ANALYSIS ON DETERMINANTS OF PARTICIPATION RATES OF NEW RURAL COOPERATIVE MEDICAL SCHEME:

TALK ON BEIJING'S CHAOYANG DISTRICT NRCMS[1]

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Abstract: Through the village-level empirical study, this paper finds that on the national level, poverty is still the important factor affecting farmers to join in the new rural cooperative medical care. The government's investment in the NRCMS has a significant effect on people to join in NRCMS. Farmers' education -level and the average life span per year are significant factors. For the stability and continuity of the NRCMS, this paper proposes to input more money in the NRCMS, to strengthen rural basic education and adult vocational education, and to improve the peasant's income.
Key words: New Rural Cooperative Medical Scheme, Participation Rate, Factors Affecting, Empirical Analysis

1. INTRODUCTION

For a harmonious and stable development of China's urban and rural areas, the new central government decided that from the year 2004, China implement the new rural cooperative medical scheme, which requires the peasant voluntarily to participate in it. What will determine people to join in the New Rural Cooperative Medical Scheme? Different scholars have different views. Through the survey of Shouyang County of Shanxi Province, Lin (2006) found that the income of farmers has positive impact on probability of the Joint, while farmers' health status will not affect it significantly; Zhao Xiaoqiang, and Zhang Xuemei (2006) through the survey of X County of Guizhou Province, found upper income households and middle-income households have higher joints than the low-income families. Besides the health status and age also affect the rate of the Joint; Jin Chengwu (2007) through the survey of the south of the Jiangsu Province, found that income and health status are not the main factors to join in NRCMS.

In the current studies, most scholars through a local survey draw the appropriate conclusions in specific areas, which do not seek a mutual factor on the national score of cooperation. This paper tries to break through the limitations of previous research. Therefore, this paper may give two contributions: First, seek for common factors on the rate of the joint in nationwide; Second, try to take the village as the main microscopic parameters to analyze.

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2. DATA SOURCES AND VARIABLE SELECTION

This paper uses the Ministry of Agriculture rural fixed observation point survey data. Rural fixed-point observation of the village has a good representative sample. On the one hand, in eastern, central and western regions of the country, the distribution is reasonable; on the other hand, because their observations have continuity, individual sample has only relative stability. This paper uses 2004, 2005 and 2006 pooled data and collected 418 effective samples of administrative villages.

Table 1 Variable selection and type

Variable type	Attribute classification	Variable name	Abbreviation	Variable type
Dependent variable		joint rate	CL	Fixed-variable
Independent variable	1st. income property	1. whether recognized as poverty village by local government	PK	dump-variable
		2. families per people land area	RT	fixed-variable
		3. the village's per people net income in one year	RS	fixed-variable
		4. village collective funds input to NRCMS	HT	fixed-variable
	2nd. geographical property	1. topography	DS	dump-variable
		2. whether the village lies in urban suburbs	CJ	dump-variable
	3rd. humanistic property	1.primary and inferior educated workforce ratio	WB	fixed-variable
		2. the pure-farming household ratio	HB	fixed-variable
		3. the average age of the dead in the village in one year	SN	fixed-variable

In this paper, the dependent variable is the joint ratio, i.e. the ratio of the number of the people who participate in the NRCMS divides the number of the total agricultural population. In practical participation, farmers often take all families as a unit to joint, so, the ratio of the households joint is a good alternative. Therefore, the paper takes "the joint farmers in the total number of household ratio" of the joint to express rate. The independent variable is selected into three categories: the first category is the village income properties, including whether they are recognized by the local government as the poor villages, families per people land area, the village's per person net income and the village collective funds input to NRCMS. We are granted "whether it is the local government recognized poverty village" as dump variable, if the village is assigned as poverty village, it is 1, or it is 0. The second indicator is the village geographical attributes, including "lying" and "whether in urban suburbs" two variables. They are all dump variables. When the village in mountain the village is 1, or it is 0; when the village is not at the outskirts it is 1, or it is 0. The third category is the humanistic attributes, including "primary and inferior educated workforce ratio", "the pure-farming household ratio" and "the average life span in the village in one year". The type of the variable and the distribution are shown in Table 1. Based on the above understanding, this study attempted to test the following three assumptions:

Assumption 1: the poorer the village is, the fewer the land per person is, the fewer the net income per person is, village residents will be faced greater risks of diseases. Hence their willingness to participate in cooperative medical care will more strongly. While the village collective funds input more to NRCMS , the more the villagers to participate in NRCMS. Thus the higher rate of the Joint will be the result.

