Rural Public Service and Anti-Poverty in Stretches of Poverty-Stricken Areas

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Abstract

Poverty is such an intractable problem in developing countries that almost all governments are committed to tackling poverty through anti-poverty strategies. These strategies, channels and methods of fighting against poverty vary from country to country, then how to reasonably make and effectively implement anti-poverty strategies? The first step lies in the awareness of causes for poverty and constraints on anti-poverty in different areas and different families. Previous experience shows that poverty is directly connected with age of population, health status and regional economic development level. It is not uncommon in rural areas that farmers "fall back into poverty because of aging or sickness". Meanwhile, the lagging education, incomplete medical care system and pension security system make it even harder for rural areas to get rid of poverty and get rich. Therefore, the construction of public service includes medical care system, pension security system and education and training service system for people in rural poverty-stricken areas becomes a significant issue and an extremely urgent concern. This paper, by adopting the methods of quantitative and qualitative in working with data and documents from household investigation in stretches of poverty-stricken rural areas in Hebei, China, analyzes the demand for public service in poverty-stricken rural areas and puts forward some constructive suggestions as resolutions to the discovered problems in the process of analyses.

Keywords

Public service; stretches of poverty-stricken areas; anti-poverty.

1. Introduction

A series of anti-poverty policies have been taken and achieved significant effects since the foundation of PRC, and the drastic reduction of the number of poor people in rural China is a piece of convincing evidence. According to Statistical Bulletin of National Economics and Social Development, the annual net income per capita was 2300 yuan in 2012 based on poverty line in rural areas and rural poverty population reduced to 98.99 million by the end of the year 2012, a reduction of 23.39 million over the previous year. By the end of 2012, 53.409 million people had been included to the system of substance allowances for rural residents, an increase of 274 000 people over the previous year; 5.459 million been granted Five-Guarantees (guarantee for food, clothing, housing, medical care and funeral) substance allowance in rural China, a reduction of 61000 people; 19.084 million been medically aided in rural areas throughout the year and 39.151 million been financially assisted into New Rural Cooperative Medical System. These statistics suggest that in spite of the accomplishments achieved in anti-poverty, the situation of poverty does not look good and the task still remains arduous and challenging.

With poverty relief and development in China stepping into a new stage, issues like improving basic public service and promoting its equalization have been put on the agenda. It has been explicitly pointed out in National Program for Rural Poverty Alleviation (2011-2020) that the objects of poverty relief should have no worries for food or clothing; their basic rights for education, medical care and housing be secured; net income per capita in poverty-stricken rural

areas embrace an increase even higher than that of national average; indicators in primary fields of basic public service approach national average and the developmental gap between rural areas and national average be narrowed down by the end of 2020. For the moment, however, the gap between rural and urban China is relatively wide in terms of development and income-consumption level. Impoverished population is mainly in remote and backward areas. Public service construction and the access to the service in urban and rural areas also differ a lot. It is well justified to say that the inequality in distribution of basic public service in rural and urban areas severely jeopardize the chance for poor people in rural areas to get rid of poverty and get rich and also make the current anti-poverty task more challenging.

Statistics in Table 1 show that the proportion of consumer spending on cash by rural residents in China is much lower than that by urban residents in the two basic public service programs of transportation and communication as well as cultural education and entertainment, yet the proportion of consumer spending on cash in medical care is 2.84 percentage higher than that of urban residents. This, first of all, suggests the gap between urban and rural residents in their access to basic public service which will severely constrain the development of rural social economy and improvement of life quality of rural residents. Worse still, the large proportion of spending on cash in medical care by rural residents implies that the attack of diseases constitutes a primary cause for poverty in rural areas and that the phenomenon of "falling into or back into poverty because of illnesses" is very common. Besides, the absence of basic public service is also an rooted cause for the existence, accumulation and transmission of poverty in rural areas.

