Performance Evaluation and Promoting Measures of Subsidizing Poor College Students in China

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Abstract

China has made great improvement on subsidizing poor college students, but current situation of this work isn't good enough. Students need better cooperation of government, society and colleges, which inspires me to go about this study. To deepen reform of subsidizing poor college students and improve this work's efficiency and effectiveness, performance evaluation should be seen as an important strategy. In this research, we've established the model to evaluate performance, and conducted an empirical research on the actual situation of 8 universities in Anhui Province in the 2015-2016 academic years. At last, we've put forward some useful measures and given some helpful suggestions to tackle the problems we've found in the research. This research will be quite beneficial for government, society and colleges to do better in aiding poor students.

Key words: subsidizing poor college students; performance evaluation model; Anhui Province

In the recent decades, with the improvement of state-subsidized student loan policy and scholarship and assistantship policy, China has made great achievement on aiding poor students financially (Cheng Jinliang, 2014). The subsidizing system has become more completed, with bigger capacity and more obvious working results. However, there are still deficiency and dislocation in the designing and operating process of this subsidizing work. In this article, we try to establish the evaluation performance model, combine empirical investigation and theoretical analysis approach together, and do research on the basis of fuzzy mathematics. Finally, we've raised some practical measures which should be given more attention by government, society and colleges.

1.   Performance evaluation model of subsidizing poor college students

Performance of subsidizing poor college students means how well this work is been done, its achievements and shortcomings. Specifically, it includes both operant behavior, (such as identifying poor students and raising and allocating resource) and this work's achievements (such as macro social effect, micro policy effect, policy justice and policy response) (Wang Xiuzhen, 2015) There are many factors influencing subsidizing performance; therefore, it's a typical multilevel and multi-factorial fuzzy problem. All these taken into consideration, it's more scientific as well as practical to use fuzzy comprehensive evaluation method which belongs to fuzzy theory to tackle with these problems.

1.1 Fuzzy Comprehensive Evaluation Index System Design

The system of subsidizing poor college students has its own basic elements and specific rules. How to coordinate these elements to make the system function well is the key. When designing the index system, the first step is to identify poor students. Second, from the economic perspective, different funding bodies should raise enough resources and allocate the resources rationally and efficiently. Third, dynamic tracking management of each target group's usage of resources should be conducted, giving feedback and doing adjustment without delay to make sure these resources can make a real difference. Last, from the perspective of policy science, making rational evaluation of the system's effect, or giving policy feedback, is indispensable. This evaluation should take

into consideration not only its macro social effect, but also micro policy effect, policy justice and policy response. Getting clear of these four steps, we will design the index system based on the analysis above. See table 1.

Indexes include: (1) Software platform's development identification, which means quantitative index system establishment of identifying poor students, number of poor students and their poverty-level measurement and so on. (2) Identifying conception evolution, which means whether the meaning of "poor" has been enlarged to cover other aspects than economic, including psychological, academic, and job-hunting and so on? (3) Allocating model optimizing, which means whether Layered Subsidizing has been established? (4) Allocating conception evolution, which means whether the traditional conception of financial and gratuitous subsidizing has been changed into a better one, focusing more on cultivating students' ability and teaching them being thankful? (5) Resource performance auditing, which means whether these special funds have been full-amount withdrawn and used, and how it has been used. (6) Subsidizing projects integration, which means, on the one hand, how many and what kinds of subsidies one student can receive; on the other hand, how various funding projects integrate with each other. (7) Policy effect, which means policies' subsidizing effect, such as student loan's delivery rate, scholarship and subsidy's obtaining ratio, work-study program's finishing rate and so on. (8) Policy justice, which means resources' equitable distribution degree after policies being implemented. (9) Policy response, which means target group (poor students)'s approval level to policies.

