

EMPIRICAL STUDY ON CONSUMER UNDERSTANDING AND SATISFACTION FOR SUBSIDIZED HOME INSULATION PERFORMANCE

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Introduction

- It is generally known that Japanese homes have shorter lives than those in foreign countries.

One reason

- The Japanese government provides at least as much in subsidy payments for the insulation costs of new homes compared to insulation repair costs of existing homes.

But

- The insulation repair of existing homes is an important issue in CO₂ reduction.
- Prioritizing subsidies for existing homes over those for new homes is desirable because of the expected effect and volume.

- Existing home owners cannot benefit from preferential interest rates, loan tax cuts or additional financing.

Subsidy is important for CO₂ reduction

- One such subsidy was the “housing eco-points system” that was in place from 2010 to 2012 in Japan.
- The housing eco-points system had some unique characteristics.
 - One such characteristic was a self-assessment system that consumers carried out during the subsidy application process.
- This study aims to contribute to discussions on energy conservation subsidy policies.

There are two hypotheses used in this study

Hypothesis 1

- One is that consumers living in existing homes have an understanding of the performance of insulation repair, and thus their satisfaction would be higher .

Hypothesis 2

- The other is that consumers who are exposed to the “learning effect” will begin to be more conscious about energy conservation.

The housing eco-points system in Japan

- The housing eco-points system was a subsidy program in Japan with the following 5 characteristics.
 1. There were two subsidy periods
 - a. From Jan. 2010 to July 2010 (the former half)
 - b. From Nov. 2011 to Oct. 2012 (the latter half)
 2. The purpose of two were different
 - a. The former half was economic stimulus.
 - b. The latter half was as reconstruction aid for the Great East Japan Earthquake.

3. The budget of the subsidy was limited

When the budget was spent, the program ended even before the end of the subsidy period.

