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Modelling decisions to improve food environments for vulnerable urban communities in hanoi, Vietnam

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Abstract

The Nutrition Intervention Forecasting and Monitoring (NIFAM) project applies transdisciplinary decision analysis to support sustainable food environments and improve nutrition outcomes in Vietnam. Using structured decision framing, NIFAM identified a mobile safe vegetable point-of-sale on factory campuses as a promising intervention to improve food environments for vulnerable urban communities in Hanoi. In July 2024, we implemented a single instance of this intervention as a pilot. We worked with Bac Hong Farmers Cooperative at Garment Corporation 10 (GARCO 10) in Long Bien District. As we supported the operation of the mobile safe vegetable point-of-sale, we observed various internal and external factors influencing its outcomes. External factors included weather variability, competition from street vendors, and fluctuating organisational support. Internal factors included workers' demand, company motivation, and labour union influence. For the cooperative, key variables included supply capacity, choice of selling methods, and technical skills. We apply this case to validate and refine our existing probabilistic decision model, assessing the potential scalability of the intervention for sustainable food environment outcomes across the city. To capture the complex, multi-layered nature of decisions in this context, we use a decision-analysis approach that considers interconnected decisions across multiple actors, including cooperatives and private companies. It captures the cascading effects of choices at different levels, reflecting the dynamic and context-dependent nature of food environments. The decision to invest in a mobile point-of-sale depends not just on the cooperative's financial capacity but also on the support from companies and workers' purchasing behaviour. We are also exploring the implications of broader policy incentives at the city scale. By integrating behavioural insights and transparent communication of model results, our case study advances the decision analysis toolkit for sustainable food environment interventions. It offers a practical framework for addressing complex, multi-actor decision-making challenges at scale and provides evidence to inform future policies for urban food environments serving vulnerable communities.

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