Table 1 Performance Evaluation Indexes of Poor College Students' Subsidizing (Level 1)

Index of level 2	Index of level 3			
Poor students' identification	Identifying system construction	Hardware platform application	Software platform development	Identifying conception evolution
Fund collection	Central government's input ratio	Local government's input ratio	Colleges and universities' input ratio	Social force's input ratio
Fund allocation	Allocating model optimization	Allocating conception optimization	Fund performance audit	Funding projects integration
Later inspection	Inspecting system construction	Inspecting personnel allocation	Inspecting measures application	Rewards and punishments
Macro social effect	Talent cultivation	Public satisfaction	Influence on higher education development	Support to vulnerable groups
Micro policy evaluation	Policy effect	Policy efficiency	Policy justice	Policy response

1.2 Fuzzy synthetic evaluation model establishment

2.1 Set up performance evaluation index system, referring to Table 1. Determine the set of evaluation factors V= [V_1, V_2, …, V_n] and the set of index weight K=[K_1,K_2,… ,K_n].

2.2 Determine the domain of grades U= [U_1, U_2,… ,U_n], which is the set of all possible evaluation results valuators made on evaluation objects. Suppose the specific domain of grades is: U=[good, fairly good, moderate, fairly poor, poor]=[0.8,0.6,0.5,0.4,0.2]

2.3 Determine membership matrix R= [r_{i1}, r_{i2}, …, r_{ij}] indicate the membership of the jth level evaluation remarks on the ith evaluation index.

2.4 Determine evaluation model P= K·R= [P_1,P_2,… , P_n] and evaluation results F= P·WT, among which WT is transposed matrix of W, W is composite survey result, F is a algebra value.

2. Empirical Analysis

In the first half year of 2016, we have investigated 8 colleges and universities in Anhui Province in China about

subsidizing poor college students, through questionnaire survey, statistical statement and conversazione, and then done analysis based on the investigation. This investigation has provide 7 statistical statements, 3920 questionnaires for students and 160 questionnaires for social personnel, the actual recovery of 7, 3763 and 149 copies respectively, of which 7, 3685 and 136 valid copies, for effective questionnaire returns-ratios are 100%, 94.0%, 85.1%, respectively.

2.1 Data processing

According to fuzzy comprehensive evaluation procedure, we've adopted, respectively, method of ranking and weighting based on fuzzy statistical experiment to evaluate qualitative indexes and method of membership function to evaluate quantitative indexes. Since computational data is too big whereas the article length is limited, detailed computational process will not be shown here, the main computational results (indexes of level 1 and level 2) being shown in Table 2.

2.2 Preliminary analysis of evaluation results

On the basis of grading standards of evaluation model and evaluation index illustrated above, with reference to grading method of government performance, and according to threshold principle, we have worked out these differentiating standards.

When score $\geq$ 0.8, poor college students' subsidizing performance is good. Effective and efficient work in various aspects has been done; subsidizing policy's performance level is high. When 0.8> score$\geq$ 0.6, subsidizing performance is fairly good. Various indexes' performance is fairly coordinated. When 0.6> score$\geq$ 0.5, subsidizing performance is moderate. Various indexes' performance is more or less normal. When 0.5> score$\geq$0.4, subsidizing performance is fairly poor. There is something wrong with the subsidizing system's operation. When 0.4> score$\geq$ 0.2, subsidizing performance is poor. There are serious problems in various aspects of subsidizing work. On the basis of the results of subsidizing performance evaluation of 8 colleges and universities in Anhui Province and various raw data of statistical and investigative work, we can see:

Table 2   Comprehensive Performance Index

Index	Evaluation number
Poor students' identifying index	0.565
Fund collection performance index	0.723
Fund allocation performance index	0.694
Later inspection performance index	0.578
Macro social effect performance index	0.734
Micro policy evaluation performance index	0.736
Overall performance evaluation index	0.722

2.2.1 The overall performance of subsidizing poor college students is fairly good. Both specific index and real situation have reflected that, in general, the subsidizing work has been done rationally, efficiently and effectively. Especially the three subsidizing bodies, government, colleges and universities and society, have made great improvement on this work. Macro social effect and micro problem-solving ability has been increased a lot. However, we also see many shortcomings in various aspects, for instance: the overall input can be larger; there is something inefficient with identifying system construction and software platform construction; poor students' different needs could be met more actively; there are still regional, interschool and individual differences; performance auditing and supervision system should be improved continually.

