

THE TARGETING EFFICIENCY AND
POVERTY REDUCTION EFFECT OF DIBAO
- BASED ON A SURVEY IN BEIJING, HENAN AND SHANXI

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by
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ABSTRACT

Based on the field survey conducted in Beijing, Henan and Shanxi, this paper analyzes the targeting efficiency, poverty reduction effect and the factors that affect the possibility of the poor households to obtain subsistence allowances. This paper finds that there is a large aiming deviation, the leakage rate and the wrong rate are high, and the low targeting efficiency restricts the poverty reduction effect. Many poor households still do not get out of poverty after accepting the subsistence allowances. The results of the empirical analysis show that the number of households with labor income, the gender of the head of household, the area of housing construction, the annual income per capita, and the expenditure on personal expenses will have significant impact on whether the poor households can obtain subsistence allowances. Based on the above conclusions, this paper proposes to increase the central financial transfer payments, promote the agency survey, improve the regulatory mechanism and other policy recommendations.

Key Words: the minimum subsistence guarantee system of China targeting efficiency
poverty reduction

BIOGRAPHICAL SKETCH

Naiqi Yang is a master's student at Cornell Dyson School, majoring in Applied Economics and Management with a concentration of Behavioral Finance. She obtained a bachelor's degree from Renmin university of China. During her undergraduate course, she became interested in poverty policy and participated in the field survey of the minimum subsistence guarantee system of China in Henan province. She continued to study this project, hoping to have a deeper understanding of the system and put forward reasonable suggestions to it.

Yilian Ge is currently a master's student at Cornell University majoring in Applied Economics and Management with a concentration in Finance. She received her bachelor's degree from University of Victoria. She had interests in behavior finance during undergrad study and focuses in studying agricultural finance and economics at present. With an interest in studying China's social systems, she actively took part in this research, hoping to deepen understanding of the Dibao system and making suggestions on how to optimize it.

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Chapter 1

Introduction

The minimum subsistence guarantee system is a significant social assistance policy of China, and it is also the basic content of the social security system. It refers to a type of social security system. It means that the country gives certain cash subsidies to the population whose family income per capita is lower than the minimum living standard announced by the local government, so as to guarantee the family members' need for basic living. The minimum living guarantee line is also the poverty line. A corresponding subsidy will be given to the population whose per capita family income is below the poverty line to ensure their basic living need. China's "Regulations on Minimum Living Guarantee System for Urban Residents" approved by the State Council on October 1, 1999, is an important symbol of the development of China's social assistance work.

As one of China's most important government unconditional transfer payment system for urban and rural poor residents at present, the implementation efficiency of the minimum subsistence guarantee system has received extensive attention. Scholars generally believe that the ability to accurately identify and target the poor is the key factor in the effective implementation of the minimum subsistence guarantee system. Therefore, this paper attempts to investigate the targeting efficiency and the effect of poverty reduction of China's current minimum subsistence guarantee system through questionnaire surveys in three sample areas in Beijing, Henan, and Shanxi, and carries out empirical analysis to explore the factors that affect the possibility of the poor households to obtain subsistence allowances. Finally, the paper puts forward suggestions for the minimum subsistence guarantee system.

Chapter 2

Literature review

2.1 Related Concept

To study the aiming efficiency of the minimum subsistence guarantee system, it is necessary to clarify the targeting object of the minimum living security system.

The target of urban Dibao system: according to the “Regulations on Minimum Living Guarantee System for Urban Residents” of the State Council: “Urban residents are entitled to obtain basic living material from local government if the per capita income of family members living together is lower than the minimum living standard for local urban residents.”¹

The target of rural Dibao system: according to the “Notice concerning the establishment of the minimum subsistence guarantee system in rural areas nationwide” of the State Council, the object of rural Dibao system is: “Rural residents with per capita net income below the local minimum living standard, who are mainly rural residents with difficult life for years because of sickness, old and frailty, incapacity to work, and deterioration of the ecological environment.”²

2.2 Literature review

Ling Wenhao and Liang Jingang (2009) believe that due to the uneconomical accounting methods of household net income, imperfect targeting procedures, and imperfect supervision mechanisms, China's rural minimum subsistence guarantee system has large targeting errors and a high wrong rate, which reduced the effectiveness of the Dibao system. Li Chungen (2014) proposed that the Dibao system has several disadvantages: complex procedure, non-standard operations and difficulty to calculate family income. As a result, the leakage rate and the wrong rate of the minimum guarantee system are high.

