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Editorial: Behavioral economics in household decisions related to sustainability and innovation

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Editorial on the Research Topic

Behavioral economics in household decisions related to sustainability and innovation

Introduction

Behavioral economics has emerged as an influential theoretical framework for analyzing household decision-making processes that impact environmental sustainability, social equity, and economic wellbeing (Frederiks et al., 2015; Nielsen et al., 2024). Moving beyond classical assumptions of rational decision-making, behavioral economics acknowledges that household choices are influenced by psychological, cognitive, emotional, cultural, and social factors (Brand-Correa et al., 2022). These insights are particularly critical in the sustainability domain, where adoption of new technologies, consumption of environmentally friendly products, and shifts in daily practices often face barriers rooted in behavioral tendencies and contextual constraints (Singh et al., 2024).

This special topic combines five articles that present new perspectives on how households worldwide make decisions affecting sustainability outcomes. The contributions cover various contexts, including China, Ghana, Canada, India, and Japan, and focus on different areas such as energy use, food consumption, agricultural innovation, and responses to environmental crises. Overall, the studies emphasize the complex nature of household decision-making and highlight the importance of incorporating behavioral insights into policy design and program implementation.

Overview of the articles

McRae and Dube examine how cognitive biases affect household food choices. By analyzing weekly purchases of plant-based beverage brands in Quebec, Canada, the study reveals that promotions varying in prominence, recency, and frequency interact with availability bias to influence consumer behavior. The results show that flier promotions with high prominence, recency, and frequency are most effective at increasing plant-based purchases, while mobile promotions offering bonus loyalty points are particularly

impactful. However, frequent promotions also increase price sensitivity, which could pose challenges in maintaining demand. This research adds to the literature by demonstrating that the “out of sight, out of mind” effect plays a significant role in sustainable food consumption. By carefully designing promotional strategies that account for availability bias, policymakers and retailers can enhance the adoption of plant-based foods while mitigating unintended consequences, such as price anchoring.

Ding et al. examine how digital platforms can foster environmentally responsible behavior. Using the Attitude–Context–Behavior theory and analyzing survey data from Ant Forest users, their study demonstrates that intelligent technologies, combined with contextual factors such as media campaigns and policy regulations, positively influence low-carbon actions. Importantly, these effects operate through attitudinal mediators, with self-efficacy and pro-environmental awareness strengthening the influence of contextual cues. This article highlights the potential of technology-enabled ecosystems to integrate sustainability into everyday consumption choices. It suggests that while technological innovations can create supportive environments, the lasting success of such platforms relies on strengthening attitudes and internal motivations for sustainability.

In their study, Rajendra Timilsina et al. examine long-term changes in household fuel use in India using three waves of the National Family Health Survey. The analysis reveals gradual but uneven shifts toward cleaner fuels such as liquefied petroleum gas. While households with higher income and education levels increasingly adopted cleaner energy, rural households, the poorest segments, and women-headed households remained disproportionately reliant on biomass fuels. From a behavioral economics perspective, the study highlights how structural and social inequalities constrain households’ energy choices. Clean fuel adoption requires not only affordability and accessibility but also overcoming behavioral inertia, risk perceptions, and traditional practices. The findings support targeted subsidies, educational programs, and infrastructural investments to ensure that cleaner energy transitions are inclusive and equitable.

Eun investigates how natural disasters, such as earthquakes and tsunamis, affected household food choices and, consequently, greenhouse gas emissions in Japan. The study reveals that Japanese households reduced fish consumption while increasing beef consumption following the disaster, leading to a measurable rise in food-related CO₂ emissions. This article illustrates how exogenous shocks can reshape consumer behavior in ways that inadvertently exacerbate environmental pressures. It also illustrates the interconnection between risk perception, cultural preferences, and sustainability outcomes. The findings underscore the need for resilience-oriented policies that anticipate how households may adapt to crises, ensuring that such adaptations align with long-term sustainability goals.

Lastly, Abdallah approaches from a production perspective, examining how farming households accept training to boost productivity in Ghana. The study examines the impact of training provided by large-scale private investors on rice yields, farm income, and food security among smallholder farmers. Using dose–response and marginal treatment effect models, it finds rice yields peak after relatively brief training, while household income

and food security benefits appear with longer exposure. Beyond certain points, additional training offers diminishing returns. These findings highlight that adopting sustainable agricultural practices depends not only on access but also on tailoring interventions to households’ capacity to absorb and utilize information.

Conclusion

This Research Topic advances the study of household decision-making through the lens of behavioral economics, offering insights that are both academically significant and practically relevant. The contributions enrich the understanding of the complexity of household choices around energy, food, and technology (Ahmad et al., 2023; Kastner and Stern, 2015; Palojoiki and Tuomi-Gröhn, 2001). The contributions align with the existing literature on the impact of psychological biases, contextual enablers, structural constraints, and external shocks on household decisions (Korteling et al., 2023; Taberna et al., 2023; van der Kroon et al., 2014). Whether through digital platforms in China or agricultural training in Ghana, contextual enablers play a crucial role in shaping household decisions. However, their effectiveness depends on alignment with households’ psychological and attitudinal dispositions. Availability bias in Canada and attitudinal mediation in China demonstrate that cognitive and emotional factors are central in determining how households adopt sustainable practices. Policies that leverage these biases are more likely to succeed. Findings from India and Ghana highlight how socioeconomic disparities—by income, education, or geography—continue to limit households’ ability to participate in sustainability transitions. Addressing these inequities is crucial for achieving large-scale social change. The Japanese case illustrates how crises can redirect household behaviors in ways with unintended environmental consequences. Understanding and preparing for these dynamics is an emerging frontier in behavioral economics and sustainability research (Brand-Correa et al., 2022).

For policymakers and practitioners, the results of the studies reveal that sustainable transitions will require not only technological innovation and economic incentives but also interventions grounded in behavioral insights and tailored to household realities. By integrating behavioral economics into sustainability research and policy design, we can better understand the drivers of household behavior and craft strategies that promote both environmental and social wellbeing.

Author contributions

JL: Conceptualization, Writing – original draft, Writing – review & editing. WZ: Conceptualization, Writing – original draft, Writing – review & editing.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial

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