2.2.2 In this research, we've found a positive correlation between the results of performance evaluation and policies or regulations issued by central or local governments.

According to Chinese Students Financial Assistance Development Report in 2015 issued by The National Students Financial Assistance Management Center August 26th, 2016, governments, colleges and universities and other social groups in total have aided 41,415,800 person-times in 2015. The number of subsidizing finance reaches to ¥ 84.797 billion, increasing by 18.29% and ¥ 13.111 billion from 2014(National Students Financial Assistance Management Center, 2016).

2015 is the first full year of implementing new policies in which state-subsidized student loan standard has been improved. There are several improvements compared with 2014. First, state-subsidized student loan interest will be covered by government finance in full amount when students are still in college. Second, the maximum loan duration will be extended to 20 years. Third, the payback period will be lengthened from 2 years to 3 years. Fourthly, the rescue regime of loan repayment has been established. Because of these, the number of state-subsidized student loan which has been granted in 2015 reached ¥ 21.986 billion, increasing by 31.66% and

¥5.287billion from 2014, accounting for 14.09% of total subsidizing sum and 25.93% of colleges and universities' total subsidizing sum, respectively.

3.   The common and basic problems in subsidizing work judging from evaluation results.

3.1 Total quantity of subsidizing fund is not enough

Nowadays, the contradiction between scarcity of funding resource and the growing trend of poor college students' number becomes a prominent problem. There are several reasons for that.

3.1.1 There is still big challenge in front of Chinese education.

In 2015, China's education spending exceeded 2.6 trillion, accounting for 4.15% of total GDP. But when China set the goal of 4%, America's fiscal education expenditure kept accounting for more than 4.6%, actually fluctuating from 4.6% to 5.5%. Besides, with education expenditure growing, how to allocate it and how to narrow regional gaps becomes the second threshold China's education must step over. In 2015, more than half of this 2.6 trillion has been put into elementary education. The relationship between elementary education, vocational education and high education need further consideration from two aspects of both input sum and input structure. (Chinese Students Financial Assistance Development Report in 2014, 2015)

3.1.2 Local governments haven't put their functions into full play.

Local governments know students' social background better. If they can use this advantage and take measures, the cost of discriminating poor students' information and identifying them will be reduced. Besides, with local governments' encouragement, social enterprises and public institutions can provide more part-time jobs outside campus. Furthermore, local governments should have made full use of audit and supervision mechanism to make sure scholarships and subsidizing fund has been full-amount withdrawn and put into use. Local governments should do more since they can give colleges and individuals direct guide and should provide more help to them.

3.1.3 Social force needs effective mechanism.

In the past few years, social force has become an important channel of subsidizing students; making up for government's input deficiency in education. However, it should have done more. Because of lacking donating policies and regulations, without sufficient formal management organizations and an effective incentive mechanism, social force's effect is still in a spontaneous and voluntary state. Some entrepreneurs have the very good intention to aid, but cannot find suitable channels. Individuals cannot donate money if they don't know how to do or don't believe in the current operating mechanism. Only when people are sure that their help can really make a difference, they are willing to help. Here what they need most is an effective mechanism.

3.2 Funding bodies don't have sufficient coordination.

In the process of implementing policies, the contradiction between administrative drive and commercial operation led to some consequences, in which colleges and banks couldn't coordinate well and therefore governments' good intentions couldn't be achieved successfully. Although new policies issued last year have promoted the effective operation of state-subsidized student loan in some degree, there are still some problems, such as banks grant loans too slowly. This is partly because banks, especially those having never cooperated with colleges, lack enthusiasm, granting loans very cautiously under pressure; partly because colleges and universities don't have bargain chip to bargain with banks since they turn in the entire budget to government and have no money left. Various funding bodies should cooperate better to achieve their common goal.