Table 1. Annual Per Capita Cash Consumption in Basic Public Service Program of Urban and Rural Residents in China

	Urban		Rural	
	Amount(yuan)	Percentage	Amount(yuan)	Percentage
Total Expenses on Consumption	15160.89	100	4733.35	100
Transport and Communications	2149.69	14.18	547.03	11.56
Education, Culture and Recreation	1851.74	12.21	396.36	8.37
Health Care and Medical Services	968.98	6.39	436.75	9.23
The Proportion of Consumption of Basic Public Services	4970.41	32.78	1380.14	29.16

The previous researches have proved that anti-poverty is influenced by various factors such as age and education level of population as well as regional economic development. By applying Logistic Model, Wei Zhong and B. Gustafson analyze poverty dynamics from the late 1980s to the middle 1990s in China ass well as relevant influential factors based on data from the large sample investigation of rural households done by Academy of Social Sciences in the year 1988 and 1995. Their research reveals that the crucial factors in anti-poverty in rural China are the residential locations of households and the geographical features as well as the number of nonfarm payrolls and minors. The rising of poverty rate among minorities owes more to the fact that they live in underdeveloped areas rather than to their identities as minorities. In the late 1980s, poverty rate exhibited an obvious relation with education. When it came to 1990s, it was not just education, but the length of receiving education that had a strong correlation with poverty rate, which, specifically put, formed the pattern of the longer period of education, the easier task of poverty relief. Qiu Ximing and Li Shi analyze the determinants of anti-poverty in rural China in 2000 with Probit Model. Their findings are: the growing age of head of households can help ease poverty; apart from college degree, higher level of degree can also help alleviate poverty; the proportion of people working as migrants to break away from poverty is 2%-3% higher than those staying, but not as high as expected; nonfarm activities can

also help rural residents to get rid of poverty, yet still less effective than imagined; the amount of arable land has nothing to do with the increase or reduction of households income; the percentage of households depending on village-run industries to become non-poverty households is 5% higher than that of households in villages without industries; the percentage of households in mountainous areas becoming non-poverty households is 2% lower than those in plain and hilly areas; national poverty relief loans and poverty relief loans of World Bank have little effect on poverty. Based on data from field investigation in Fujian with Logistic Model, Xie Dongmei discovered that factors like household types, participation in nonfarm activities, attendance of training for professional skills and the amount of orchard possessed per capita have a significant influence on poverty of households while most community featured variables have little influence on poverty. Besides, she also found that micro elements in making a living are crucial elements influencing poverty which does not come with significant regional features.

With data source from Fujian, Xie Dongmei's investigation only covers rural poverty status in developed provinces in east coastal China. This paper, however, focuses on poverty-stricken rural areas in Hebei Province as research subject, collects data from household investigation in poverty-stricken rural areas in hebei, China and highlights the analysis of the influence and effects of public service provided in rural areas on anti-poverty of households by adopting both qualitative and quantitative methods. Finally, this paper puts forward countermeasures of equalization of public services including improved medical care system, pension security system as well as education and training system to tackle corresponding problems.

2. Hypothesis and Research Objectives

Rural public service is social service with certain nonexcludability and noncompetitive provided to meet common needs of agricultural and rural development as well as farmers' living and production; it is a kind of public product in rural areas in the form of agricultural information, agricultural technology and labor service. For the moment, the public service at the top concern of rural residents includes medical care, compulsory education, social security, employment of rural surplus labor, public infrastructure construction and public security, etc. The tackling of poverty in rural areas requires the governments to provide public products and public service to rural areas, including the construction of rural and agricultural infrastructure as well as public medical facilities, so that rural areas can get rid of poverty. Public Product Theory defines that public products are with nonexcludability and noncompetitive, which determines the inefficiency and blankness of market in providing public products. The public products on which anti-poverty in rural areas rely include infrastructure, education and medical care, which market has no motivation to be involved in, so they are normally provided by governments.

Meanwhile, poverty-stricken rural areas have their own particularity. Compared with developed rural areas, poverty-stricken rural areas usually fail to resolve problems in the shortage of public service because of the tough natural conditions, low-level social and economic development as well as poverty in them. Even when basic public service is provided to them by governments, they are still vulnerable to the fate of falling to poverty because of disease and lack of education. For example, despite the nine-year compulsory education program provided by government, many poor families still found themselves struggling to cover other expenses along with the education. For a poor family, to provide for a child through compulsory education is a high price to pay since it means not only to have one less labor force, but also to stick to a tight budget for food and clothing for the whole family, and even to be indebted to many others. All these problems will not disappear even with the implementation of compulsory education. Another example is the new rural cooperative medical care system implemented in rural areas. It is supposed to help rural residents ease the situation of falling into or back into poverty because of diseases, yet it is not the case at all. Ignore the low level of