One of the most crucial reasons for the low targeting efficiency is the inherent contradiction between the scarcity of the minimum guarantee funds and the large number of the eligible

¹ The State Council *Regulations on Minimum Living Guarantee System for Urban Residents*

² The State Council *Notice concerning the establishment of the minimum subsistence guarantee system in rural areas nationwide*

households. After conducting field research on the Dibao system in Shaxian County, Fujian Province, Li Xiaoyun et al (2006), pointed out that because such contradictions are difficult to resolve and the standard of the minimum subsistence guarantee system is not clear, some counties have adopted alternative measures which led to serious leakage of Dibao, affecting the implementation effect of the policy. He Dagui (2008) analyzed the situation of Dibao in Yanqing County and concluded that the rural minimum guarantee funds mainly come from local and sub-provincial fiscal expenditures. In poor areas, the local economy is lagging behind but the number of poor people is relatively large. The contradiction is particularly prominent and cannot be fundamentally resolved within a short time. Huang Ruiqin (2013) focused on the efficiency of Dibao targeting efficiency in poverty-stricken areas in Hunan and pointed out that many poverty-stricken areas in the central and western regions have serious shortage of local minimum guarantees funds, and coverage of Dibao is relatively small. This situation has made the number of poor households able to receive subsistence allowances even more limited, which results in a high leakage rate. Many economically disadvantaged families were supposed to enjoy subsidy but haven't been covered due to restrictions on subsistence allowances and quotas.

In terms of influencing factors on whether poor households can receive subsistence allowances from the Dibao system, many scholars believe that income can only reflect one aspect of poverty and cannot reflect the entire picture of poverty. The integration of different dimensions is needed to accurately identify poor households. Zhang Weibin (2010) adopts the data of two villages in a county in Chongqing to compare and analyze two types of Dibao households: registered Dibao households and low-income Dibao households. He found that transfer income from government, the level of education of householder, and the presence of disabled persons in the family can be used as key indicators for identifying the minimum living standards. However, the age of the head of the household, the number of family members, and family consumption are insufficient to distinguish the Dibao groups. Li Yanjun (2013) analyzed the data of 690 Dibao families in Ningxia Province and concluded that in the context of the lack of a strict and effective wealth review mechanism in China, the proxy wealth inspection system can be used to identify low-income families. This proxy system can be built up using the core indicators of household income and expenditure, which consist household head features, family characteristics, housing characteristics, and characteristics of durable consumer goods.

Han Huawei (2013) found through field investigation that the determination of Dibao

qualification is not based solely on the comparison of household income per capita with the minimum guarantee line. In addition to the household income as a key indicator, the household population structure, the amount of human capital owned, and the amount of household property owned have an impact on whether rural residents can obtain minimum subsistence allowances. Therefore, when measuring the targeting efficiency of low-income insurance, using only household per capita income as a measurement index while ignoring other dimensions is likely to result in poverty measurement errors.

Liu Fengqin and Xu Yuebin (2016) paid attention to the issue of community targeting. Through survey data from five provinces in the East, Central and West, they focused on the analysis of which group is more likely to enjoy the subsidy. When identifying poor household in the actual operation process, factors such as the burden of expenditure, the status of human capital and whether they are exposed to negative life shocks are considered comprehensively. Therefore, if only the income is used as a basis for identifying the poor households, the targeting efficiency of the minimum guarantee system would be reduced.

Chapter 3

Survey Data

3.1 Overview of Research and Methods

The survey was based on a questionnaire. The questionnaire is divided into five parts: the first part is about the basic information such as types of hukou of the surveyed subjects, the number of households in the family, the number of households with labor income, and the head of household's information; the second part is about the economic status of the family such as housing status and property ownership; the third part deals with the investigation of family income, expenditures and liabilities; the fourth part examines health behaviors and expenditures; and the fifth part deals with the condition of subsistence allowances.

The data used in this paper comes from field surveys of the implementation of the minimum living guarantee system in the Beijing, Henan, and Shanxi Provinces in 2015 and 2016 by the National Economic Investigation Delegation of Renmin University of China. A total of 630 questionnaires were retrieved, including 623 valid questionnaires. The effective rate of questionnaire recovery was 98%. The interviewees included minimum living guarantee households and other local residents. The interviewees had a correct understanding of the questionnaire and had sufficient time to answer the questionnaire. The questionnaire results are authentic and reliable.