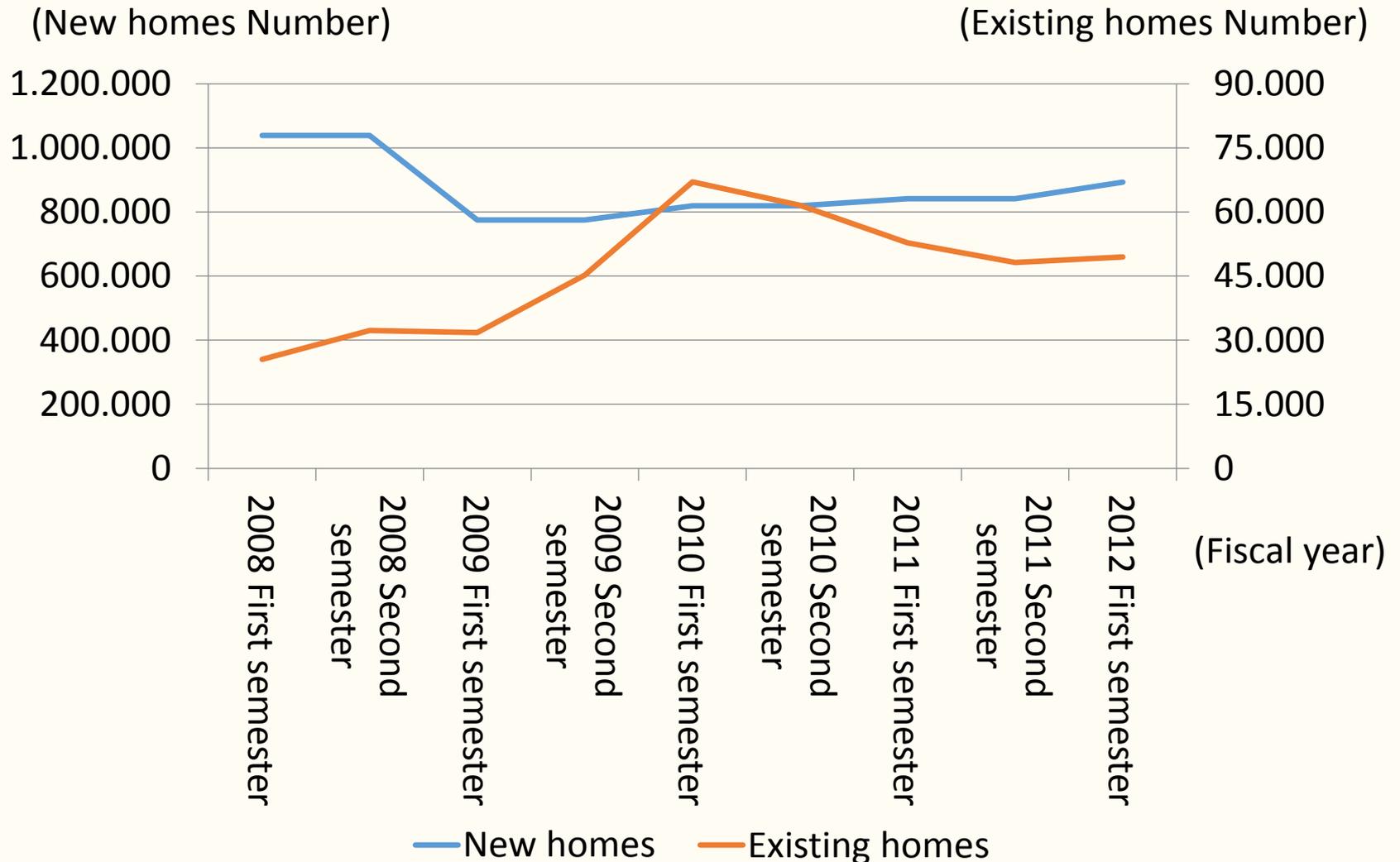
4. The self-apply

To benefit from the subsidy program, consumers had to carry out a self-apply.

5. It was already familiar to consumers

The housing eco-points is similar to the home appliance eco-points system.

- The number of insulation repairs in existing homes was much higher during the housing eco-point subsidy periods.



Data and Methodology

Data

- This study conducted an online survey.
- Consumers who had benefitted from the housing eco-points system.
- The purpose was to investigate consumer awareness about and satisfaction with the eco-points system.
- Durations
 - Pre-investigation duration: February 4-6, 2014
 - Final investigation duration: February 8-10, 2014

Online survey contents

- 1) Degree of comprehension of the housing eco-points system
- 2) Application content
- 3) Change in consciousness and awareness after receiving the housing eco-points
- 4) Satisfaction of the housing eco-points system
- 5) Information about the residence

27 questions

- The number of the effective answers was 1,007
 - 50.3% (507 samples) was for new homes
 - 49.7% (500 samples) was for existing homes
- The recovery rate of this survey was 80.3%.

Methodology

- The logistic regression analysis is based on the following equation.

$$Y = \beta_0 + \sum \beta_i X_i + \varepsilon$$

- Y is a binary variable.

