

Is All Fair in Sustainability Policy? Heterogeneous Consumer Responses to a Single-Use Plastic Tableware Policy and Repeal

Stav Rosenzweig
Ben-Gurion University of the Negev

Cite as:

Rosenzweig Stav (2026), Is All Fair in Sustainability Policy? Heterogeneous Consumer Responses to a Single-Use Plastic Tableware Policy and Repeal. *Proceedings of the European Marketing Academy*, 55th, (134289)

Paper from the 55th Annual EMAC Conference, Bath, United Kingdom, June 2-5, 2026



Is All Fair in Sustainability Policy? Heterogeneous Consumer Responses to a Single-Use Plastic Tableware Policy and Repeal

We examine an environmental tax on single-use plastic tableware that was implemented and then repealed one year later. Using retail panel data and a difference-in-difference-in-differences design, we compare purchasing patterns of the general population in a small OECD economy country, with a high-traditionality group that perceived the tax as disproportionately burdensome. The policy reduced single-use tableware purchases overall, and this reduction persisted after repeal, partly due to sticky post-tax prices. However, purchases of high-traditionality consumers decreased more during the tax period but increased significantly after repeal. The post-repeal increase is consistent with consumer reactance theory, whereby individuals who view a policy as unfair may over-purchase once restrictions are lifted to express dissatisfaction with the original policy.

Keywords: Sustainability policy, Consumer response, Fairness

Track: Social Responsibility & Ethics

1. Introduction

Research on consumer reactions to environmental policies has grown substantially in recent years and shows that, in many cases, consumer reactions diverge from policymakers' expectations, generating unintended consequences (Stereu et al., 2022). Policymakers' recognition of the need for environmental policies offers an opportunity to address inequality in how environmental benefits and burdens are distributed among market players (Spurlock et al., 2022). At the same time, scholars contend that broader fairness and social-justice considerations are frequently sidelined in environmental policy formulation decisions (Sovacool et al., 2016). They also suggest that The rise of environmental-policy action calls for timely scholarly attention and explicit engagement with environmental challenges (Nyberg & Wright, 2022). As evidence from recent studies highlights that the effectiveness of any tax policy ultimately depends on public acceptance (Duncan et al., 2020; Hammerle et al., 2021), it is vital to understand which tax-related sustainability policies would resonate with individuals and communities and garner support.

Over the past few decades, numerous countries have introduced environmental taxes to curb single-use plastic consumption. Motivated by growing concern over plastic pollution and the desire to steer consumer behavior, governments across have implemented charges on plastic bags, tableware, and packaging (Steinhorst & Beyerl, 2021). In 2021, the European Union further tightened regulation by prohibiting selected single-use plastic tableware products and promoting the use of taxes or outright bans.

In this context, we examine a sustainability policy that taxed single-use plastic tableware and was repealed one year after implementation. We seek to answer the following research questions: (1) What is the effect of implementing and then repealing such a policy on purchasing patterns? and (2) Is there heterogeneity in consumers' responses to its repeal, and if so, what are the plausible mechanisms?

2. Literature

2.1 Policies promoting sustainability

Sustainability appeals elicit consumer responses shaped by awareness, political identity, and group-specific interpretations, which can sometimes lead to unintended reactions (e.g., Alvarado et al., 2022; Kidwell et al., 2013). In the same vein, sustainability-oriented public

policy measures are often perceived by different consumer segments either as legitimate welfare goals or as coercive and highly undesirable. This tension is particularly pronounced for tax-based interventions aimed at changing consumer behavior, especially purchasing habits (Chan & Lin, 2022; Davidovic et al., 2020; Dillard et al., 2018). In particular, specific groups or communities may perceive such policy interventions as either explicitly targeting them or disproportionately burdening them relative to other segments of the population (e.g., Kamin-Friedman et al., 2023).

2.2 Taxation policy measures

In recent years, many governments have imposed sustainability taxes on plastic items, including single-use tableware, in response to growing awareness of plastic pollution and with the aim of reducing their consumption (Steinhorst & Beyerl., 2021). These policies are typically presented as sustainability initiatives that support national environmental goals. However, when segments of the population perceive them as unfair, such measures may backfire and generate resistance and reactance rather than compliance (Chan & Lin, 2022; Falkenberg et al., 2022).

