seen from the above researches, annual household income level X_{14} shows negative correlation with cooperative supply willingness. It is because that income structure of farmer with more annual household income is relatively diverse. When agricultural disaster is serious, some loss could be made up from other income structure. Therefore, its willingness of cooperative supply is smaller. Disaster reduction public goods X_{15} has significantly negative impact on farmer's cooperative supply willingness. For social network X_2 , when social network of farmer is dense, his channel of obtaining asset is more, causing that his dependence degree on agriculture is lower, and attention and participation degrees in affairs related to agricultural disaster reduction are lower. In farmer cognition factors, community norm X_4 , social trust X_5 and common

value concept X_6 show significantly positive correlation with cooperative supply willingness. It is because that when community norm is unified and harmonious, village cadres are easy to implement village norm. When inter-trust degree among farmers is stronger, and their cooperative supply willingness is stronger. Same value concept could make that cooperation behavior become easy. In farmer relation factors, reciprocal content X_8 has positive impact on cooperative supply willingness. For mutual benefiter, cooperation is powerful means realizing win-win. Therefore, they could actively seek cooperation with other at each aspect to realize win-win situation. Thumbing a lift may cause the behavior not favorable for mutual benefiter and directly cause break of cooperation behavior.

Table 4 Parameter estimation

Item	Coefficient	Standard deviation	Wald value	df	Significant level	Exp (B)
X_{14} Annual household income	-0.008	0.006	1.980	1	*	0.992
X_{15} Disaster reduction public goods	-1.577	0.538	8.601	1	* *	0.207
X_2 Social network	-1.037	0.200	26.813	1	* * *	0.355
X_4 Community norm	0.506	0.169	8.993	1	* *	1.659
X_5 Social trust	0.333	0.153	4.745	1	*	1.395
X_6 Common value concept	0.674	0.194	12.050	1	* * *	1.962
X_8 Reciprocal content	0.362	0.122	8.752	1	* *	1.436
Constant	-0.106	0.904	0.014	1	0.906	0.899

Note: * * *, * * and * respectively show significance at the levels of 0.01, 0.05 and 0.1.

5 Conclusions and suggestions

5.1 Conclusions Seen from empirical analysis, annual household income level shows negative impact on cooperative supply willingness, that is, farmer's household income is inversely proportional to cooperative supply willingness of agricultural disaster reduction public goods. If having public facility of disaster reduction belongs to social condition of village, and it has significantly negative impact on farmer's willingness of cooperative supply. Farmer's sex, age, culture degree and whether engaged in agricultural production activity in full time have insignificant influences on farmer's willingness of cooperative supply. In the research on the influence of farmer structure factor on cooperative supply willingness, farmer structure is divided into three factors (social system of village, social network and social solidarity) by factor analysis. Only social network passes significance test, and social network shows significantly negative correlation with farmer's willingness of

cooperative supply. Social system of village and social solidarity have insignificant impact on farmer's cooperative willingness. In the research about the influence of farmer's cognition dimension on cooperative supply willingness, community norm, social trust and common value concept pass significance test, illustrating that community norm, social trust and common value concept show significantly positive correlation with farmer's willingness of cooperative supply, while stranger joint does not have significant correlation. In the research about the influence of farmer relation dimension on cooperative supply willingness, farmer relation is divided into reciprocal content and interaction frequency by factor analysis. Reciprocal content passes significance test, but interaction frequency does not have significant correlation.

5.2 Suggestions Firstly, distinguish heterogeneity of individual and village community. Town government and village committee of rural community should timely register and manage the condition of

agricultural disaster reduction public goods in village community, and timely understand farmer's demand and village community condition, to avoid causing that agricultural disaster reduction public goods exists but can not be used, thereby causing resource idle and waste. In addition, it should understand farmer's demand and use "an antidote against the disease", and design different excitation mechanisms to promote cooperation. Secondly, it should enhance the construction of social network in the cooperative supply process of disaster reduction public goods. It is suggested that village committee should organize farmers joining in community activity. Via these channels, it could enhance connection among farmers and villages, thereby forming a kind of atmosphere of positive communication between internal and external. Finally, it should enhance standard construction power of community, actively maintain and steady social trust, and strengthen creating win-win value concept. It is crucial to improve farmer's cooperation consciousness and enhance rural community's system and norm. It could call out village elite, farming household or intellect in rural community to set an example by personally taking part, extensively participate, and drive other farmers joining in the stream of cooperative supply of agricultural disaster reduction public goods, thereby establishing systemic, normal, harmonious and reciprocal rural community.