3.2 Data description and analysis

First, survey data was summarized and descriptive statistics are shown as follows:

3.2.1 Descriptive Statistics of the Sample

In the questionnaire used in this paper, the number of samples in a county in Henan

Province is 247, accounting for 39.65% of the total. The number of samples in a district of Beijing is 302, accounting for 48.48% of the total. The number of samples in a county in Shanxi is 74, accounting for the total 11.88%.

Table 1 Descriptive statistics of sample families

	Henan		Beijing		Shanxi	
	Sample size	percentage	Sample size	percentage	Sample size	percentage
Non-agricultural household	139	56.28%	301	99.67%	3	4.05%
Agricultural household	108	43.72%	1	0.33%	71	95.95%
Dibao households	182	73.68%	260	86.09%	10	13.51%
Non-Dibao households	65	26.32%	42	13.91%	64	86.49%

Table 1 shows the number of households in the three regions and their proportions. For the number of households in urban and rural households, there were many households in non-agricultural households in the sample of a county in Henan Province, accounting for 56.28%. In a sample of a district in Beijing, because the survey selected a district within the urban area, the surveyed households were mainly non-agricultural households, and there was only one household in the agricultural account, but in the sample of a county in Shanxi. Due to the fact that selected survey location was in rural areas, therefore households were mainly agricultural households and there were only 3 non-agricultural households. For the number of subsistence allowances households, there were more subsistence allowances households in the sample of Henan and Beijing, while there were more subsistence allowances households in Shanxi.

Table 2 Descriptive statistics of major variables

	Urban		Rural	
	Average	Standard deviation	Average	Standard deviation
The number of people in the household register	2.93	1.61	3.34	1.6
The number of people with labor income	0.71	0.89	1.41	1.03
Head of household-(male=1 female=0)	0.64	0.48	0.77	0.42
Head of household-age	59.17	13.66	58.36	12.45
Head of household-education(year)	3.05	1.18	2.16	0.95
Work hours of the head of household in the past month	29.8	71.89	80.01	113.98
Housing area per capita (m^2)	20.07	23.13	40.42	31.7
Annual income per capita (rmb/year)	6183.79	11568.83	5198.35	6704.8
Personal out-of-pocket medical expenses (rmb/year)	7471.97	16191.8	5010.24	11037.01

Table 2 shows that the number of registered rural households in the sample, the number of people with labor income, the number of hours worked by the head of the household in the past month, and the per capita housing area were all higher than those in urban households. And the proportion of the head of household of rural households being male was higher than urban households, while urban households had the characteristics of having older heads of household, higher level of education of the head of the household, higher per capita annual income, and higher expenditure on personal medical expenses.

3.2.2 Sample Family Basic Information Summary

Table 3 The number of people in the household register

		Frequency	Percentage	Effective percentage	Cumulative percentage
Effective	1	105	16.9	16.9	16.9
	2	155	24.9	25	41.9
	3	156	25	25.1	67
	4	99	15.9	15.9	82.9
	5	51	8.2	8.2	91.1
	6	38	6.1	6.1	97.3
	7	12	1.9	1.9	99.2
	8	3	0.5	0.5	99.7
	10	1	0.2	0.2	99.8
	11	1	0.2	0.2	100
	Total	621	99.7	100	
Missing	999	2	0.3		
Total		623	100		

From Table 3, in the sample, 16.9% of the population lived alone, 50.1% of households had a population of 2-3 people, 24.1% household had a population size of 4-5 people.

Table 4 Number of households with labor income

		Frequency	Percentage	Effective percentage	Cumulative percentage
Effective	0	267	42.9	43.9	43.9
	1	170	27.3	28	71.9
	2	132	21.2	21.7	93.6
	3	32	5.1	5.3	98.8
	4	6	1	1	99.8
	5	1	0.2	0.2	100
	Total	608	97.6	100	
Missing	999	15	2.4		
Total		623	100		

From Table 4, the households without laborer in the sample accounted for the largest proportion (43.9%). There was only 28% of the households that only had one laborer in the family. There were 21.7% of the households with 2 laborers. Only 6.4% of households had more than 3 laborers.

