Does future design induce people to make a persistent change to sustainable food consumption?

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Climate change substantially threatens ecological systems, intensifies severe weather events, reduces biodiversity and presents complex risks to our current societal framework (ONeill et al., 2017). It is crucial whether or not people make sustainable food consumption (SFC) for resolving climate change, health and environmental problems as well as achieving SDGs. There are several studies that have examined the determinants of short-term or immediate changes in food consumptions (Vecchio and Cavallo, 2019, Thogersen, 2000). However, little is known about what encourages people to make a sustained shift to SFC. This research considers a future design (FD) approach where people are asked to think of a problem and take actions through taking a perspective of future generations, investigating the question ``how does the FD approach impact food consumption?'' and the hypothesis ``FD induces a lasting shift to SFC.''

We employ a social experiment with three treatments of ``baseline,'' ``deliberation'' and ``FD,'' collecting data on organic and nonorganic vegetable consumptions with 300 households in Bangladesh over three months (figure 1). We chose Jashore and Jhenaidah as our study areas and they are located in the south-western region of Bangladesh. The study areas are recognized as a regional center of agriculture, particularly, vegetable production (BBS, 2022). People's sociodemographic and ethnic profiles in the two areas are homogeneous and close to the country's average (BBS, 2020).

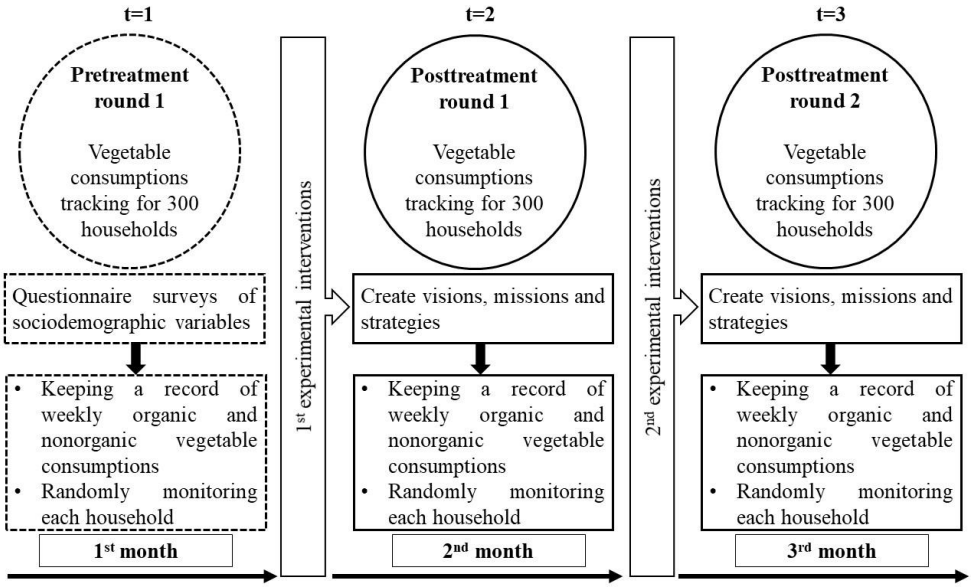

Figure 1: The temporal flows of experiments over three rounds, pretreatment round 1, posttreatment round 1 and posttreatment round 2

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In baseline, households report the consumptions. In deliberation, they additionally deliberate among their family members to think of a vision, a mission and a strategy for the consumptions. In FD, they additionally take each perspective of past, current and future generations and then deliberate to think of the same issues. The experimental panel data over three rounds of t = {1,2,3} from 300 households are organized and utilized for the statistical analyses, consisting of organic vegetable consumptions (OVCs), nonorganic vegetable consumptions (NVCs), treatment dummies and sociodemographic variables. To estimate the treatment effects, we apply a difference-in-difference (DID) method with multiple-time periods which is one of the most popular approaches to evaluate causal treatment effects.

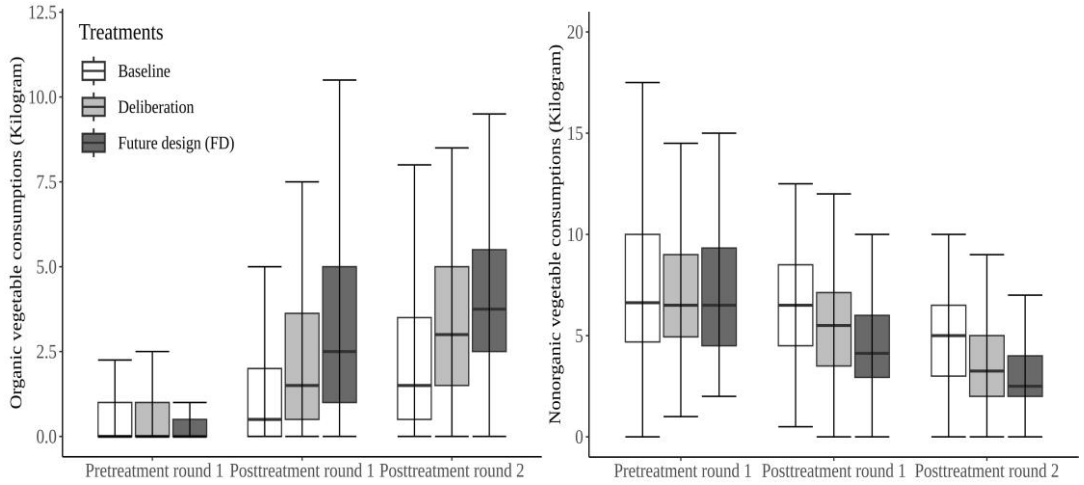

Figure 2: Boxplots of households organic and nonorganic vegetable consumptions in three rounds

It is evident from the summary statistics that the random assignments of the treatments through sampling processes are effective enough and households vegetable consumptions (organic and nonorganic) get different as time goes from pretreatment round to posttreatment rounds (figure 2). We quantify the difference and check its robustness across the treatments through DID and two-part models, respectively. The result indicates that FD affects people to have a sustained increase in organic and decrease in nonorganic vegetable consumptions as compared to any other treatment, and the effect under FD is approximately twice as much as that under deliberation in magnitude and in each round. Overall, FD demonstrates a great potential for inducing people to make a persistent change to SFC.