3.3 There are gaps within subsidizing itself

China has made great achievement on high education in the past decades; however, unbalanced development in various regions remains a serious problem. Governments have invested high education sufficiently in developed area, security systems guaranteeing poor students' subsidizing, while in underdeveloped area, things are totally different. Social force has become an important part of college students' subsidizing. However, because some well-known universities with long histories which are located in rich areas have absolute advantage in attracting fund over those in poor areas or those newly established, social force's help always goes to them. Besides, there is no organic connection and integrated planning within various policies, so different policies' roles in the entire system is not clear. There are still some cross-overlap-covered regions. All these factors lead to not only poor performance in subsidizing work, but also a rich-poor divide in the work itself.

3.4 Poor students are hard to be identified.

3.4.1 From an objective perspective, China is such a vast area and there is still a big economy gap between east

and west regions. Therefore, it's hard to set one unified standard to identify quantitatively poor students who come from different regions. Students from rich areas may think themselves poor if they cannot afford an expensive smart phone while students from poor areas may feel quite satisfied when they can eat two vegetables every lunch. It's really hard to identify them if colleges rely on students' application for subsidies to determine who poor students are.

3.4.2 With the development of network techniques and social credit system, social information network has developed a lot. But with imperfect laws and regulations, in an immature marketing environment, resources about students' social information and credit background still cannot be shared. Therefore, it's hard to identify poor students through credit system like what America did.

3.4.3 As we've mentioned in 3.1, resource fund is limited, therefore colleges are in dilemma. High expenditure on identifying poor students will lead to high accuracy but as well a reduced fund left to grant students. Of course, if spending less on identifying them, probably there will be some inaccuracy and even mistakes.

4.   Approaches to improving poor college students' subsidizing performance

4.1 From the perspective of government, what should be done?

4.1.1 What should central government do?

First, the fundamental approach to helping poor college students is to increase financial input. Issuing education bond or stock and some other investing ways should be considered. If we exploit our education financial potential by using these ways, we will probably raise more money, expend the subsidizing cover, and have unexpected surprises.

Second, central governments should give colleges and universities guidance about how to charge reasonably. Don't wait colleges making mistakes on charging students and then punish them, governments should timely adjust policies about how to charge and set up price management mechanism, such as college cost measurement, cost information publish, laws and regulations and so forth, to give colleges sound guide and alleviate students' burden practically.

Third, central government should establish performance auditing system, supervision system and accountability system, conducting effective governmental or nongovernmental auditing as to whether the subsidizing has been full-amount withdrawn or used reasonably, supervising relevant departments managing fund, and reinforcing control of special funds.

4.1.2 What should local governments do?

Local governments should play a greater role in discriminating poor students' information, encouraging social enterprises and public institutions to provide more part-time jobs and establishing systems to help students.

4.1.3 What should both central government and local governments do?

Finance transfer payment system should be established as soon as possible, in order to remedy the resource deficiency in underdeveloped areas. In practice, we can design a more scientific and reasonable transfer payment formula, according to colleges' distribution, source of students, poor students' situation and other objective factors. By establishing financial transfer payment system, we could resolve the problem of lacking money in poor areas in some degree.

Innovation of other systems will be a great supplement. Setting up social assistance mechanism, guiding poor students to make use of it, and implementing tax relief on those who donate money to invite more enterprises and institutions to participate in subsidizing work will be some innovative approaches to this issue.

4.2 From the perspective of college, what should be done?

4.2.1 In general, colleges and universities in China haven't had the awareness of cost management, because under government's administrative control, colleges depend on government's financial allocation, never worrying about the risk of being insolvent or bankrupt. More than that, unreasonable cost structure makes students under heavier burdens. Therefore, colleges have to reform their structure, establish and improve cost management and control system, let their limited resources be allocated more reasonably and alleviate student's burden from the first.