The introduction of a tax, as a policy tool intended to change consumer behavior, can trigger a range of reactions: changes in consumption habits, consumer resistance, feelings of reduced control and threats to personal freedom, as well as anxiety, frustration, anger, and even a desire for revenge (Gonzalez-Arcos et al., 2021; Irmak et al., 2020; Pham et al., 2024; Shahrasbi et al., 2024). Consumers also tend to dislike taxes beyond their direct economic impact and are often willing to invest time and effort to avoid paying them (Sussman & Olivola, 2019).

The impact of taxation on the consumption of harmful products—such as single-use items or health-damaging goods like cigarettes and sugary beverages—is not uniform. Taxing such products usually reduces their purchase and can also change buying patterns, for example by encouraging consumers to switch to substitute products or to buy in places where taxes are lower (Gonzalez-Arcos et al., 2021; Schmacker & Smed, 2020; Sussman & Olivola, 2019). While some countries report substantial reductions in the use of taxed products, the behavioral consequences of these taxes for consumers remain insufficiently understood (Pham et al., 2024).

2.3 Heterogeneous consumer responses to tax implementation and repeal

Unlike levying taxes, the repeal of taxes on harmful products is a relatively uncommon occurrence, documented only in a limited number of cases (Kamin-Friedman et al., 2023; Schmacker & Smed, 2020). The sense of relief that follows the repeal of a tax can help consumers cope with the negative feelings accumulated during the taxation period and restore their sense of freedom and control (Biraglia et al., 2021; Irmak et al., 2020; Sussman & Olivola, 2011).

One relevant mechanism is reactance, which refers to the psychological resistance consumers experience when restrictions are placed on their choices (e.g., Huang et al., 2025; Jonason & Knowles, 2006). When individuals feel that their freedom of choice has been constrained, they may respond by increasing their purchases of previously taxed products—even when they do not truly need them—as a way to reassert autonomy and signal opposition to the restrictions that were imposed (Irmak et al., 2020).

We argue that because different consumer segments perceive policy interventions differently, their responses to both implementation and repeal will also vary. When a taxation policy is seen as unfairly targeting a particular segment, it can trigger reactance. After the policy is repealed, this segment may then increase its consumption of the previously taxed product—more than segments that did not view the policy as especially unfair.

3. Methods

3.1 Research context

We examine differences in single-use tableware purchasing patterns following the implementation and subsequent repeal of an environmental policy that levied a tax on single-use plastic tableware. We analyze retail panel data to compare purchasing patterns between the general population and a high-traditionality group in a small OECD member country. High-traditionality households tend to be more religiously observant, have larger families, and, on average, lower incomes; they are also more likely to live in areas with higher concentrations of similar households and to shop at retailers that cater to their needs (e.g., product assortments, package sizes, certification standards). As such, high-traditionality individuals and households exhibit distinct consumption habits that are strongly influenced by their traditional norms (Kamin-Friedman et al., 2023; Leiter et al., 2022).

With the stated aim of reducing plastic waste and improving public health, the government instituted a tax on single-use plastic tableware in January 2022. The high-traditionality group opposed introducing the tax, arguing that it would impose a disproportionate burden on them. Owing to larger family sizes, these households routinely use greater quantities of single-use tableware to reduce dishwashing and cleanup time after family meals; as a result, they anticipated bearing more of the policy’s tax burden. Before and during the tax’s implementation, dissatisfaction was prominently expressed in both general-population media and outlets serving the high-traditionality group (Malovicki-Yaffe et al., 2025). Following elections and the formation of a new government, the policy was repealed in January 2023, one year after its implementation.

3.2 Data

We use national-level retail scanner data purchased from a large provider. Retailers are classified as serving the general population or catering specifically to the high-traditionality group. The panel spans October 2020–January 2024 with monthly observations of quantities purchased, covering 15 months pre-implementation and 12 months post-repeal; the unit of observation is category–population–month. The dataset includes nine single-use plastic categories subject to the tax (e.g., cups, plates, forks, bowls) and three exempt categories: paper napkins, trash bags, and dish soap.

3.3 Model and estimation

We employ a difference-in-difference-in-differences (DDD) design as our main identification strategy. Specifically, we track single-use tableware purchases over time (pre-policy, during the tax, and post-repeal) while contrasting taxed vs. exempt categories and the general population vs. a high-traditionality group; the pre-policy period and non-taxed products serve as controls. The full paper reports robustness checks using 2SLS with instrumental variables.

