# *SOCIAL-PSYCHOLOGICAL DETERMINANTS FOR THE ADOPTION OF GREEN RESIDENTIAL BUILDING: COMPARATIVE STUDY BETWEEN CHINA AND SINGAPORE*

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## Overview

Increasing attention has been put on green building to cope with climate change and energy crisis, both in China and Singapore. Much effort has been put in the "hard power" and achievements have been made in the green building related technology. However, there are some problems in the current situation. For example, the green building label evaluation system includes design stage label and operation stage label in china, the design stage labels account for up to 95%. It means that most of the building performance and energy consumption data are reported from computer software simulation with the input of building parameters.

Previous studies have been conducted on the barriers to the development of green residential building (GRB) and point out that residents' attitude and behaviors matter a lot. Residents are the driving force of the housing market and green behaviors are needed in green building, especially in building operating period. Few attention has been paid on public's attitude, behavioral adoption of GRB and energy conserving behaviors in the building. Delightfully, in Singapore, the authority has realized the importance of public behavior and planned to engage building owners, facility managers, tenants and occupants as well as the young to play a bigger role in Singapore's green building movement, which is written in the *3rd Green Building Masterplan*.

Singapore Government embarked on the green building movement by launching the BCA Green Mark scheme in 2005, while China issued the first national evaluation standard for green building in 2006. They have similarities in the history of green building program but differences on the progress made, level of economic development, features of building and construction development. So it is interesting to make a comparison because the social-psychological aspects of the general public, which is invisible, may matter in explaining why policies could result in different effect in different social contexts. Moreover, drawing experiences from the other countries without considering the background, especially "soft" foundation for the application, the expected policy effect in theory would not occur in practice.

The comparisons cover the level of knowledge about GRB, perceived benefit of the residential building, social trust about the green building evaluation and participating parties, environmental attitudes, and willingness to pay(WTP) for GRB (or behavioral intention to buy). The relative role of predictors on WTP will be discussed, which can provide some implications for incentive policies to promote the green building development.
Research questions are:

1. Which social and phychological factors may have impacts on the acceptance of green buildings?
2. How about the level of stakeholders' knowledge about the conception, significance of green buildings ? How do they get the knowledge? Do they aware of the government green building related scheme? Is the green building knowledge a barrier or motivator for the promotion of green buildings?
3. To what extent do people perceive the social and individual benefits of green building? Which is more important to enhance the acceptance, social benefits or individual benefits?
4. Does the proenvironmental attitude play a role? If yes, which demographic factors may influence the proenvironmental attitude?
5. Which information is needed to convey to the stakeholders to promote the green building acceptance?
6. How can policymakers target different groups of people and take customized measures to promote the development of green buildings?

## Methods

Tianjin city, where the Sino-Singapore Eco-City located, is chosen as representative city in China. Two surveys are conducted in Tianjin and Singapore to collect data.

Non-parametric test will be used to test whether there are statistically significant differences in terms the variables studied in the two cities.

Regression models are applied to examine the cause-effect relationship between predictors and willingness to buy.

A comparative review on the incentive policy portfolios in both countries are conducted

## Results

In china, the survey data indicated that the level of residents' knowledge about GRB is relatively lower, so is the trust, which two can be recognized as psychological barriers for the promotion of GRB in China, in addition, perceived benefit and NEP was found having important impact on the WTP.

The survey in Singapore is in progress.

## Conclusions

More effort should be put to raise awareness of the green buildings' benefits.
Policy intervention will be more effective if authorities can get the trust from the general public.

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