Model #1

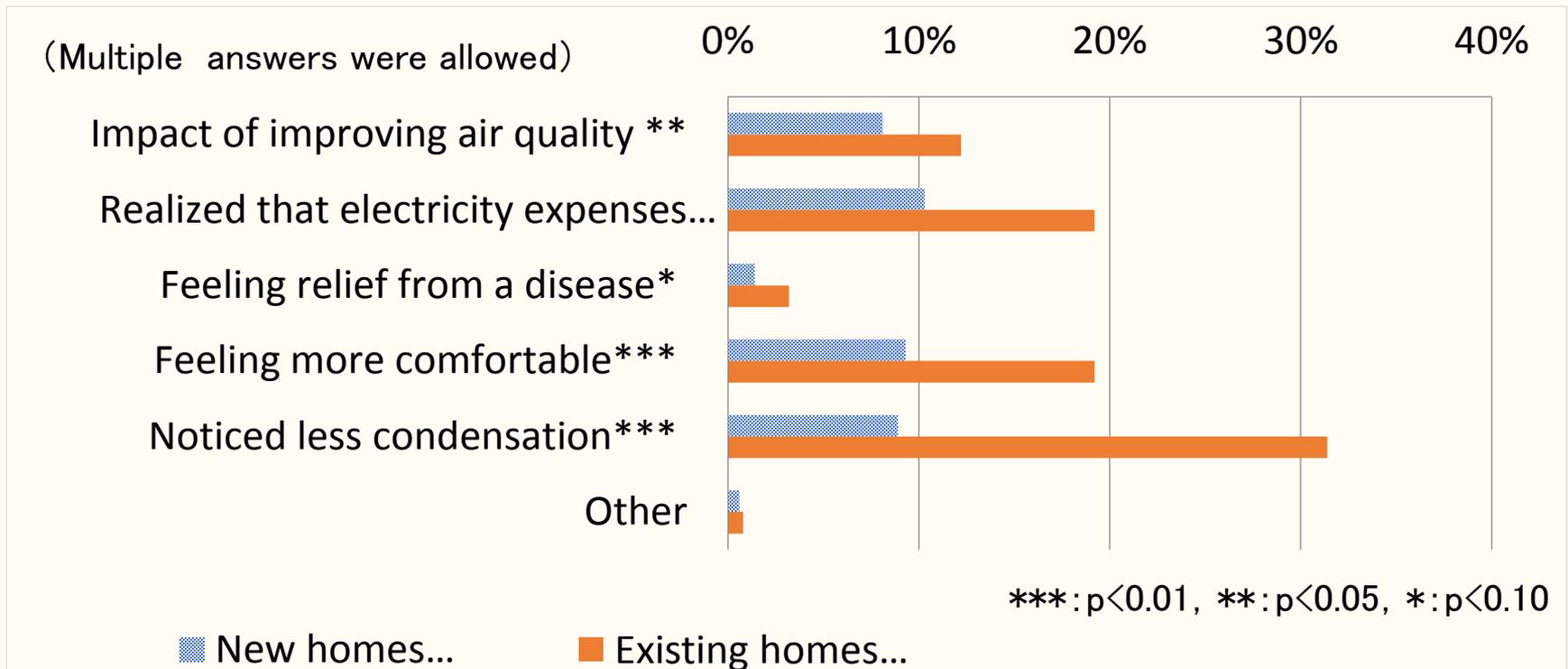
Satisfaction or no satisfaction with the eco-points system

Model #2

Whether began to think about energy-saving or not after comprehension of insulation performance.

The analysis results

- The study found that people who live in existing homes that required insulation repairs significantly acknowledged the effects of the insulation.



Model #1

Positive influence on satisfaction

- Newly built home dummy
 - Understanding of insulation
 - Former half dummy
 - Applying by oneself dummy
 - Understanding of energy conservation standards
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- Greatly increased the satisfaction level.
 - The new homes was 2.01 times higher than existing homes.
 - Understanding of energy conservation standards was 1.59 times.

- Hypothesis 1 is rejected.

Hypothesis 1

- One is that consumers living in existing homes have an understanding of the performance of insulation repair, and thus their satisfaction would be higher .

Results

- The consumers in new homes were more satisfied.
- And the people of former half were more satisfied.
- Because they received a higher amount of payment from the housing eco-points, which strongly influenced consumer satisfaction.

Model #2

Positive influence on thinking about energy saving

- Understanding of insulation
- **Felt attention to the environment**
- Understanding energy conservation standards
- Applying by oneself
- Realized that utility expenses became cheaper

Negative influence on energy saving

- Without knowing the subsidy condition

- **The odds ratio is the largest with the consumer who has adequate awareness of environmental issues.**

- Hypothesis 2 is supported

Hypothesis 2

- The other is that consumers who are exposed to the “learning effect” will begin to be more conscious about energy conservation.

Results

- The consumers who are exposed to the learning effect become more conscious about energy conservation.
- This is because
 - “Understanding of insulation”
 - “Understanding of energy conservation standards”

Conclusions

- This study showed that improvements in the level of satisfaction on subsidized insulation performance were higher for people who live in new homes.
- This study found that respondents who understood insulation performance had a higher rate of satisfaction.
- The subsidies are not simply economic incentives.
- The consumers who are exposed to the learning effect become more conscious about energy conservation.
- Therefore, it is also important to consider how appropriate information is provided to consumers

When the government implements energy-saving subsidy policies is very important.