4.2.2 Colleges should improve their conception of poor student's subsidizing from only financial aid to comprehensive support. Besides financial aid, colleges have a lot to do, for example, providing psychological

assistance, academic help and job-hunting support and so forth. Plus, colleges should strengthen their educational function, trying to create a more equal, healthy, and harmonious environment in which poor students can live happily.

4.2.3 Colleges should establish a more scientific identifying index system to recognize real poor students, making sure of justice and equity. Indexes should be designed from the four perspectives of economic resource, social resource, human resource and natural resource. Economic resources include the whole family's monthly income per capita, monthly expenditure per capita, annual income, annual expenditure, total value of family's assets and debts. Human resource indexes include family social network and its aiding ability. Natural resource indexes include the exact location of students' hometown and whether the family has special money-earning way or not. Human resource indexes include provider's occupation, the family's labor force, family health and education spending and so on.

4.2.4 Colleges should establish layered subsidizing model to improve pertinence and effectiveness.

First, we aid through layered ways. There are scholarship, loan, subsidy, fee-reduction and many other ways which play different roles in subsidizing work. All things considered, loans and part-time jobs should play greater roles while gratuitous subsidies should be restricted, because students' sense of self-reliance needs to be developed.

Second, we aid according to layered poverty degrees. Poverty does not only mean a poor living condition, but also a subjective feeling. We divide poor students into three types, someone struggle to survive, someone have difficulties to live a well-off life, and someone try to develop further, according to poverty degree. Then, we can calculate students' needs on a more open and transparent information platform we established based on Big Data, set up basic ratio of subsidy to poverty degree, making effort to let every student get suitable subsidies.

Third, we aid according to various poverty types. We should bear the education concept of "teaching students in accordance of their aptitude" said by Confucius in mind, give different students different help, such as giving psychological health education to someone with mental pressures or interpersonal relationship obstacles, granting academic support to someone with academic difficulties, providing social practice opportunities to those who with difficulties in job-hunting.

Fourth, we aid according to different grades. As for junior grades, we do more on student loans and psychological counseling; provide labor-focused job positions to develop their self-reliance. As for senior grades, we provide some professional and technical job positions to develop their ability of information acquisition or society adaptation and strengthen their specialized knowledge and broaden their horizon.

In practice, colleges should adopt various measures to grant subsidies, such as signing contract with students and ordering students pay back loans according to the contract, or depositing subsidies directly and secretly to students' campus consume cards based on accurate calculation without letting other students know in order to protect student's self-esteem, instead of giving the money to school and letting school do the granting job.

4.3 From the perspective of society, what should be done?

4.3.1 Public opinion and propaganda should be put into great use, on the one hand leading social force to take part in students' subsidizing, on the other hand, report the students who break their words on repayment to promote loan mechanism operate more healthily. The whole society should raise their awareness of the significance of aiding poor students and do more on propaganda.

4.3.2 Effective social subsidizing mechanism should be established. Through this mechanism, we could invite enterprises and social institutions to provide help; we could mobilize successful people with good reputations to invest; we could enlarge part-time job markets. All in all, we could grant students all-around support including economic aid, academic help, and advises on job-hunting.

4.3.3 Banks should realize the significance of students' subsidizing and shoulder more social responsibility. Banks should truly understand government's intentions, positively communicate with colleges, try to solve contradictions between administrative driving and commercial operation, and set up communication and coordination mechanism with colleges. Through these ways, banks should have had more power to guarantee smooth implementations of student loan policies.

5.   Conclusion

China has made great achievement on helping poor students but there is still something we could do better. In this research, the current situation of poor college students' subsidization in 8 colleges and universities in Anhui

province in China has been investigated and shown here. The model to evaluate performance has been established, and an empirical research has been done. Moreover, we've put forward some useful measures to tackle the problems we've found in the research.

There is much left to discover. In the future, we will continue exploring this issue and select some special fields to research more. What colleges should do to help poor students from economic help to psychological support will be an interesting theme. We will do more study on this field. A dream situation for all: every poor student can get help; every help can go to poor students.

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