



# A methodology for ex-post assessment of social impacts of an affordable housing project



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## A B S T R A C T

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Affordable housing projects are becoming increasingly important in China, and they have remarkable social impacts. Yet, there is lack of appropriate methodologies for ex-post assessment of those social impacts. This knowledge gap will be filled in by this paper through proposing a new methodology, containing 24 assessment indicators in 3 categories, i.e. socio-economic effects (SE), mutual adaptabilities (MA) and social risks (SR). Considering inter-relationships among categories and indicators, the Analytic Network Process (ANP) method is adopted to determine the respective weight of each category and indicator, followed by the fuzzy comprehensive evaluation-based assessment model. Then, the proposed methodology is exemplified with an affordable housing project in Nanjing city of Eastern China. The results show that the project has produced quite positive social impacts, and reveal the improvement directions at category level, where SE should be the emphasis and SR has the largest potentiality. At indicator level, reducing crime cases around the studied project, providing better communication and water supply facilities of the studied project and improving the outbound public transport of the studied project are pressing issues. Finally, this paper is concluded with possible future works.

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## Introduction

Although affordable housing has diverse definitions, it generally means housing deemed affordable to specified eligible households, whose housing needs cannot be met by the market. In China, traditional affordable housing emerged in the 1980s and mainly consisted of Economical and Comfortable Housing (hereafter ECH) and Cheap Rental Housing (hereafter CRH). Among them, ECH was built to be sold to urban lower-middle income households, while CRH was generally rented by urban lowest income households. According to the statement of the Ministry of Housing and Urban-Rural Development of China, the housing difficulties of 11.40 million urban lowest income households, as well as 3.60 million urban lower-middle income households, have been solved from 2006 through 2010.<sup>1</sup> However, the large scale and centralized construction of affordable housing projects in urban-rural fringes have

induced some significant social problems for local residents and surroundings, such as low quality of lives, high unemployment rate, poverty concentration, high crime rate, residential segregation and social inequity (Shi & Meng, 2013). Therefore, it is widely recognized that China's traditional affordable housing projects have made both remarkable positive and negative social impacts.

To improve traditional affordable housing system and stimulate domestic economic growth, as well as to achieve other socio-economic targets, public rental housing (hereafter PRH) was initiated in March 2009 and was assigned as the core of the new affordable housing system in many official documents like the 12th five year plan, which declared to produce some 36 million affordable housing units nationwide from 2011 through 2015.<sup>2</sup> Such an ambitious plan has created numerous large-scale PRH projects. For example, the Chongqing municipal government has planned 21 PRH residential districts, and each of them would accommodate 30–50 thousand persons (Shi & Meng, 2013). Besides, these PRH residential districts are principally located in Chongqing urban-rural fringes and

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<sup>1</sup> See: [http://house.ifeng.com/pinglun/detail\\_2012\\_05/09/14409008\\_0.shtml](http://house.ifeng.com/pinglun/detail_2012_05/09/14409008_0.shtml).

<sup>2</sup> See: <http://money.163.com/11/0317/08/6VB7PLDA00254IU1.html>.

designed in almost the same styles (Long & Yin, 2011). As a result, it can be predicated that affordable housing projects in the post-housing reform era may generate more social impacts, and it is extremely urgent to manage such social impacts.

Unfortunately, social impacts are frequently neglected in the approval of affordable housing projects, while financial feasibility and environmental impact assessment (hereafter EIA) are generally considered by decision makers. The main reason is lack of quantitative assessment methodologies of such social impacts, although there are a few of guidelines on predicating the social impacts of a project. As for the ex-post assessment of social impacts of affordable housing projects, there are no enforceable regulations in China. At issue are always the intuitive magnitude indicators being used, such as initial building area, completed building area, number of units supplied and number of persons housed. With these glaring indicators, it will be taken for granted that affordable housing projects would induce positive social impacts, although significantly negative social impacts have been affirmed by a great deal of qualitative studies (Shi & Meng, 2013; Xia & Yang, 2012). Therefore, a methodology for ex-post assessment of social impacts of an affordable housing project is necessary, which would help identify the social impacts of an affordable housing project, to evaluate the social impacts quantitatively, to accumulate experience and lessons for future affordable housing projects, and to elevate the social sustainability of affordable housing system. For this reason, this paper aims at developing a methodology for ex-post assessment of social impacts of an affordable housing project, accompanied with a case study in Nanjing city, China.