4. Results

Because the general population and the high-traditionality group differ in both the number of households and the number of individuals per household, we divide quantities by the national number of households in the main analysis and by the average number of individuals in each population in an additional analysis. We use official Central Bureau of Statistics figures for the number of households per population group and the number of individuals per household.

Table 1 presents the per-household estimation results. The quantities of single-use tableware purchased during the policy and after the policy repeal were negatively and significantly associated with the quantities sold ($\beta = -0.196$ during the policy, and -0.117 post policy repeal, $p < 0.001$).

This finding suggests that, overall, the tax policy reduced quantities of single-use tableware sold and that this effect persisted even after the policy was repealed. This latter finding could be the result of consumers internalizing the potential harms associated with single-use tableware and continuing to adjust their behavior even once the tax was removed, or of high retail prices remaining sticky and not returning to their levels prior to the policy implementation. Our data indicate that at least part of this result is due to the latter, which we empirically demonstrate in the full paper.

Focusing on the high-traditionality market segment, single-use tableware exhibits a large, positive, and statistically significant main effect ($\beta = 1.088$, $p < 0.001$). During the policy period, this effect becomes negative and significant for this market segment ($\beta = -0.080$, $p < 0.001$). More importantly, in the post-policy repeal period, the effect becomes positive and significant for this segment ($\beta = 0.007$, $p < 0.001$). These results suggest that, compared with the general population, purchases of single-use tableware by high-traditionality consumers decreased significantly during the policy period. However, once the policy was repealed, purchases of single-use tableware by high-traditionality consumers increased significantly compared with the general population. These findings are consistent with theories of consumer reactance, which suggest that consumers respond negatively to tax policies perceived as unfair, particularly when they target specific segments of the population. Given that prices of single-use tableware did not return to their pre-tax levels, this finding further indicates high-traditionality consumer reactance to the policy.

The model using the average number of individuals per household by group yielded similar results, with the exception of the high-traditionality coefficient, which was negative and significant ($\beta = -0.492$, $p < 0.001$). This is consistent with the notion that high-traditionality households likely purchase larger total quantities of the products examined, but the per-individual quantity is smaller because these households have, on average, more members.

Table 1. Single-use tableware purchases following an implementation and repeal of a policy

	Average purchases per household (SE)	
Single-use tableware (ln thousands of units sold)	-1.231***	(0.000)
During policy (yes/no)	-0.219***	(0.023)
Post policy repeal (yes/no)	-0.102**	(0.042)
Single-use tableware X during policy	-0.196***	(0.000)
Single-use tableware X post policy	-0.117***	(0.000)
High-traditionality (yes/no)	0.221***	(0.000)
Single-use tableware X high-traditionality	1.088***	(0.000)
During policy X high-traditionality	-0.059***	(0.000)
Post policy repeal X high-traditionality	-0.021***	(0.000)
Single-use tableware X high-traditionality X during policy	-0.080***	(0.000)
Single-use tableware X high-traditionality X post policy	0.007***	(0.000)
Fixed effects:		
Time (months)	✓	
Category	✓	
Category X policy	✓	
Category X population	✓	
Category X policy X population	✓	
Constant	4.699***	(0.023)
Observations	1,360	1,360
R ²	0.576	0.556
** $p < 0.05$, *** $p < 0.01$		

5. Summary

Taxes aimed at sustainability and environmental objectives are interpreted differently across social groups and, depending on the context, may be perceived as hostile or unfair.

Accordingly, the design and communication of tax-based measures must be sensitive to intergroup realities, perceptions, and traditions.

We find that, overall, the tax sustainability policy reduced quantities of single-use tableware sold, and this effect persisted even after the policy was repealed, likely reflecting a combination of consumers internalizing the harms of single-use tableware and sticky retail prices that did not return to pre-policy levels. Compared with the general population, purchases by high-traditionality consumers decreased significantly during the policy period but increased significantly after the repeal, despite these sticky prices. These patterns are consistent with theories of consumer reactance, whereby, after the policy is repealed, it backfires, namely, consumers may over-purchase single-use tableware as a way to express dissatisfaction over the original tax and to signal that they are now free to defy it.

