

# Decision-Making Criteria of PPP Projects: Stakeholder Theoretic Perspective

Xueqin Shan\*, Wenhua Hou, Xiaosu Ye, and Chuanming Wu

**Abstract**—Any decision-making is based on certain theory. Taking the public rental housing in Chongqing municipality as an example, this essay states that the stakeholder theory can provide innovative criteria and evaluation methods for Public Private Partnership (PPP) projects. It gives an analysis of how to choose decision-making criteria for different stakeholders in the PPP model and what measures to take to meet the criteria to form “symbiotic” decision-making mode through contracts and to boost the application of PPP model in large-scale public programs in China.

**Keywords**—PPP, Stakeholder Theory, Stakeholders, Decision-making Criteria

## I. INTRODUCTION

AS an effective approach to attract private capital, PPP model, in which risks are scattered and profits are shared, finds extensive application in public projects in Chinese cities. It transfers great risks of public programs to qualified private partners and produces high quality public goods and services. Still, its structure is very intricate and a good many stakeholders are involved. Once profits are not properly allocated, the project will be doomed to fail. As a result, before the PPP program is launched, stakeholders should set up rational decision-making criteria and map out appropriate decision-making methods to circumvent risks resulting from uneven profit distribution and further promote application of PPP model in large-scale public programs.

## II. STAKEHOLDER THEORY AND THE DECISION-MAKING CRITERIA OF PPP MODEL APPLIED IN PUBLIC PROJECTS

Decision-making is to explore, attain, create and distribute social resources and interests in conformity with certain theories and standards. In this process, the decision-maker, motivated by certain goals and directed by some criteria, selects specific methods to implement a project with a view to maximizing his or her interests. The selection is first of all based

upon the criteria. To study decision-making in the PPP model, it is necessary to study theories on which it is based, which is the crux to formulate, implement and analyze a decision, and which predetermines whether the decision-making is scientific, rational and valid.

One PPP project involves different interests of various parties. If all the participants make decisions according to traditional criteria, the cooperation will probably break up. Most of the PPP construction programs are quasi public goods. Should they fail, the loss would be far more significant than that of common projects and the national and social interests would be severely jeopardized.

It is generally recognized that the stakeholder theory was firstly proposed in 1984 in strategic management—a stakeholder approach by Professor Freeman. His definition of stakeholders, which is considered as the sign of the formal establishment of the Stakeholder Theory [1], includes community, government and the environment. This theory holds that the society is an interest-sharing organic whole. It believes that the goal of the business will not materialize unless the interests of groups which are able to influence the business as well as to be influenced by the business are taken into consideration. Most importantly, it emphasizes the maximization of the interests of stakeholders instead of those of shareholders. Since the 1990s, this theory has gradually improved and has even provided a theoretical framework to identify and analyze the influence of organizational behavior. It has been extensively applied in business management, investment program analysis, program management and so on [2]. It has even evolved into a popular analysis tool in the field of development. Some international organizations, the World Bank included, explicitly stipulate in the evaluation guide of loan projects that it is essential to carry out stakeholder analysis when it comes to program decision-making [3].

It is helpful to introduce the Stakeholder Theory to the PPP project, and to use it as a basis to choose decision-making criteria. Specifically, it helps analyze demands of different stakeholders, ensures that profits are proportional to investments and risks. To some extent, it stimulates stakeholders to actively cooperate with each other, especially in public investment programs aimed at offering government public service, all of which should be directed by the stakeholder theory. Having studied 16 failed PPP programs since the 1980s, researchers including Xia Qi find that the objection of stakeholders is the main culprit bringing the failure of PPP projects [4].

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### III. SELECTION OF DECISION-MAKING CRITERIA OF THE PPP MODEL PUBLIC PROJECTS—TAKING THE PUBLIC RENTAL HOUSING IN CHONGQING MUNICIPALITY AS AN EXAMPLE

