IMPACT OF ENERGY LABELS ON SELECTING HOUSES OF CONSUMERS: AN EXPERIMENT ON FLAMING EFFECTS OF INFORMATION

Mieko FUJISAWA, Kanazawa University, +81-76-264-5408, fujisawa@staff.kanazawa-u.ac.jp
Yukihide KURAKAWA, Kanazawa Seiryo University, +81-76-253-3972, kurakawa@seiryo-u.ac.jp

Overview

Energy labels express the energy efficiency level of houses and help consumers' decision makings. Many studies have verified that energy labels promote consumers' select of pro-environmental products (e.g., Grankvist et al, 2004, Bjerregaard and Møller, 2019). The energy labels are set to be displayed mandatorily in Japanese real estate advertisements soon. Effective energy labeling methods and designs need to be studied before the government mandates energy labeling.

This study aims to examine whether providing information on energy efficiencies of houses for consumers in some way such as energy labels affects their decision makings. Furthermore, by clarifying the effects of different information methods (framing), we intend to make specific suggestions on the design of energy labels.

Methods

Survey participants were extracted from a survey panel of an Internet research firm by two-stage random sampling. We first selected residents of the Tokyo metropolitan area (Tokyo, Saitama, Chiba, and Kanagawa Prefectures) in consideration of regional characteristics, and further narrowed our focus to those in their 30s and 40s, who are considered the main homebuyers in Japan (according to a survey by the Ministry of Land, Infrastructure, Transport and Tourism).Next, in the main survey, we randomly classified the subjects, using the control experiment method, into four groups: control group with no information disclosed, treatment group 1 with only text information, treatment group 2 with only label information, and treatment group 3 with both information. In addition, in order to identify differences in framing effects between buyers and prospective buyers of houses, we further classified each group into two, making a total of eight groups.

The preliminary survey was conducted from March 18 to 24, 2022, and the main survey from March 25 to 30, 2022. The sample size was 206 for each group, a total of 1,648. The main survey asked 19 questions, including a question about what is important to respondents when purchasing a house.

In the main survey, an experimental method was conducted in order to simulate the situation in which homebuyers actually search for houses; 12 photos were displayed on the screen as candidates for houses that match the subjects' desired location, and sujects were asked to select the most desirable house from these photos. For the house they chose from the 12 photos, the subjects in each group select one of three options varying in energy efficiency level, price, etc. The prices of houses actually purchased or prospective budgets for new houses, were confirmed for each subject in the preliminary survey, and the house prices displayed on the screen are consistent with these price ranges. These steps are very similar search of consumers for houses, and we set up this experiment based on Sussman et al. (2021).

Through the above survey, we verified what kind of framing would encourage respondents to choose energy efficient houses. This also allows us to measure difference in effects of information framing between buyers and prospective buyers of houses.

Results

The results showed two important implications: one indicated the importance of disclosing information on energy efficiency of houses, another suggested necessity of devising information disclosure to supplement inexperience

Figure 1 shows the percentage of subjects in each group who selected energy-saving houses. The control group without energy efficiency information had the lowest percentage of respondents who selected energy-saving houses for both homebuyers and prospective homebuyers; that is clearly different from the treatment groups with disclosing energy efficiency information in some way. The percentage of subjects who selected energy-saving houses was the highest in the treatment group 3, suggesting that framing with a combination of textual and label information is highly effective in encouraging consumers to select energy-saving houses. In the treatment group 1, which had only textual information, the same or similar percentage of subjects as in the treatment group 3 selected energy-saving houses. On the other hand, in the treatment group 2 with only label information, the proportion of subjects who selected energy-saving houses was smaller than in the other two treatment groups.

Comparing homebuyers and prospective homebuyers, the homebuyers were more likely to select energy-saving houses in all groups. It can be inferred that homebuyers selected desirable houses in the survey based on their actual experiences with running costs and indoor temperatures of their houses, and that led to such result. Conversely, it needs to promote devising information disclosure to supplement inexperience for prospective homebuyers. Disclosing information on the running costs of houses would also be effective to encourage consumers to select energy-saving houses.
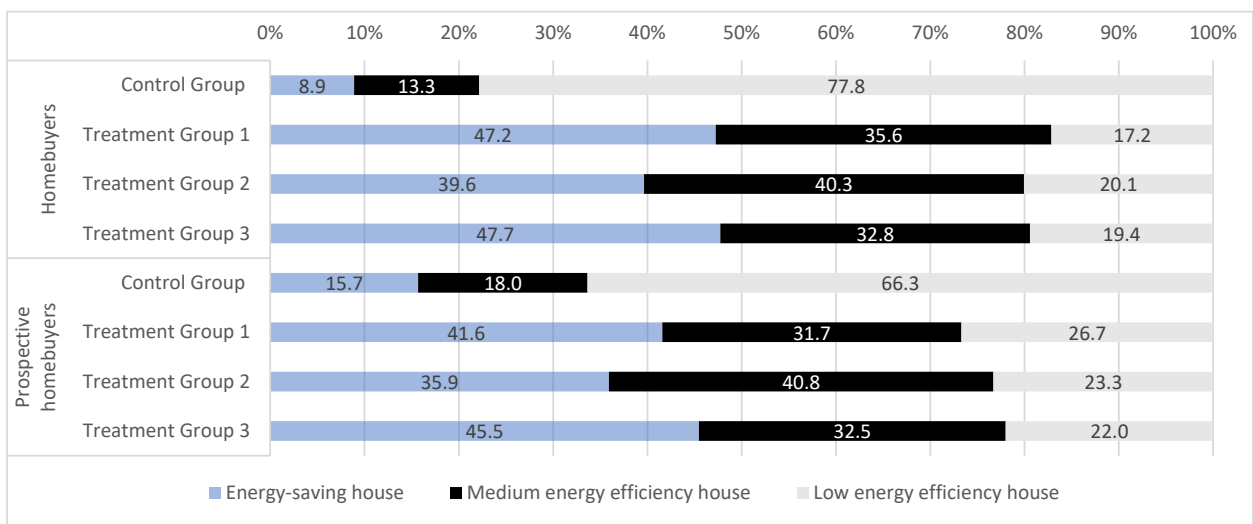

Figure 1 the percentage of selecting energy-saving houses

Conclusions

From results of the experiment, it was confirmed that disclosing energy efficiency information of houses in some way in real estate advertisements is effective in encouraging consumers to choose energy-efficient houses. It was also suggested that when disclosing information about energy efficiency of houses, it is also important to present it in a way that would be better understood by consumers depending on their respective situations.

Mandatory disclosure of residential energy efficiency information, which has been postponed in Japan, would be necessary as soon as possible. Prior to legally mandating the disclosure of information on energy efficiency, it would be necessary to introduce some kind of system to encourage the disclosure of information.

References

Grankvist, G., Ulf Dahlstrand, U., & Biel, A. (2004). The impact of labelling on consumer preference: negative vs. labels. Journal of Consumer Policy, 27, 213–230.

Bjerregaard, C., & Møller, N. F. (2019). The impact of EU's energy labeling policy: An econometric analysis of increased transparency in the market for cold appliances in Denmark. Energy Policy, 128, 891–899.

Sussman, R., Conrad, S., Kormos, C., Park, C., & Cooper, E. (2021). Context and meaningfulness in energy efficiency labeling: Real estate listings. Journal of Environmental Psychology, 78.