References

- [1] LUO XZ. The comparison and review of irrigation and water conservancy system before and after the reform of taxation expenses [J]. Reformation & Strategy, 2007(7): 93-95. (in Chinese).
- [2] ZHENG SY. Study on private provision about quasi-public goods [D].

(From page 21)

cy is not well publicized, the fishermen do not know the content of the policy, leading to disharmony between the fishermen in the fishing village caused by subsidies. The fishery diesel fuel subsidies must not be directly allotted to fishing vessels or shareholders in full amount. Based on the goal of stabilizing fishery production and increasing fisherman's income, it is necessary to use the diesel fuel subsidies for all the traditional fishermen in order to effectively improve the real income of the fishermen. At the same time, it is necessary to consider the operation system change in China's fishing areas and new fishing village construction needs, establish the minimum income guarantee system, pension and unemployment insurance and other social security systems covering fishermen, and provide certain pension and unemployment insur-

Shenyang: Liaoning University, 2007. (in Chinese).

- [3] YAN FX, XIANG SY. Effect of rural community governance mechanism on supply of agricultural mitigation public goods [J]. Journal of Huazhong Agricultural University (Social Sciences Edition), 2015 (3): 58-63. (in Chinese).
- [4] GUO RH. The research of farmers participating provision of rural community public goods in Guangdong Province based on social capital theory [D]. Guangzhou: South China University of Technology, 2012. (in Chinese).
- [5] LI BB, WANG SG. Rural public goods, peasant household participation and rural governance [J]. Economic Science, 2014 (6): 116-128. (in Chinese).
- [6] NAHAPIET J, GHOSHAL S. Social capital, intellectual capital, and the organizational advantage [J]. Academy of Management Review, 1998, 23 (2): 242-266.
- [7] DYER JH, NOBEOKA K. Creating and managing a high-performance knowledge-sharing network: The Toyota case [J]. Strategic Management Journal, 2000, 21 (3): 345-367.
- [8] ADLER PS, KWON SW. Social capital: Prospects for a new concept [J]. Academy of Management Review, 2002, 27 (1): 17-40.
- [9] PEI CH. Global economic governance, public goods and Chinese opening expansion [J]. Economic Research Journal, 2014 (3): 4-19. (in Chinese).
- [10] KANG SC, MORRIS SS, SNELL SA. Extending the human resource architecture: relational archetypes and value creation [J]. 2003.
- [11] BRUNI L, GILLI M, PELLIGRA V. Reciprocity: theory and facts [J]. International Review of Economics, 2008, 55 (1-2): 1-11.
- [12] WEI Q, JIANG SG. How is social cooperative order possible: Exploring mysteries [J]. Economic Research Journal, 2013 (11): 140-151. (in Chinese).

ance for retired fishermen and some unemployed fishermen to maintain social stability in fishing areas.

References

- [1] Research Group of Zhejiang Province Ocean and Fisheries Bureau. Study on the adjustment and reconstruction of Zhejiang marine capture fisheries[Z]. Zhejiang Ocean and Fishery, 2013(6): 7-9. (in Chinese).
- [2] ZHONG XJ, YU GP, ZHOU W, *et al.* Advices on application of diesel subsidies in fishery[J]. Fisheries Information & Strategy, 2012, 27(4): 272-276. (in Chinese).
- [3] LU CC. Discussion on improvement of fishery oil price subsidy policy[Z]. Zhejiang Ocean and Fishery, 2012(12): 6-7. (in Chinese).
- [4] PANG JZ, GAO WX. On the efficiency of fishery subsidies and reform measures in our country[J]. Modern Agricultural Science and Technology, 2013(8): 346-347. (in Chinese).