security and complicated procedures of being insured and applying for reimbursement, just the outpatient expenditure in most of the costs of the insured would be enough to make them hesitated to turn to such medical care system for help since outpatient expenditure cannot be refunded either in residential locations or original registered place. As to in-patient expenditure, if the amount is not big enough, it is also not worth applying for reimbursement since the costs for transportation would be too high to be covered by the refunded money. Besides, during rural residents' staying in hospital, other expenditures to cover accommodation would be too much for a poor family. That's why many rural residents refuse to see doctors when they are ill.

Based on the above analysis, the following hypothesis is put forward. That is, poor families in stretches of poverty-stricken rural areas have stronger demand for basic public service than affluent families do, or to put it another way, basic public service is in more urgent need for poor families in rural areas, which is why it is so difficult for them to get rid of poverty and get rich. Therefore, the anti-poverty task in poverty-stricken rural areas should aim straightly at the point. To testify this hypothesis, this paper conducts field investigation to the actual needs for public service like medical care and education of people in poverty-stricken areas and also analyzes the influence of public service on anti-poverty before drawing conclusions to discovered problems.

3. Data and Methods

The data in the present study is micro data gained from Sample Investigation of Population in Poverty-Stricken Areas in Hebei Province conducted together by Population and Family Planning Commission in Hebei Province and Faculty of Economics in Hebei University. It is a large-scale sample investigation in 67 poverty-stricken counties in stretches of poverty-stricken rural areas along Yan Mountain, Taihang Mountains and Heilonggang Basin. Random sampling based on villages was adopted in the investigation after the 67 poverty-stricken counties had been differentiated and divided into several groups. 226 villages were chosen and all the families in these villages were under micro investigation. 56682 copies of questionnaires were handed out and 48569 collected as valid after removing the ones with registering errors and the ones finished by irrelevant people. Among the data collected, 99.57% was valid. Detailed information is available in Table 2.

Table 2. Sample Description

	Sample Size	Percentage
Family Households	48569	100.0
Elderly Families	18552	38.2
Pure Elderly Families	6867	14.1
Cross-Generation Families	685	1.4
Families with Left Women	3806	7.8
Average Schooling Years of Family Members		
0 year	1381	2.8
0-6 years	17692	36.4
6-9 years	24769	51.0
9-12 years	4495	9.3
12-15 years	215	0.4
Largest Expenditure of the Family		
Daily Life	32087	66.1
Smoking and Drinking	150	0.3
Children's Education	4731	9.7
Medical Expenses	5535	11.4
Interpersonal Interaction	859	1.8
Means of Production	3536	7.3
Other	972	2.0
Missing	699	1.4

Firstly, the present study adopts multidimensional measurement of AHP (Analytic Hierarchy Process). Based on micro data of families in large sample obtained in sample investigation, this paper works out the poverty-affluence coefficient of families after through several processes including expert decision, indicators evaluation and comprehensive measurement from the four dimensions like family characteristics, status of income and expenditure, management activities & service access as well as housing conditions (concrete models and evaluation process can be found in another paper). In this way, families in the stretches of poverty-stricken areas can be divided into five categories: very poor, poor, average, better off and affluent. And Ordinal Logistic Regression Method is employed to conduct research into public service level in poverty-stricken rural areas.

The Ordinal Logistic Regression Model is expressed as follows, among which, μ_j is threshold value and α is intercept.

$$\ln\left[\frac{P(y \le j \mid x)}{1 - P(y \le j \mid x)}\right] = \mu_j - \left(\alpha + \sum_{k=1}^{k} \beta_k x_k\right)$$

4. Public Service in Stretches of Poverty-Stricken Rural Areas in Hebei Province

Dependent variables are ordinal variables, including five ranks: destitute, poor, average, better off and affluent, so ordinal regression method is adopted to analyze what problems are facing poor families and what is their need for public service compared with affluent families. To get a better understanding of problems facing poor families and the situation of disease, aging problems and education, this paper conducts research into households in stretches of poverty-stricken rural areas in Hebei Province. Take poverty type as a dependent variable. Since dependent variables are ordinal variables, including five ranks: destitute, poor, average, better off and affluent, so ordinal regression method is adopted. The regression results are shown in Table 3.