Table 5 Statistical description of the head of household

Statistics	classification	Frequency	Effective percentage
Gender	male	420	67.9
	female	199	32.1
Age	18-44	70	11.3
	45-60	278	44.9
	>60	271	43.8
Education Level	Never went to school	105	17.1
	Primary school	130	21.1
	Secondary school	211	34.3

	High school	140	22.8
	College	16	2.6
Hours worked in the past month	Non-full-time job	404	64.8
	Full-time job	47	7.5

As is shown by Table 5, from the perspective of the gender distribution of the head of household, the proportion of household being male was higher than that being female. From the age distribution of the head of household, young adults (aged between 18 and 44) accounted for 11.3%, middle aged people (aged between 45 and 59) accounted for 44.9%, and older people (older than 60 years) accounted for 43.8%. From the perspective of the education level of the head of household, most of them got education below high school level. Judging from the working hours of the head of household in the past month, most of them worked less than full-time workers (that is, they work less than 167 hours).

3.2.3 Summary of housing conditions of the family surveyed

Table 6 Summary of housing conditions

Statistics	classification	Frequency	Effective percentage
Housing type	Private house	330	53.5
	Rental housing	227	36.8
	Live with friends and relatives	45	7.3
	Other	15	2.4
Housing area per capita (m ²)	<35	469	76.9
	≥35	141	23.1

As can be seen from Table 6, most of the households surveyed had their own private houses. In addition, 36.8% of households rented houses. In terms of the per capita housing area, most of the families surveyed had a small housing area according to China's current standard of 35 square meters per capita.

3.2.4 Summary of per capita income of the family surveyed

Table 7 Total household income per capita

Area	Average	Standard Deviation	Median
Henan	6527.903	7855.38	4578
Beijing	11454.09	12293.7	8693.33
Shanxi	4874.869	5288.01	2500

From Table 7, it can be seen that the per capita household income in Henan and Shanxi was significantly lower than that in Beijing, but income gap in all the three places was very large.

Table 8 Household total income per capita distribution

Area	Lower than the local minimum line				Lower than 2800 per capital	
	Urban	Rural	Total	Percent age	Amount	Percent age
Henan	53	24	77	30.92%	85	34.14%
Beijing	168	1	169	55.23%	27	8.82%
Shanxi	2	36	38	50.67%	40	53.33%

The poverty lines of the three places are as follows: the minimum living guarantee line for urban residents of a certain county in Henan is 3,600 Yuan per person per year, and that for rural residents in the same county is 1,800 Yuan per capita per year; the minimum living guarantee line for a certain district in Beijing is 800 Yuan per person per month; the minimum living guarantee line for urban residents of a certain county in Shanxi is 4,764 Yuan per person per year, and that for rural residents in the same county is 2,616 Yuan per capita per year. From Table 8, we can see that in the areas of the three samples, the percentage of households whose per capita income is lower than the local poverty line is high, in fact higher than 30% and the number for Beijing and Shanxi is even higher than 50%. From the perspective of the proportion of households whose per capita income is lower than the poverty line (that is, 2800 per capita per

year), Henan and Shanxi take up a higher percentage, while Beijing has a lower percentage. This may be due to the fact that the poverty line set by Beijing is higher than the other two places.

3.2.5 Summary of medical conditions of the family surveyed

Table 9 Personal out-of-pocket medical expenses

Average		6624.67
Median		2105
Mode		2000
Standard Deviation		14671.58
Min		0
Max		180000
Percentile	10	100
	20	400
	25	600
	30	1000
	40	1620
	50	2105
	60	3000
	70	5000
	75	6000
	80	7500
	90	15000

From Table 9 it can be seen that the individual family's self-paid medical expenses varied greatly. 50% of households paid medical expenses of less than 2,105 Yuan last year, and 20% of them spent more than 7,500 Yuan on medical treatment last year.

