

Cigarette Litter as a Public Concern: Perceived Threat, Attribution of Blame, and Policy Preferences

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Our Goal

For California residents, determine:

- Their knowledge and perception of cigarette litter as an environmental threat
- Which parties they hold responsible for fixing the problem, and whether this is influenced by educational messages about cigarette litter
- The perceived effectiveness and level of support for potential policy solutions

Background

- Cigarette butts are the most commonly littered plastic item in the world, with an estimated 4.5 trillion butts littered across the world annually. These leach chemicals and break down into microplastics. Each butt takes 5-10 years to decompose.³
- Solutions to the problem of cigarette butt litter range from “upstream”, prevention-focused solutions² that address litter at the source to “downstream”, reactive solutions that are often labor-intensive and cost-ineffective.
- A 2017 survey of New Zealand residents¹ found that most considered cigarette butt litter harmful to the environment. After a short educational message about the environmental harms, more respondents were willing to increase the responsibility for reducing or eliminating cigarette butt litter to tobacco companies.

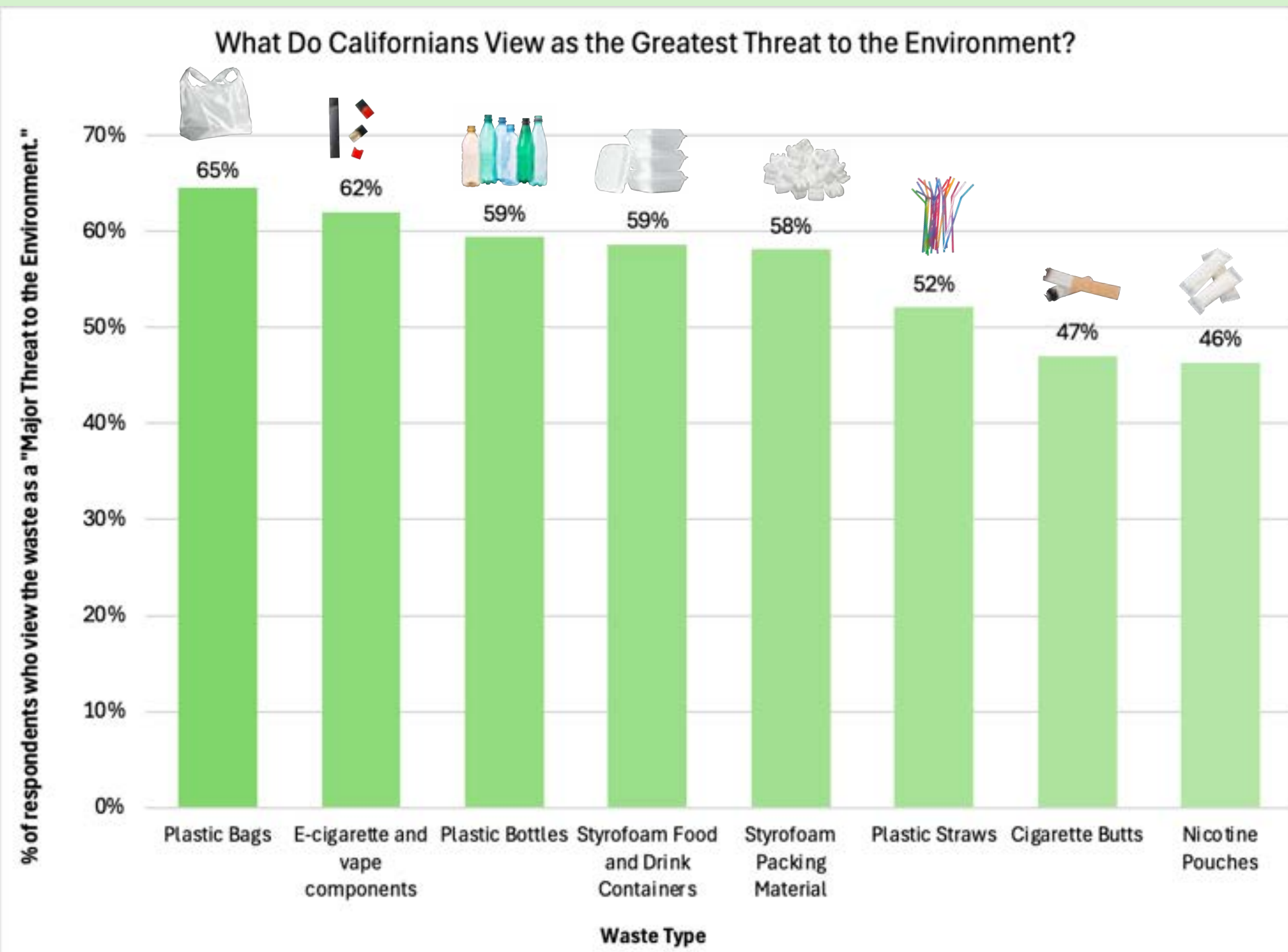
Methods

In February 2026, a 38-question online survey adapted from the 2017 New Zealand study¹ was distributed to residents of California (n=1,350) via Prolific.