## Literature review

The importance of identifying and assessing social impacts has well been recognized, and one example is the development and application of social impact assessment (hereafter SIA). According to Vanclay (2012), SIA is the process of managing the social issues of planned interventions (e.g. projects, policies, plans, and programs), and usually plays an important role in the project approval process, similar to EIA. Therefore, since it emerged in the 1970s in America, it has been practiced worldwide (Esteves, Franks, & Vanclay, 2012), although social impacts will vary from place to place, from project to project, and the weight assigned to each social impact will vary from community to community and even between different groups within a given community (Vanclay, 2002). For instance, Tilt, Braun, and He (2009) applies the tool of SIA to understand the effects of large dam projects on human communities, and the social impacts of a large dam principally include the migration and resettlement of people near the dam sites, changes in the rural economy and employment structure, effects on infrastructure and housing, impacts on non-material or cultural aspects of life, and impacts on community health and gender relations. Antonie (2010) analyzes the main trend of models for SIA in public sphere in general and propose a ten-stage procedure for the SIA in Romanian public administration, where social impact indicators can be classified into different types, like impact, net impact, efficiency, effectiveness, performance, etc. Vanclay (2012) presents a general case outlining the potential use of SIA in integrated coastal zone management with a case study of the Wadden Sea Region, where social impacts principally involve cultural heritage, unemployment, vulnerable communities. Aparcana and Salhofer (2013) propose a SIA methodology for recycling systems in low-income countries, which considers 3 social impact categories, 9 social impact subcategories and 26 semi-quantitative social impact indicators.

By comparison, SIA is not prevalent in international housing-related fields, and there has been little theoretical and practical attention to the social impacts of affordable housing projects, although social considerations are crucial for a responsible property investment (Hebb, Hamilton, & Hachigian, 2010). Current housing-related studies on social impacts are principally from the perspective of policy or city level, and very few of them are focused on project level. For instance, Wang, Wang, and Bramley (2005) assess the social impacts of Chinese housing reform in state-owned enterprises on different social groups, on the basis of the fieldwork carried out in four large cities. Monk, Tang, and Whitehead (2010) provide a review of current literatures relevant to the subject of the social and economic impact of housing, and analyze the social impacts of housing, such as poor health, educational inequality and antisocial behavior. Yau (2012) explores the social impacts of the official Marking Scheme for Tenancy Enforcement in Public Housing Estates on public housing tenants in Hong Kong, through a structured questionnaire survey. El-Anwar (2013) presents a methodology to maximize the positive social benefits of the construction of post-disaster alternative housing projects, where social benefits cover employment opportunities, safety of neighborhoods, access to public transportation, and access to essential utilities and services, etc.

However, there have been many studies involving social impacts of affordable housing policies and/or projects, although these studies use other terms, including social consequence, social mix, social isolation, social integration, social stigma and social problems. Arthurson (2008) is a good example, who examines the relevance of the concept of social mix through history by drawing on South Australian housing policy and the Salisbury North housing estate as a specific case study of social mix in practice. Griffiths and Tita (2009) draw on the concepts of social isolation to explain why violence rates are dramatically higher in public housing compared to other disadvantaged nonpublic housing neighborhoods and, moreover, whether residents or outsiders are responsible for the violence. Kleit and Carnegie (2011) investigate changes in social network homophily for both Vietnamese and English-speaking original residents of a public housing redevelopment site. Through in-depth interviews and field observations, McCormick, Joseph, and Chaskin (2012) find that public housing residents who have long experienced social stigma as members of an urban underclass will face new stigma in relocated mixed-income communities. Iben and Aduwo (2013) assess residential satisfaction in public housing in Ogun State (of Nigeria) on the basis of a questionnaire survey. Albright, Derickson, and Massey (2013) verify the municipal-level social consequence of an affordable housing development built in suburban New Jersey, from the perspectives of crime rate, property values and property taxes.

From above-mentioned literatures, it is evident that proactive SIA has been broadly adopted in the approval process of many types of projects except for affordable housing projects, although social issues are crucial for responsible housing investment. As regards the social impacts of affordable housing, most related studies concentrate on policy or city level but not on project level. In addition, many studies explore social impacts of housing (i.e. not only affordable housing but also other types of housing) policies and/or projects from various perspectives, like social assessment, social cohesion, social mix, social network and social stigma. Besides, a majority of above-mentioned studies are qualitative or semi-quantitative, although quantitative methodologies can provide definite results for assessment, decision and optimization. In brief, there is lack of quantitative methodologies for ex-post assessment of social impacts of an affordable housing project, and filling in such a knowledge gap is the objective of this paper.

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