In order to improve the housing system and foster a rational and healthy atmosphere in the real estate market, the Chinese government has introduced the public rental housing. As one of the major cities in China, Chongqing municipality will build 40 million square meters public rental housing from 2010 in the next 10 years with a view to providing 30% of the low-income group with houses at one stroke. Public rental housing, together with low-rent housing, affordable housing, dilapidated old houses, city village reconstruction housing and migrant workers apartments are all a part of the “1+5” affordable housing system aimed at providing a comprehensive housing system for city low-incomers. It is expected that 20% of the public rental housing capital will be offered by the government financing and the rest will be raised through land transfer proceeds, bank loans and bond issuance. It is also stipulated that if the principal and interest can not be paid on time, the financial budget will be responsible to pay the remaining part. Currently, land transfer proceeds are the most significant financing method for the public rental housing while the other approaches can not solve the problem thoroughly. The overdependence on land transfer proceeds will add to economic risks and make it harder to regulate the real-estate industry, which has been widely criticized. Therefore, new financing methods are urgently demanded in the public rental housing projects in order to reduce the government's financial burden. However, since public rental housing programs are mainly for public welfare, there is a huge shortage of construction funds (Table I), but it is unrealistic to merely depend on the government or the market. In this case, the public-private partnership comes to rescue.

#### A. Main Stakeholders of Public Rental Housing in PPP model and the Formulation of Their Decision-making Criteria

PPP projects involve interests of various parties. The stakeholders of PPP model public rental housing project refer to individuals or groups who benefit or suffer from the construction of the public rental housing and who are able to influence its result. In essence, they are a series of complicated contractual arrangements between the public sector and the private one [5]. Among the stakeholders, the general public are in a special position, for they are both the original client and the direct consumer of the project, hence the most critical stakeholder (Fig. 1). The stakeholders of public rental housing appeal for different interests in the project (Table II), which reflects their dissimilar value orientations. Therefore, they are not moving towards the same one goal. Instead, there is an included angle between their goals and the goal of the project. The smaller the included angle, the bigger the resultant force, which is shown in the formula  $F = F_1 \times \cos\theta_1 + F_2 \times \cos\theta_2 + F_3 \times \cos\theta_3$  (Fig. 2). In practice, conflicts are unavoidable and  $\theta$  will not reach zero by any means, but the smaller it is, the more consistent will be the goals of different participants and the bigger the resultant force. As a result, the selection of the decision-making criteria of different stakeholders will center on

TABLE I  
PROJECT INVESTMENT AND FINANCE IN PUBLIC RENTAL HOUSING OF CHONGQING MUNICIPALITY

Total Project Structure	Name	Amount (in billion RMB)
Project Investment (RMB 9.5 billion)	Construction and Installation Cost	8.882
	Land cost	0.622
	Irregular Tax Expense	2.385 (Instant Tax Return)
Project Finance (RMB 9.5 billion)	Fiscal Input (20% of the total investment)	1.9
	Accumulation Fund Loans	3
	Commercial Bank loans	4.6
Principal (RMB 7.6 billion)	Provident fund loans	3
	Commercial bank loans	4.6
Interest (RMB 0.379 billion)	Provident fund loans interest	0.126 billion per year (annual interest is 4.2%)
	Commercial loan interest	0.253 billion per year (annual interest is 5.5%)

Source: New Deal in the Public Rental Housing of Chongqing Municipality: How to Solve the Problem of Affordable Houses?

<http://finance.sina.com.cn/roll/20100906/13418609282.shtml>.

how to effectively motivate, coordinate and satisfy the stakeholders [6].

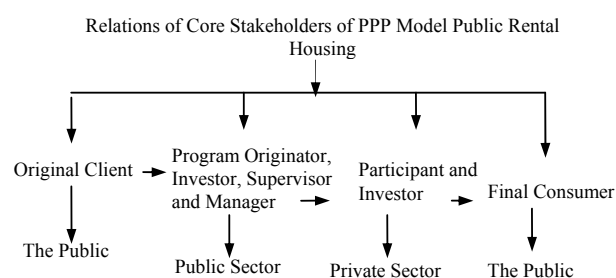


Fig. 1 Relations of Core Stakeholders of PPP Model Public Rental Housing

In fact, the implementation of PPP projects is a process where interests are divided among distinct stakeholders, like in a game. In substance, it is a process where different interests are coordinated and where individual parties strive for the maximum profit. Still, stakeholders are not equal in a game. Those in the public sector, as the originator, enjoy unique advantages. This, in addition to the public interest standard, makes them tend to keep all the interests to themselves [7]. The motive of private stakeholders to pursue profit maximization predetermines that they are not likely to become the sole provider of public rental housing projects. Still, the public sector and the private one can form common interests through contracts. However, another stakeholder---the general public, barely have no chance to participate in the game, neither are they able to supervise the implementation of the program to ensure their own interests.

