

# A Study on the Application of PPP in Public Housing

Fan Zhang

School of Architecture and Engineering, Yan'an University, Yan'an 716000, China

121604203@qq.com

**Abstract.** Although not as commonly applied as area of infrastructure, public-private partnerships (PPP) in the delivery of homes have been practiced globally (Payne, 2000). However, application of PPP in subsidized housing still takes a smaller proportion among PPP housing projects especially when public housing is facing great demand. The perfection of subsidized housing system could help to achieve the goal of developing a harmonious society by accommodating more low-income people on the waiting list. It also helps the low-income groups to relieve financial burden. However, project has confronted a series of problems. This concern may start from how to make the private sectors to get involved, since public housing projects may generate little interest. Actually, investment in public housing by private sectors may predict long payback period and fewer profits. This paper aims to find out a suitable risk-sharing mode to increase the willingness of private sectors in subsidized project by allocating risks in a reasonable way.

**Keywords:** PPP; Public housing; Risk allocation; Critical risks.

## 1. Introduction

Public housing or subsidized housing in most areas have been frequently confronted with lack of budget and amount of supply. In Australia, the total stock of public and community sector housing peaked at around 382,000 in 1996/7 before declining to 375,000 in 2000/01. The period between 2000/01 and 2005/06 further witnessed a loss of 10,100 dwellings.(AHURI, 2006).A key constraint on provision of public housing is that net incomes after rebates received by housing authority cannot cover their operational costs, leading to growing deficit with the expansion of stocks and reduced number of households provided with assistance.(Donald, 2001) In Hong Kong, the demand of public housing is boosted by skyrocketed prices of private housing and raised minimum wage standards, (Liao, 2013) which requires greater fund mainly derived from the capital invested by the government, and supplemented by recurrent income through selling and leasing properties. (Hui and Wong, 2004). The tremendous demand adds burden to government in terms of the limitation of land and budget. Also, in poverty-stricken areas where people live in slums, affordable and subsidized housing have been in constant need to guarantee basic living condition.

Given the above condition, it is advisable to for public collaborate with the private sector and change the role of Housing Authority from a developer to a facilitator. The PPP method is a promising way to achieve financial sustainability through the collaboration of government departments and the private sectors.

However, housing PPP has revealed some problems as the result of long payback period and fewer profits, which would be a critical issue to be addressed when PPP is applied in public housing. According to National Audit Chief (2003), a PPP housing project was completed 8 years longer to because the developer focused on the high-end portion of the development first. Another in Selangor under-achieved its sale quota to targeted buyers as the developer focused on a more lucrative house-buyer segment (National Audit Chief, 2000). Yet another brought financial loss to a public agency as the developer under-valued the granted land for the development (National Audit Chief, 2001). To implement PPP among public housing, the above-mentioned issues need to be addressed and further discussed.

## **2. Literature Review**

PPPs are collaborations between public and private sectors to provide public services more efficiently (Xu et al, 2010). PPP projects could obtain private sector finance, innovation and expertise and help to transfer risks (Abdul-Aziz and Kassim, 2010). Although not as commonly adopted for infrastructure provision, PPP housing has been practiced globally mainly to deliver homes for sale (Payne, 2000). In housing provision, PPP is promoted on the assumption that it enhances multi-sectoral participation, productivity of the housing sector, and increases housing affordability and accessibility. (Ikekpeazu, 2004; UN-HABITAT, 2006b; Shelter Afrique, 2008) Nevertheless, PPP applied in subsidized housing like Public Housing has eluded scholastic scrutiny.

Although lots of projects have adopted PPP for decades, not all of them are successful and some projects have suffered extremely high risks (Thomas et al. 2003), leading risk management to become a critical issue. Generally, the determination is often based on subjective intuition or to distribute the risk to a party who has the greatest capacity, such as expertise and authority (Li et al. 2005). Risk allocation is a complex and flexible process, which depends on many factors, such as participants' risk attitude and the capability of managing risk and risk premium (Zhang et al. 2002; Lam et al. 2007). Comprehensive critical risk allocation principles and influencing factors have been researched, whereas most of them focus on the field of infrastructure and few on public housing. Also, risk allocation method mostly owns its theoretical ground but still need to be tested in real projects.

## **3. Research process**

A comprehensive literature review is essential and serves as the fundamental theoretical basis. It started from the international experience of housing PPP, which provided some hints to the implementation of public housing. This study started from Australia or Hong Kong, etc. firstly with regard of the already mature and effective mechanism of public housing. Prior to each interview, desk-top research was conducted to obtain as much additional information as possible about the organization and its housing PPP projects. A postal questionnaire survey was sequentially followed by interviews if necessary. The distributed questionnaires are based on past literature and the scenario created.

To figure out reasons that make private sectors feel reluctant to get engaged in PPP housing projects, Critical concerns have been concluded by interview from private sectors, public agencies as well as PPP housing residents. The result from this interview is that most private sectors think it is not profitable to involve in subsidized projects. To identify the possible risks in PPP housing projects, risks could be gleaned from literature review and added by the experts who have been involved in PPP housing projects. Later, these identified risks would be scored based on the 5-point Likert Scale in the questionnaire (Ke et al., 2010). To analyze the data, mean score method was used for comparison and evaluation, thus the critical risk factors could be determined.

## **4. Conclusion and recommendation**

The potential benefits of introducing new financing models for low-renting housing are sizable and predictable, albeit the implementation may be quite challenging. This study helps to relieve the pressure of insufficient housing funds for the government. Meanwhile, it hopefully provides appealing capital investment channels for private sectors if the risk allocation and benefits terms are settled properly, thus helping to maximize the social benefits and effectiveness.

Still, there are several related issues to be tackled. To begin with, How to identify the critical risks that would play a key role in PPP project applied in Public Housing. Once risks have been identified, it is necessary to prioritize some of them. Meanwhile, how to balance the responsibilities between private and public partners needs to be specified. It will also be indicated in the allocation of risks and the methodology of dispute resolution in the contract established between the parties involved. (Abdul-Aziz and Kassim, 2010)

However, more research should be done to figure out a practical and effective risk allocation plan, game theory should be used to assist in deciding the risk-sharing mode, and risk mitigation plan would be presented by collecting suggestions from experts and literature survey. To further test risks allocation plan, a simulation scenario would be created to particularize each parties' responsibility. The process may encompass negotiation between public authority and selected public sectors to reach an initial agreement, and simulated contract would be made to give implications among real projects. Meanwhile, financial indicators should be used to make a financial assessment based on a win-win cooperation plan from the angle of public sectors. Also, the mean score method would be used to rank these risks identified.

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