Assumption 2: If the village lies in mountains, not lies in the urban suburbs, it is more difficult for the residents of the village to see a doctor, thus there will be greater risk of getting disease, and the residents' willingness to participate in NRCMS is more strong. Then the higher rate of the Joint will be the result.

Assumption 3: The more the village's primary and inferior educated workforce ratio, the more the pure-farming household ratio in one year, and if the average life span in the village in one year is smaller, the villagers will be at greater risk of getting disease, their willingness to participate in NRCMS is more strong. Thus the higher rate of the Joint will be the result.

3. EMPIRICAL ANALYSIS

This paper establishes the right econometric test model in the form as follows:

$CL=\beta_0+\beta_1*DS+\beta_2*CJ+\beta_3*PK+\beta_4*LOG(RT)+\beta_5*LOG(RS)+\beta_6*LOG(HT)+\beta_7*LOG(WB)+\beta_8*LOG(HB)+\beta_9*LOG(SN)+u$

We take the data of the year 2004, 2005 and 2006 in the equation, using the software of Eviews5.1, and we could receive the result as follows:

Table 2 Estimated regression model results determinants about Joint rate

Variable	Coefficient estimate	t- Value
C	3.1969	0.0723
DS	3.3496	0.7300
CJ	10.903	2.6375***
PK	-26.6912	-3.6196***
LOG(RT)	2.0279	1.0509
LOG(RS)	1.5834	0.4201
LOG(HT)	2.3018	2.1098**
LOG(WB)	-8.2254	-2.8712***
LOG(HB)	-0.7676	-0.5513
LOG(SN)	19.0283	2.6999***
R^2	0.2913	

Note：***、** respectively means at 1% and 5% significant level significantly.

Through Table 2 we could make a concrete finishing regression equation:

CL = 3.20 + 3.35*DS + 10.90*CJ - 26.69*PK + 2.03*LOG(RT) + 1.58*LOG(RS) +

（0.07） （0.73） （2.64） （-3.62） （1.05） （0.42）

2.30*LOG(HT) - 8.23*LOG(WB) - 0.77*LOG(HB) + 19.03*LOG(SN)

（2.11） （-2.87） （-0.55） （2. 70）

Note: The figures in the brackets are T value.

The econometric test results show that R^2 is 0.30, as pool data, such values is acceptable . The more important is that there are five variables which are highly significant in all nine variables. Moreover there are four variables which are in 1% significant level. The mode simulation of the overall effect is very good.

3.1 Poverty and government investment are important parameters on the joint

Revenue in the selected attributes indicators: the value that whether the village is recognized as poor village is -3.62, in 1% of the significant level of highly significance, and the coefficient is negative. The variable reveals that poverty is still important restriction factor. In the current medical cooperation, only peasants submit their money first they could joint in the NRCMS (most of the countries are about 10 yuan per person), which undoubtedly set up a cooperative medical threshold. In this paper, the results of the test are the same with Lin (2006)'s conclusion. She even recommend cancelling the 10 yuan fee threshold. The elastic value of family land area per person is 2.66 (the value of elastic values in table 4, the same the follows), which the family land area per capita increased by 1% so that the joint can increase at the rate of 2.66%, but the variable is not statistically significant. The elastic value of the village's per person net income is 2.08 which means that the per person net income increased by 1% can makes the joint a 2.08% rate increase, but it is not statistically significant. And its value is positive, which means that the higher per person net income, the greater ability of the joint. This shows that the income of villagers has reached a higher level, and there is the more willing of the joint. This is consistent with the conclusion by Zhao Xiaoqiang & Zhang Xuemei (2006).The t value of the village's collective fund input is 2.11, and of which 5% of the significant level is significant. The coefficient of the variable is positive, which means that the strengthening of medical input could make a fast start and maintain the cooperative medical participation rate stability.

Table 3 Year 2006 Beijing Chaoyang District NRCMS per person funding

unit：RMB yuan

Finances body		Central government finance	Province finance	County finance	Town finance	Village's collective finance	Personal finance
Item	Total funding 208	----	10	28	20	70	80
	The proportion in the total funding	0%	4.81%	13.46%	9.62%	33.65%	38.46%

Note：1. Source：The author acts according to investigations and studies of the data compilation obtained.

2. "--" The expression has not financed.