Therefore, the process of selection, that is, the decision-making, is important to ensure that every stakeholder has

equal access to the game of interests. Specifically, participants are able to get equally involved into the decision-making of

TABLE II  
INTERESTS OF STAKEHOLDERS OF PPP MODEL PUBLIC RENTAL HOUSING PROJECTS

Stakeholders	Interests to Appeal for	Manifestation
Private Sector	Economic performance	Rent of public rental housing
		Rent of supporting commercial facilities
		Transfer income of supporting commercial facilities
		Positive social image
Public Sector	Social, ecological and economic returns	Long-term cooperation with the government
		.....
		Construction funds from the private sector
		High efficiency of projects led by the private sector
		High-quality houses and supporting facilities
The Public	Social, ecological and economic returns	Better housing environment of people with low or medium income
		Lower construction cost of public rental housing
		.....
		Satisfactory housing facilities
		Convenient transportation
		Various supporting facilities
		Agreeable environment
		Reasonable rent
		.....
		.....

PPP model public rental housing, have a thorough knowledge of the project information, adjust the expectation for the it, map out a decision-making criteria satisfying the government, the private sector as well as the general public and form a symbiotic decision-making mode to make the included angle as small as possible and reduce conflicts to win a bigger resultant force (Fig.2). Only in this way can the goal of PPP model public rental housing be realized.

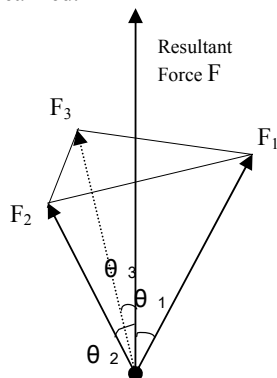


Fig. 2 Conceptual Model of the Interest Forces of Stakeholders in the PPP Model Public Rental Housing Projects.

#### B. Selection and Realization of Decision-making Criteria of Stakeholders of PPP Model Public Rental Housing

The success of PPP model hinges on whether stakeholders are satisfied through the game, which requires them to select their own decision-making criteria. The characteristics of PPP model public rental housing determine that the decision-making of stakeholders is special. To be specific, the public sector can not regard social and ecological returns as the

decision-making criteria, as it does in the non-competitive projects, the private sector can not choose the economic performance as its decision-making criteria, as it does in the competitive projects, and the general public can not have a say in whether they are willing to accept the project products or not. In reality, the decision-making criteria are the choice made after interests of various stakeholders are taken into consideration.

##### 1) Selection and Realization of Decision-making Criteria of the Public Sector

The reason why PPP model is adopted in the public rental housing projects is that with private capital, programs are able to be completed as scheduled, and public housing facilities and services will be improved. In this way, the interests of the government as well as those of the public are protected and both can enjoy the social and economic returns generated by the program. The program is successful only if the public, that is, the original client and direct consumer of the program, are satisfied. On the other hand, the major purpose of the private sector, the important participant and investor of the program, is to gain economic results. Therefore, the decision-making criteria of the public sector should be to satisfy the general public while making sure that private stakeholders obtain the minimum profit.

To make it come true, the public sector should give private stakeholders enough scope for development and work out reasonable guarantee and incentive measures to balance risks it takes and interests it gains (the minimum profit in this case). Currently, private stakeholders of public rental housing programs take 3% of the administrative charges. In consideration of the interest of funds used, this interest rate should be enhanced. The government can refer to the average interest rate in the industry and meet the demands of the private sector through renting and selling public rental houses and their supporting facilities.

To satisfy the general public, the government should give them guidance and make them a part of the program. It should fully inform them of the PPP model public rental housing, and provide them with effective means to appeal for their interests. Only in this way will the government have an adequate acquaintance of the expectation of the general public from supporting facilities, transportation, rent, environment of the public rental housing. The information publicity system, participative decision-making system and responsibility investigation system are important approaches to increase the public satisfaction.

##### 2) Selection and Realization of the Decision-making Criteria of the Private Sector

Private stakeholders participate in the PPP program to seek for economic returns. However, because of the special features of the public rental housing, they can not consider economic returns the only decision-making criteria. In practice, only experienced private parties with outstanding skills, strong management abilities and excellent performance will be granted the right to participate in the PPP program, which to some extent, has enhanced the social image of private parties.