Since dependent variables are in normal distribution, we have chosen Probit as linking function. Ordinal regression is adopted on condition that the model can pass the parallel test. Among the above models, only by taking into account the existence of migrant workers and poverty status of families (namely the third and fourth models) can they pass the parallel test. The three statistic values of pseudo R square of Model 3 and Model 4 are around 1, suggesting a satisfying imitative effect of the models. Therefore, we base our analysis of causes for poverty on the results of Model 3 and Model 4, and take Models 1 and 2 as references. Regression results in Model 1 show that under the circumstance that only rural families themselves in poverty-stricken areas are concerned, the existence of family members with diseases can be one of the primary factors leading to poverty in the family and average length of education has a negative correlation with poverty incidence, namely, the higher education level of the family members, the lower poverty incidence there will be. Besides, their biggest concern and largest expense also have significant influence on poverty. In Model 2, variables of public service are included, yet the introduction of variables of new rural cooperative medical system (NCMS) and new-pattern rural social old-age insurance does not make much of a difference to the model. In Model 3, new variables like assistance provided by governments to migrant workers and poverty relief programs in villages are included. As a result, the imitative effect of the models is drastically improved; all other factors demonstrate a diminishing effect on poverty, with no big differences between Model 3 and Model 4.

Table 3. Ordinal Regression Analysis of Influential Factors for Poverty of Families in Stretches of Poverty-Stricken Areas

Independent Variables	Model1	Model2	Model3	Model4
Poverty Level(Affluent)				
Very Poor	-1.323*	-1.364*	-1.461*	-1.441*
Poor	-0.129*	-0.160*	2.095*	2.116*
Average	0.956*	0.928*	5.264*	5.286*
Better off	2.504*	2.498*	7.074*	7.096*
Family Members Healthy(Ill)	0.264*	0.273*	0.264*	0.263*
Average Schooling Years of Family Members	0.107*	0.107*	0.065*	0.065*
Biggest Concern of the Family (None)				
Family Member's Health	-0.824*	-0.837*	-0.736*	-0.736*
The Cost of Children's Education	-0.449*	-0.470*	-0.439*	-0.440*
The Pension Problems	-1.511*	-1.536*	-1.228*	-1.232*
The Low Income	-0.933*	-0.940*	-0.838*	-0.839*
Other	-0.455*	-0.421*	-0.457*	-0.461*
The Largest Expense (Cost on Dalily Life)				
Smoking and Drinking	0.055	0.038	0.128	0.123
Children's Education	0.135*	0.165*	0.137*	0.134*
Medical Expenses	-0.539*	-0.527*	-0.441*	-0.441*
Interpersonal Interaction	0.191*	0.178*	0.302*	0.304*
Means of Production	0.146*	0.172*	0.092*	0.091*
Other	0.349*	0.379*	0.026	-0.021
Not Attend the New Rural Social Endowment Insurance(Attend)		-0.400*	-0.406*	-0.402*
Not Reimbursed by NCMS(Reimbursed)		0.013	0.033**	0.035**
Help provided to migrant workforce by governments				
Without Trained(Trained)			-0.005	-0.001
Without Help from Governments for Employment(With Help)			0.065*	0.062*
Family without Migrant(With Migrant)			-0.563*	-0.566*
Non-poor Family (Poor Family)			5.156*	5.154*
Anti-Poverty Programmes in Village				
Not Build Roads(Builded)				-0.049*
Not Build Schools(Builded)				-0.003
Not Build Health Center(Builded)				0.058*
Nagelkerke R2	0.233	0.246	0.938	0.962

Notes: dependent variable is poverty type while reference variable refers to affluent families; inside the brackets are all reference variables, * represents significance on the level of 1%, ** represents significance on the level of 5%.