3.2.6 Comparative analysis of low-income families and non-low-income families

Table 10 Descriptive Statistics of Family Samples

variable name		Dibao households	Non- Dibao households	Total
Sample size		452	171	623
Family demographics	The number of people in the household register	2.93	3.36	3.05
	The number of people with labor income	0.69	1.46	0.91
Householder characteristics	Male	0.63	0.8	0.68
	Age	59.33	57.66	58.93
	Education level	2.79	2.82	2.79
	Hours worked in the past month	36.84	59.74	43.75
Family economic characteristics	Annual income per capita	7904.47	10820.83	8723.83
	Housing area per capita	51.25	102.18	65.24
Family property ownership	refrigerator	0.74	0.79	0.75
	washing machine	0.6	0.69	0.62

The descriptive statistics in Table 10 shows that of the 623 households sampled, 452 households were minimum living guarantee families and 171 were non-minimum living guarantee families. That is, 72.3% of the households sampled were minimum living guarantee families. From Table 10, we can see the differences on various indicators between minimum living guarantee families and non-minimum living guarantee families. Firstly, from the perspective of household population, the population of minimum living guarantee families was relatively small; the number of people with labor income was significantly less than that of non-

minimum living guarantee families, and less than half of the latter. Secondly, from the perspective of the head of household, compared with non-minimum living guarantee families, the head of minimum living guarantee households were less likely to be males, they were usually older, with limited education, and worked for shorter hours in the past month. This means that human capital level owned by minimum living guarantee households was less than that of non-minimum living guarantee households. Thirdly, from the perspective of family economic status and family possessions, the per capita annual income and family housing area of minimum living guarantee families were significantly lower than those of non- minimum living guarantee households. Minimum living guarantee families possessed less durable goods such as refrigerators, washing machines, mobile phones, televisions, and computers and owned less vehicles such as electric cars (including motorcycles) and automobiles; on the contrary, they owned more bicycles which were of lower prices. Therefore, the comparisons show that the living standard of minimum living guarantee families was lower than that of non-minimum living guarantee households in terms of both economic and property status. Regarding the medical expenses of family members, the medical expenditure of minimum living guarantee families last year was significantly higher than that of non-minimum living guarantee households, twice as much as the latter. This indicates that a relatively large number of family members of minimum living guarantee families were more likely to be affected by diseases, and because the patients needed the care of other family members, the number of labor population was reduced, which were not conducive to the improvement of the families' economic status.

Chapter 4

Analysis of the targeting efficiency and the poverty reduction effects of the Dibao system

As for the targeting efficiency and poverty reduction effects of the minimum living guarantee system, this article will use related indicators, like how many eligible households are missed and how many non-eligible households are wrongly included, for the purpose of calculation and analysis.

4.1 The targeting efficiency of the minimum basic living allowances system

In the relevant literature, indicators like how many eligible households are missed and how many non-eligible households are wrongly included are used to measure the targeting efficiency of the minimum living guarantee system; the former refers to the proportion of people who should be covered but the system but are not, and the latter refers to the people who should not be covered but actually are. This article has calculated the sample data according to these two indicators. Among them, the minimum living guarantee line for urban residents of a certain county in Henan is 3,600 Yuan per person per year, and that for rural residents in the same county is 1,800 Yuan per capita per year; the minimum living guarantee line for a certain district in Beijing is 800 Yuan per person per month; the minimum living guarantee line for urban residents of a certain county in Shanxi is 4,764 Yuan per person per year, and that for rural residents in the same county is 2,616 Yuan per capita per year. The results of the calculation are as follows.

Table 11 The targeting efficiency of Dibao System

Area	Henan		Beijing		Shanxi	
	Dibao standard	Local standard	Per capita 2800 yuan/year	Local standard	Per capita 2800 yuan/year	Local standard
Leakage rate	17%	22%	10%	22%	82%	83%
Under-coverage rate	64%	64%	35%	92%	30%	30%

From Table 11, we can see that whether the poverty standard being the national poverty line (RMB 2,800 per person per year) or the local poverty line which is set by the local governments, the percentage of families, both wrongly excluded and wrongly covered, was very high in all the three sampled regions. The percentage of wrongly excluded families in all the three regions was higher than 30%, while some of the non-eligible families were wrongly covered. From the perspective of the percentage of wrongly excluded families, the targeting effects of the three regions were not the same. Compared with the percentage of wrongly covered families, that of the wrongly excluded families in a certain county in Henan and a certain district in Beijing was relatively low, and it was less than 20%, which was measured by local standards, indicating that the majority of low-income families were successfully covered; while the percentage of wrongly excluded families in the county in Shanxi was very high, exceeding 80%, indicating that many minimum living guarantee families were not covered. This phenomenon may be caused by the actions of Shanxi Provincial Commission for Discipline Inspection in 2016. In that year, Shanxi vigorously rectified violations of discipline and corruption in the field of poverty alleviation, and conducted an inspection of “review” to consolidate the governance results, implement supervision, and clarify responsibilities and as a result, the supervision and management of poverty alleviation funds were strengthened and thus the percentage of wrongly excluded families were affected.

