

Green nudge messages and information-collection behavior of wineries: field experiments in Japan

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1. Introduction

Climate change poses an urgent threat to the agriculture, food, and beverage sectors. However, it is not easy for farmers and producers to take action to reduce carbon emissions compared to adaptation. How can we encourage these actions? What are the factors affecting these actions?

In this paper, we study the decisions of 376 Japanese wineries to participate in webinars on life cycle assessment (LCA). LCA allows wineries to understand their climate footprint, pinpoint opportunities for climate change mitigation, and track the impacts of emissions reductions over time. Therefore, for wineries, clarity on how much they are emitting at each stage of production would be the first step toward GHG (Greenhouse Gas) reduction. We observe whether these wineries participate in two webinars conducted in 2022 and 2023. The primary objective of this paper is to understand the characteristics and factors affecting the behaviors of wineries.

In addition, we investigate the impact of a nudge message that is designed to encourage their participation in the webinars. We apply the idea of “Leadership by Examples”: it arises when individuals make sequential decisions, and the choice made by the first mover (the leader) influences the contributions of others (Jack and Recalde 2015; Gächter and Renner 2018). Previous studies have shown that the message that uses this idea encourages the private provision of public goods by individuals.

2. Methodology

We used a natural field experiment for almost all registered wineries in Japan. First, we tried to enumerate all wineries in Japan using multiple information



Figure 1. Nationwide location map of wineries

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sources. Then, in March 2022, we conducted a mail survey to those wineries as a baseline survey. Cleaning procedures left us with 376 wineries as the subject of our randomized controlled trial that covers almost all the wineries in Japan (Figure 1).

Then, we conduct a block randomized controlled trial for those wineries to evaluate the impact of the nudge intervention on participation in the seminars: the control group receives normal climate-related information and the treatment group receives the information with the “Leadership by Examples” flyer in August 2022. Our outcome variables of interest include (a) the number of registrations to the webinars, and (b) the number of participations in the webinars. These series of webinars were organized by our research team, in which we reported the results of the above baseline survey, and experts explained the LCA practice in wineries.

3. Results and Conclusion

We find that 16% of the wineries registered for the webinars at least once, and 11% participated. Newer and larger wineries are more likely to participate in the webinars. Counter-intuitively, wineries that are highly aware of ongoing climate change are less likely to participate. These wineries may have already given up on climate change mitigation and are more interested in adaptation. Furthermore, we attempted to use a nudge message to encourage participation. We adopted the “leadership by example” concept and introduced a leading winery that had already purchased green electricity and was also awarded by national and local authorities as a good example of environmentally friendly management. However, this treatment does not encourage participation; we even find a negative effect on wineries close in distance to the leading winery. This may be because public praise of environmentally advanced competitors in the same region may have demotivated other wineries. Furthermore, the image of the mega-solar power plant used by the leading winery in the flyer may have created a mixed impression of wineries. Thus, nudges can be weak and sometimes backfire, as corporate decision-making is more complex than that of individuals. Careful field surveys and policy design are required to advance climate change mitigation in this sector.

Reference

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