In Beijing Chao-yang District, per farmer's income is higher. But through the investigation, the rates of the joint are very different with the different villages with different income: the village which has the highest per person income, per person income is 22,746 yuan, and the joint rate is 98.96%; the poorer village where per person income is 7,750 yuan, and the rate is 71.41%. The joint ratio of Chao-yang District in 2006 was 93.26%, which is higher than the national average (about 75%). The village's collective fund-inputting is 70 yuan, but the total funding per person is 50 yuan on nationwide. From this we can see that the village has have more investors and the higher rate of the joint.

3.2 Location of the village has a certain impact on the joint

In selected geographical attributes indicators: the value of the terrain is positive, which in line with the paper's expectation. The variable's t value is 0.73, not significant, which means that it did not have a significant impact on rates. Whether in urban or variable, its t value is 2.64, and of which there is 1% significant level, indicating that the variable has a significant impact. Maybe the reason is that the

residents of the outskirts of the town are more eager to get good medical insurance, so that medical cooperation with the central government is now coming out such a friendly policy, and the villagers are more willing to participate. The index of the test results is consistent with the paper's assumption.

Table 4 Elastic value about the joint ratio to partial independent variables

Dependent variable	Independent variable	Elastic value
CL	RT	2.66
	RS	2.08
	HT	3.02
	WB	-10.80
	HB	-1.01

3.3 Villagers quality affected Participation rate

The selected indicators in the human attribute: the t value of the primary and inferior educated workforce ratio is -2.87, of which 1% of the significant level is highly significant, and the variable's coefficient is negative. The elastic value of the variable is -10.80, which means that in the lower educational level 1% the reduction rate of participation is 10.80%. It again shows that the lower the educational level, the inferiorer the village's ability to access medical protection. The test result of the variable is consistent with the conclusion by Yue Zhang (2005). The t value of the pure-farming household ratio is not significant. Its elastic value is -1.01, and the proportion of pure-farming household increased by 1% the village joint rate will decrease 1.01%. This variable also shows that the higher the proportion of pure-farming villagers, the more they lag behind the development, which limited the capacity of the joint, Hence the lower rate. The t value of the average life span in the village in one year is 2. 70, of which 1% significant level is highly significant, and the coefficient is positive, which means the longer the average life span the higher the joint rate. The reason is that the higher the average life span is a reflection of the better economic and social conditions. So if the health conditions are better, more villagers can strengthen their ability to protect health, then a higher rate of the joint will be the result.

4. CONCLUSIONS AND RECOMMENDATIONS

4.1 Further strengthen the funds in cooperative medical

From the China's rural cooperative medical history of the rise and fall in the 60s-70 s of last century, non-farmer's funds input is essential for the development of medical cooperation. Since the late 1980s, China's government has tried to recover the rural cooperative medical system but failed three times, and the main reason is the lack of external financial support. Therefore, in a sense, whether the new rural cooperative medical succeeds or not, one of the key factors also depends on non-farmer's funding input and the size of the amount of investment continuity. From the actual investigations, to achieve good results in the rural areas all of the cooperative medical system has to guarantee a substantial amount of medical resources.

4.2 Strengthen rural basic education and adult vocational education

In this paper, the empirical study again shows that the level of education, to a certain extent, affect the participation of farmers. The high educational level of farmers not only help them to have a better

understanding of the spirit of cooperative medical care, but also help to evaluate their own medical insurance and investment relations between the receipts. In recent years, the state has invested a lot of funds to rural basic education and adult vocational skills training and achieved certain results. Relative research[3] indicates that in years 2005 and 2006, there are more professional and technical labors than the years before, especially the lower-income and the general-income have seen more substantial increase. Education is the very effective way to enhance the human capital. In the district of Zhujiang delta, the peasant-worker's wages were only little increased in the past decade, but there are many well-paid jobs which find no competent workforces, which means it is of importance and urgency to strengthen the rural areas' adult basic education and vocational education.

4.3 Increase farmers income

This paper's empirical research shows that "poverty" is the barrier for farmers to joint NRCMS, and when their income reaches a certain level, the participation rate will gradually increase. The lower-income families need more help from the NRCMS, but they are unable to enjoy the benefits from the current designed rule. This is consistent with the conclusion of the evaluation team[4] of new type rural cooperative medical care and the experimental work: transfer payment to rural financial is relatively more useful in the upper-income farmers. Apart from the need to strengthen medical financial aid, the way to solve this problem is to have a more effective method which could further broaden the channels to increase farmers' income.

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