4.2 The poverty reduction effects of the minimum basic living allowances system

Based on the targeting efficiency mentioned above, to what extent did the minimum living guarantee system in the three sample regions reduce poverty? This article calculated the poverty reduction effects according to the local standard. Taking the local minimum living guarantee line as a benchmark, if the total household income minus the minimum living guarantee income is lower than the minimum living guarantee line, the family is a poor household before receiving assistance. The results are as follows.

Table 12 The Poverty Reduction Effects of Dibao System

Area	Henan		Beijing		Shanxi	
Poverty indicators	Poverty number	Poverty rate	Poverty number	Poverty rate	Poverty number	Poverty rate
Before the subsidy	90	49%	223	85%	8	80%
After the subsidy	64	35%	152	58%	7	70%
Decrease rate	26	14%	71	27%	1	10%

From Table 12, it can be seen that none of the poverty reduction rate of the sample regions exceeded 30%, indicating that the poverty reduction effect of the minimum living guarantee system was very limited. It can be seen that the poverty reduction effect of the minimum living guarantee system was not only constrained by targeting efficiency, but also affected by the amount of the subsistence allowance. That is to say, even if the proportion of wrongly covered families and wrongly excluded families was zero, the poverty rate cannot be effectively reduced if the amount of the subsistence allowance was not enough. Take the county in Henan Province as an example. Table 11 shows that more than 80% of its minimum living guarantee families had received such assistance; however, according to the calculation results in Table 13, only 27 of these families had got rid of poverty through the assistance, and other families which had received the subsistence allowance were still in poverty. This is because the local subsistence allowance was too limited, and the standard of per capita allowance was not strictly enforced. The limited subsistence allowance could only help improve their life a bit but was not enough to lift them out of poverty.

Table 13 The Overall Poverty Reduction Effects of Dibao System

Area	Henan		Beijing		Shanxi	
Poverty indicators	Poverty number	Poverty rate	Poverty number	Poverty rate	Poverty number	Poverty rate
Before the subsidy	90	49%	223	85%	8	80%
After the subsidy	63	35%	133	51%	7	70%
Decrease rate	27	15%	90	34%	1	10%

In the actual implementation process of the minimum living guarantee system, in order to help low-income people to improve their living standards, minimum living guarantee families not only got direct subsidies, but were also provided with rice, flour, edible oil, supermarket vouchers or coupons, New Year red envelopes, children's education grants, and subsidies on electricity, medical treatment, transportation, heating, etc. From Table 13, it can be seen that when the subsidies for the low-income households were included in the overall subsistence allowance, the poverty alleviation effect of the allowance system had slightly increased. The poverty reduction effect of one district in Beijing achieved the largest increase, reaching 34%; the effect of the county in Henan increased slightly, but there was no change to the county in Shanxi.

Chapter 5

Analysis of Factors Affecting Distressed Assistance

5.1 models and hypothesis

Through the above literature review and descriptive statistics of the data, it can be found that the influencing factors on whether poor households can receive subsistence allowances from the minimum subsistence guarantee system are mainly concentrated in four aspects, which is family demographic characteristics, head of household characteristics, family financial characteristics, family member health factors.

Regarding whether or not the factors that can contribute to the subsistence allowance, this article assumes:

H1: the possibility to obtain Dibao allowance is affected by family demographic characteristics

H2: the possibility to obtain Dibao allowance is affected by head of household characteristics

H3: the possibility to obtain Dibao allowance is affected by family financial factors

H4: the possibility to obtain Dibao allowance is affected by family member health factors

5.2 Econometric model

In the study of the factors influencing the possibility for a household to obtain Dibao allowances, the effect of the nonlinear model is better than that of the linear probability model. Refer to existing studies, this article chooses binary logistic model to do regression analysis.

If P is the probability that the dependent variable takes a value of 1, let $\Omega = \frac{P}{1-P}$, then

$\ln \Omega = \ln \frac{P}{1-p}$ is called Logit P. After the above Logit transformation, a general linear regression model can be used to establish a multivariate analysis model between the dependent variable and the independent variable, namely: $\text{Logit } P = \beta_0 + \sum_{i=1}^k \beta_i x_i$. This is the Logistic model. Thus,

$P = \frac{1}{1-e^{-(\beta_0+\sum \beta_i x_i)}}$, so there is a nonlinear relationship between the independent variable

and the probability P that the dependent variable takes a value of 1. Therefore, the probability that the dependent variable takes 1 and 0 can be calculated.