References

- Adamou, A., Clerides, S., & Zachariadis, T. (2014). Welfare implications of car feebates: A simulation analysis. *The Economic Journal*, 124(578), F420–F443.
- Alvarado, M., Penney, T. L., Astbury, C. C., Forde, H., White, M., & Adams, J. (2022). Making integration foundational in population health intervention research: Why we need “Work Package Zero”. *Public Health*, 211, 1–4.
- Chan, E. Y., & Lin, J. (2022). Political ideology and psychological reactance: How serious should climate change be? *Climatic Change*, 172, 39.
- Davidovic, D., Harring, N., & Jagers, S. C. (2020). The contingent effects of environmental concern and ideology: Institutional context and people’s willingness to pay environmental taxes. *Environmental Politics*, 29(4), 674–696.
- Dillard, J. P., Kim, J., & Li, S. S. (2018). Anti-sugar-sweetened beverage messages elicit reactance: Effects on attitudes and policy preferences. *Journal of Health Communication*, 23(8), 703–711.
- Falkenberg, M., Galeazzi, A., Torricelli, M., Di Marco, N., Larosa, F., Sas, M., & Baronchelli, A. (2022). Growing polarization around climate change on social media. *Nature Climate Change*, 12(12), 1114–1121.

- Gonzalez-Arcos, C., Joubert, A., Scaraboto, D., Guesalaga, R., & Sandberg, J. (2021). How do I carry all this now? Understanding consumer resistance to sustainability interventions. *Journal of Marketing*, 85(3), 44–61.
- Huang, J., Daryanto, A., Hogg, M., & Chan, J. (2025). What drives participation in green loyalty programmes? Examining reactance, guilt, and staff attractiveness. *International Journal of Contemporary Hospitality Management*, 37(13), 1–54.
- Irmak, C., Sen, S., & Bhattacharjee, A. (2020). The psychological cost of taxation: When and why consumers prefer price increases to taxes. *Journal of Marketing Research*, 57(2), 239–255.
- Jonason, P. K., & Knowles, H. M. (2006). A unidimensional measure of Hong's Psychological Reactance Scale. *Psychological Reports*, 98(2), 569–579.
- Kidwell, B., Farmer, A., & Hardesty, D. M. (2013). Getting liberals and conservatives to go green: Political ideology and congruent appeals. *Journal of Consumer Research*, 40(2), 350–367.
- Leiter, E., Greenberg, K. L., Donchin, M., Keidar, O., Siemiatycki, S., & Zwas, D. R. (2022). Cardiovascular disease risk factors and health behaviors of Ultra-Orthodox Jewish women in Israel: A comparison study. *Ethnicity & Health*, 27(5), 1093–1106.
- Malovicki-Yaffe, N., Hameiri, B., Bloy, L., & Fishmen, R. (2025). Environmental taxation triggers persistent psychological resistance to climate policy. *Policy Sciences*.
- Pham, H. N., Thai, N. T., Heffernan, T. W., & Reynolds, N. (2024). Environmental policies and the promotion of pro-environmental consumer behavior: A systematic literature review. *Journal of Macromarketing*, 44(1), 30–58.
- Schmacker, R., & Smed, S. (2020). Do prices and purchases respond similarly to soft drink tax increases and cuts? *Economics & Human Biology*, 37, 100864.
- Shahrasbi, N., Rohani, M., Purmehdi, M., & Rajabzadeh Ghatari, A. (2024). Retaliatory consumer behavior in the context of brand transgressions. *Journal of Consumer Marketing*, 41(2), 123–137.
- Sovacool, B. K., & Dworkin, M. H. (2015). Energy justice: Conceptual insights and practical applications. *Applied Energy*, 142, 435–444.

Sovacool, B. K., Heffron, R. J., McCauley, D., & Goldthau, A. (2016). Energy decisions reframed as justice and ethical concerns. *Nature Energy*, 1(5), 16024.

Steinhorst, J., & Beyerl, K. (2021). First reduce and reuse, then recycle! Enabling consumers to tackle the plastic crisis – Qualitative expert interviews in Germany. *Journal of Cleaner Production*, 313, 127782.

Steren, A., Rubin, O. D., & Rosenzweig, S. (2022). Energy-efficiency policies targeting consumers may not save energy in the long run: A rebound effect that cannot be ignored. *Energy Research & Social Science*, 90, 102600.

Sussman, A. B., & Olivola, C. Y. (2011). Axe the tax: Taxes are disliked more than equivalent costs. *Journal of Marketing Research*, 48, S91–S101.