Regression Results in Model 4 reveal problems of poor families in terms of medical care, education and pension security compared with affluent families. In terms of medical care, the existence of family members with prolonged illness has a significant influence on poverty-affluence coefficient of a family, so obviously it makes poverty rate of the family much higher. In terms of the biggest concern, in comparison with affluent families, people in poor families are more concerned about health status of family members, which implies the heavy burden posed on the whole family by an ill member. This can also be demonstrated in the expenditure of the family. Compared with families with daily living costs as the largest expense, families with medical fees as the dominant expense certainly suffer more from poverty. The existence of an ill member not only means high medical fees, but also the loss of a labor force and a source of income temporarily or permanently. In the mean time, other family members have to shoulder even heavier burdens in order to pay treatment fees for the ill. All these analyses suggest that compared with affluent families, poor families are in more need of public service in medical care to alleviate their current situation of poverty.

The issue of education can also be spotted from the regression results. The average length of education received by family members also has a great impact on the poverty-affluence coefficient of the family. To put it specifically, the more and higher education family members received, the more affluent the family will be; and vice versa. It is easy to imagine: better educated family members naturally anticipate greater possibilities of getting high wages, and they can bring substantial income to the family so as to improve the economic status of the family; in turn, affluent families have the capacity of investing more in the education of the next generation and things will just get better and better, hence a virtuous circle. This exact point has also been proved by the largest expenditure of families. Again compared with families whose largest expenditure is on daily life expenses, families whose largest expense is on the education of the next generation enjoy much lower poverty rate in that poor families can hardly meet the basic needs for food and clothing of family members, let alone investing their money in the education of their children. Yet seen from a different perspective, problems still exist: without good education, children in poor families can only work on the farm or work outside doing physical work with little added value of labor in the future, then the family will find it extremely hard to get rid of poverty and get rich. Despite the implementation of nine-year compulsory education, it is far from enough for poor families. As mentioned earlier in this paper, poor families also need specific public service. And poverty resulted in the lack of education can only be alleviated through better access to public service.

The problems in pension security should also not be neglected. From the participation in new rural social pension insurance, non-insured families are more vulnerable to poverty than the insured families, suggesting that the public policy of new rural social pension insurance makes for the improvement of rural residents' living standards to some extent as well as for the task of anti-poverty. 80% of the population in China live in rural areas and they have great potential in living security needs. The low-level social security and great uncertainty in pension security, medical care and education for the future drastically damage their consuming capabilities. The implementation of new rural social pension insurance, which has in fact improved rural residents' income levels, can doubtlessly help reduce their anxiety for future pension security, increase their recent consumption and further promote the continuous economic development in China. Poor families are more worried that they would have no one to rely on for their old age, especially families of the elderly who will lose their working abilities and worse still have no children around to take care of them after getting old. All these demonstrate urgent need of poor families for public service in the aspect of pension security.

Besides, trainings provided to outside migrant workers by governments have little influence on poverty incidence of the families, and families with help from governments for employment of outside migrant workers even have higher poverty rates. This suggests that members in affluent families do not need to rely on governments for employment outside since they can find a decent job by themselves with excellent qualities in them while members of poor families who fail to find employment by themselves for lack of competence and qualities can only turn to governments for help. Therefore, government assistance, working outside as migrants and poverty are endogenous variables.

5. Conclusions

The above regression analyses reveal that poor families have more urgent need for public service in medical care, pension security and education compared with relatively affluent families. This can be accounted for by the facts that poor people in rural areas are unable to save themselves for their poor qualities and that they have no capacity of seeking for alternatives to fix problems in the absence of public service, like affluent families can do. Therefore, they can only pin their hopes on governments to intensify the efforts in providing public service in rural areas and to make anti-poverty strategies exclusively for special families

from the perspective of public service. The role of public service in the task of anti-poverty in rural areas becomes self-evident. Moreover, with the deepening of aging of population in China and the transformation of domestic structures in rural areas, problems in families of the elderly in rural areas keep emerging and the current general public service in rural areas can hardly meet the needs of these special families. Therefore, we should work out a set of anti-poverty policies exclusively for rural families, especially poor families and families of the elderly in stretches of poverty-stricken areas from the perspective of public service so as to alleviate their poverty. For example, special pension security system should be established to meet the needs of families with only the elderly; more systematic and in-depth medical care system and compulsory educational system be provided to families "falling into or back into poverty because of attack of diseases or for lack of education". Only in this way can problems of poverty be better resolved and these families can sooner get rid of poverty and get rich.

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