For binary logistic model, the dependent variable only has 2 values, 1 and 0. Here, the dependent variable is whether or not a household obtained subsistence allowances. 1 represents that the household acquired Dibao last year and 0 represents the household did not acquire Dibao.

5.3 Results of Econometric model

5.3.1 Explanation of important variables

Based on the four hypotheses presented above, this paper selects four types of variables to enter into the model analysis:

Family demographic characteristics which includes the number of household members with labor income.

Head of household characteristics which includes education level of householder and the number of working hours of householder in the past month

Family financial characteristics which includes annual income per capita and housing area per capita.

Family member health factors which includes medical expenses.

5.3.2 Analysis of model results

The overall results of the Logistic regression of the data are as follows:

Variables	Coefficient	p value
Regional classification - Beijing	2.989***	0.000
Regional classification - Shanxi	3.387***	0.000
The number of household members with labor income	-0.452**	0.002
Education level of householder	-0.259	0.106
The number of working hours of householder in the past month	0.001	0.607
Per capita housing area	-0.005	0.491
self-financed medical expenses	-0.000**	0.003
annual income per capita	-0.001***	0.000
constant	-1.409	0.029
sample number	623	

In family demographic characteristics, the number of household members with labor income has significant impact on the possibility to obtain Dibao allowance. The smaller the number of people with labor income in the family, for example, if there is no labor force or only one labor force in the family, the family will be more likely to obtain the subsistence allowance. This is because the number of households with labor income directly affects household income. If there is no labor in the family, the family's income can only come from non-labor income (such as: property income, operating income, transfer income and other income, etc.) The poor people are trapped in poverty precisely because they have no labor and they cannot obtain other types of income except government subsidies.

For head of household characteristics, education level of householder in the past month doesn't have significant impact on the possibility to obtain Dibao allowance. This may be

because the education level of the head of the household cannot represent the education level of the entire family, that is, it cannot represent the entire family's human capital situation. Although the level of human capital is one of the important indicators to measure whether the family is trapped in capacity poverty. However, from the econometric results of this paper, we can see that the level of education of the head of household is not a good indicator of human capital, and we should look for other better indicators. In addition, the number of working hours of householder in the past month doesn't have significant impact on the possibility to obtain Dibao allowance. This may be due to the fact that the number of working hours of householder in the past month does not fully reflect the family's income status. One possible situation is that the greater the number of hours worked by the head of household in the past month, the higher the family income. However, the same situation may also include the fact that the head of the household is unable to obtain a higher-paying job due to the limitations of their own education level and labor skills. Therefore, in order to support their families, they have to engage in heavy but lower-paying manual work. Therefore, the number of working hours of householder in the past month is not a good indicator of whether or not the family can obtain minimum living allowance.

For family financial characteristics, annual income per capita has significant impact on the possibility to obtain Dibao allowance. As the most widely used indicator of China's minimum guarantee system, the annual income per capita is the most intuitive indicator of whether a family is in poverty and needs the subsidy. The higher the income, the lower the chance of obtaining subsistence allowance.

For family member health factors, self-financed medical expenses have significant impact on the possibility to obtain Dibao allowance. This is due to the fact that the family's self-financed medical expenses reflect the fact that there are family members suffer from a disease and need treatment. This will have an impact on the family in the following two aspects: on the one hand, the medical expenses will have a direct impact on the financial status of the family. Especially for patients with serious illness, incurable diseases or chronic diseases who need long-term medications, large-scale medical expenses will have serious adverse effects on the family's financial status. There have even been cases where well-off families fall into poverty due to illness. On the other hand, the number of household members will be affected. The patients cannot work as a labor force and cannot obtain labor income, while other family members need to take care of patients. The inability to devote oneself to work will affect the labor income a

person can obtain, and thus affect the family's financial status. Therefore, medical expenses have significant impact on the possibility to obtain Dibao allowance. The greater the family's self-financed medical expenses, the more likely it is to receive a subsidy.