As a result, other competitive products produced by them are more likely to take the fancy of the public. Therefore, the decision-making criteria of the private sector should be to maintain the lowest return while satisfying the public sector and the public who are in pursuit of similar interests [8].

To achieve this end, it is necessary that the private sector should adjust its development strategies and management activities under the guidance of the national policies so that the construction procedure will be in conformity with rules and regulations of the Chinese government. In the meantime, it should also turn the demand and expectation of the public into strict working principles and standards and produce what is satisfactory or even overwhelmingly good.

### 3) Selection and Realization of Decision-making criteria of the Public

The ultimate goal of PPP model public rental housing is to perfect housing system and provide low-income groups with houses, which is consistent with the goal of the public. Given that the private capital is profit-driven, the decision-making criteria of the public should be to satisfy private parties with the lowest return and attain social and ecological returns of the public rental housing.

To realize this goal, the public, restricted by their competence and specialty, should devote themselves in areas where the market and the public sector fail and where they can complement the public and private sector, for they are observant at the grass-root level.

Meanwhile, in the game for interests, the public should effectively interact with the public sector and the private one, seize every opportunity to get involved, act strategically and offer more constructive advice in order to exert influence on the public rental housing from the outside.

Therefore, it is essential to select representatives of the public, including final consumers such as university graduates and local residents and immigrant workers who live in difficult conditions or even have no house to live in, non-governmental parties who do not stand for any interest group, and experts with technical background. In certain proportion, those people with an extensive social basis constitute the major participants.

The final consumer lays stress on social and ecological interests and they can give feasible advice beneficial to themselves; parties who stand for no interest groups can give maneuverable advice from the viewpoint of sociology and equality and efficiency, pay attention to interests of all parties at the same time and ensure that the PPP model public rental housing program goes on smoothly; experts in architecture and management evaluate and analyze risks and returns of participants from the perspective of technology and hazard.

The final result is shown in the Fig.3. The horizontal axis stands for the social and ecological results while the vertical axis stands for the economic results. If the private sector pursues social and economic effect among other things, the slope of the line A will be smaller and nearer to the horizontal axis. This indicates that in the decision-making process, the private sector, under the direction of the stakeholder theory, satisfies the needs of the public sector and the public and receives less

economic gains and more social and ecological effects. On the other hand, when the government, instructed by the same theory, offers a series of policy support and subsidies, the economic profits of the private sector will increase in proportion, so do the social and ecological effects. Finally, with the help of the theory, the public will further boost the social and ecological effects while the economic gains of the private sector may moderately decrease. After the game of interests of the three parties in the process of decision-making, the PPP model will be successfully applied, economic, social and ecological returns are obtained in the PPP model public rental housing, and goals of different stakeholders are realized.

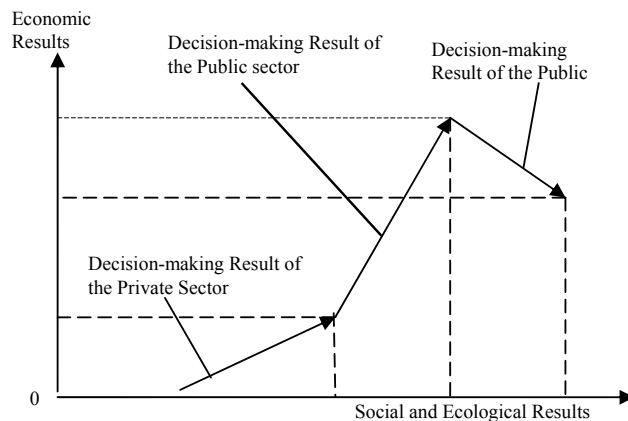


Fig. 3 Decision-making Criteria of Stakeholders of PPP model Public Rental Housing Projects

## IV. CONCLUSION

Conflicts of interests can not be avoided in the public-private partnership. Social resources will be inefficiently allocated if we focus solely on social resources while ignoring economic interests. On the other hand, the public sector and the public will be less satisfied if we put economic results well above social and environmental effect. Therefore, the decision-making criteria of PPP model should be to satisfy the stakeholders. It is as a result essential to equally involve the public sector, the private sector, and the general public to make decisions in the game of interests. Only in this way will the public-private partnership be successful and will goals of stakeholders come into reality.

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