Chapter 6

Conclusion and suggestion

6.1 Suggestion

6.1.1 Increase the transfer payments from central government and improve the amount of the allowances

One of the most crucial reasons of high leakage rate and high wrong rate is that the inherent contradiction between the scarcity of the minimum guarantee funds and the large number of the

eligible households is very prominent. In some poor areas, such conflicts are particularly prominent and cannot be fundamentally resolved in a short time. In the central and western regions where the economy is relatively backward, the local minimum guarantee funds are insufficient, while the number of poor household is large, and the poverty guarantee task is arduous. In some areas, there has even been a shortage of Dibao funds, which has made it impossible for many poor households to receive subsistence allowances. According to the policy design, the amount of the minimum subsidy received by poor households should be the difference between the per capita household income and the minimum guarantee line. However, in the actual implementation process, because the total amount of funds is limited, Policies are not strictly implemented in accordance with standards. In summary, the poverty reduction effect of the minimum subsistence guarantee system is greatly constrained by the shortage of local minimum guarantee funds. Therefore, a special fund for minimum guarantee funds be established to make up for the lack of the funds in poor areas. We should give play to the central government's macro-control function of the minimum subsistence guarantee system, especially the increase of capital investment in the poverty-stricken areas in the central and western regions, so that the minimum subsistence guarantee system can benefit more poor people who really need help.

6.1.2 Promote the proxy means-test to calculate household income more accurately

The problem of inaccurate verification of household income is very prominent. China has not yet established comprehensive credit system and individual income declaration system for residents and the personal income tax system is also not perfect. The investigation power of the civil affairs department is limited. There is also a lack of communication and cooperation among government departments. The lack of effective survey and statistics methods for the income of residents makes it difficult to verify hidden income. At present, most of the poor people in China are engaged in agricultural work or informal work in cities. Generally, they do not pay individual income tax. It is difficult for poor families to provide their accurate income. The government also lacks effective means to verify family income. The income of rural residents is unstable, easy to hide and difficult to monetize. For agricultural income, due to fluctuations in market conditions, the income derived from the cultivation of various types of crops such as cereals can hardly be converted into an accurate monetary value. For the income from migrant workers, it is difficult

for the staff to verify the income of migrant workers and the income they bring to the family. Therefore, at present, China is suitable to adopt an agent household survey system, which is based on several key indicators related to the households' income and expenditure (eg, family structure, demographic characteristics; family members' education level, health status, housing conditions; durable goods, employment, etc.), the poverty status of the family is determined by the combination of income and expenditure obtained from the survey. Compared with a comprehensive wealth review, the proxy means-test has a lower cost, is simple and easy to implement, and includes the concept of multidimensional poverty. It can effectively improve the targeting efficiency of China's minimum subsistence guarantee system. In addition, the authority and responsibilities for the household survey of the civil affairs department should be clarified, and an investigation mechanism should be established for cooperation among various departments. The quality of primary-level personnel should be improved. The accuracy of targeting could be improved by reducing the measurement error of family income.

6.1.3 Strengthen the supervision mechanism of the minimum guarantee system and increase the cost of cheating

Any system will inevitably be biased in the implementation process, so it is very important to establish a comprehensive supervision mechanism. Superior government may conduct occasional spot checks and return visits to some Dibao families, conduct household surveys on the financial status of these families, and, once fraudulent behaviors are discovered, severe punishments should be imposed on the parties to raise the costs of violation. In addition, local governments should pay attention to the openness and transparency of information, accept supervision and complaints from the whole society.

6.2 Conclusion

In the above empirical analysis, this article discusses the basic conditions and influencing factors of the “targeting efficiency and the poverty reduction effect of the minimum subsistence guarantee system” and “whether poor households can receive the minimum subsistence allowance”. The results show that:

First of all, the targeting efficiency of the minimum subsistence guarantee system for urban and rural areas in three sample regions is not high. Whether it is measured by the poverty line of 2,800 RMB /year per capita or the minimum coverage line of each region, the leakage rate and the wrong rate are high. With the above targeting efficiencies, poverty reduction effects measured by local standards of minimum living standards are not satisfactory. The efficiency and effectiveness of low-income targeting needs to be improved.

Second, for the influencing factors on whether poor households can receive subsistence allowances from the minimum subsistence guarantee system, the empirical analysis of this paper shows that the number of household members with labor income, annual income per capita and medical expenses have significant impact on the possibility to obtain Dibao allowance.

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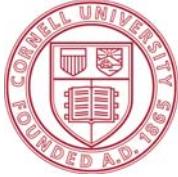
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