Participants were asked to:

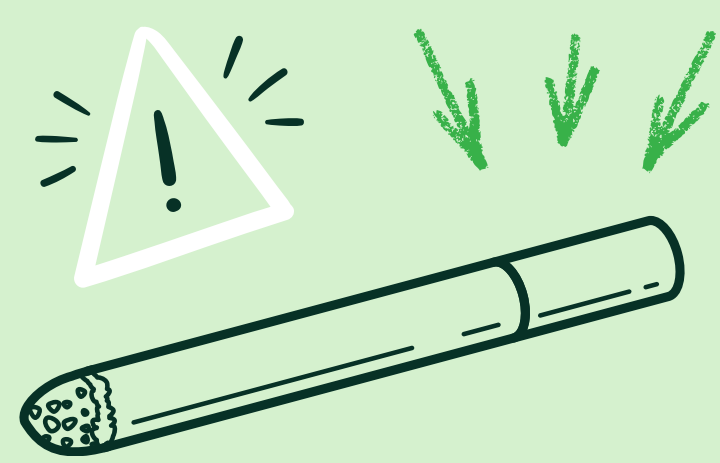
- Rate the environmental threat of various types of plastic waste and tobacco product waste.
- Answer standardized knowledge, attitude, and behavior questions about tobacco product waste’s impact on the environment.
- Rate the degree of responsibility of 6 different parties, before and after reading a short educational message on the environmental harm of cigarette litter.
- Rate 13 potential policy solutions, based on their perceived effectiveness and support.

Targeted messaging on the harms of plastic cigarette filters could strengthen support for producer responsibility & “upstream” policy solutions in California.



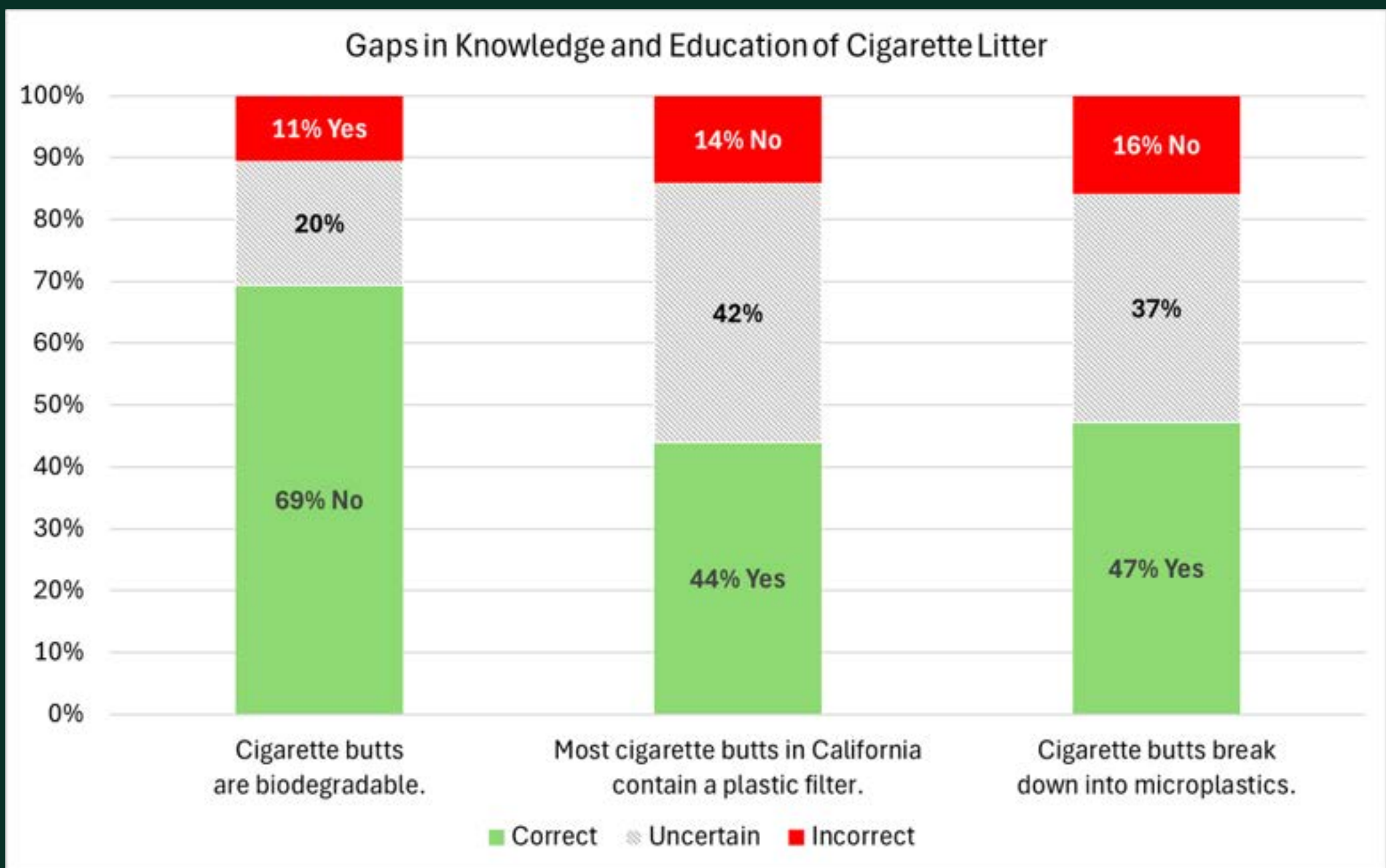
Cigarette butts were perceived as less threatening to the environment than other types of plastic and tobacco product waste.

In comparison, Californians were much less likely to consider cigarette butts a “major threat”.



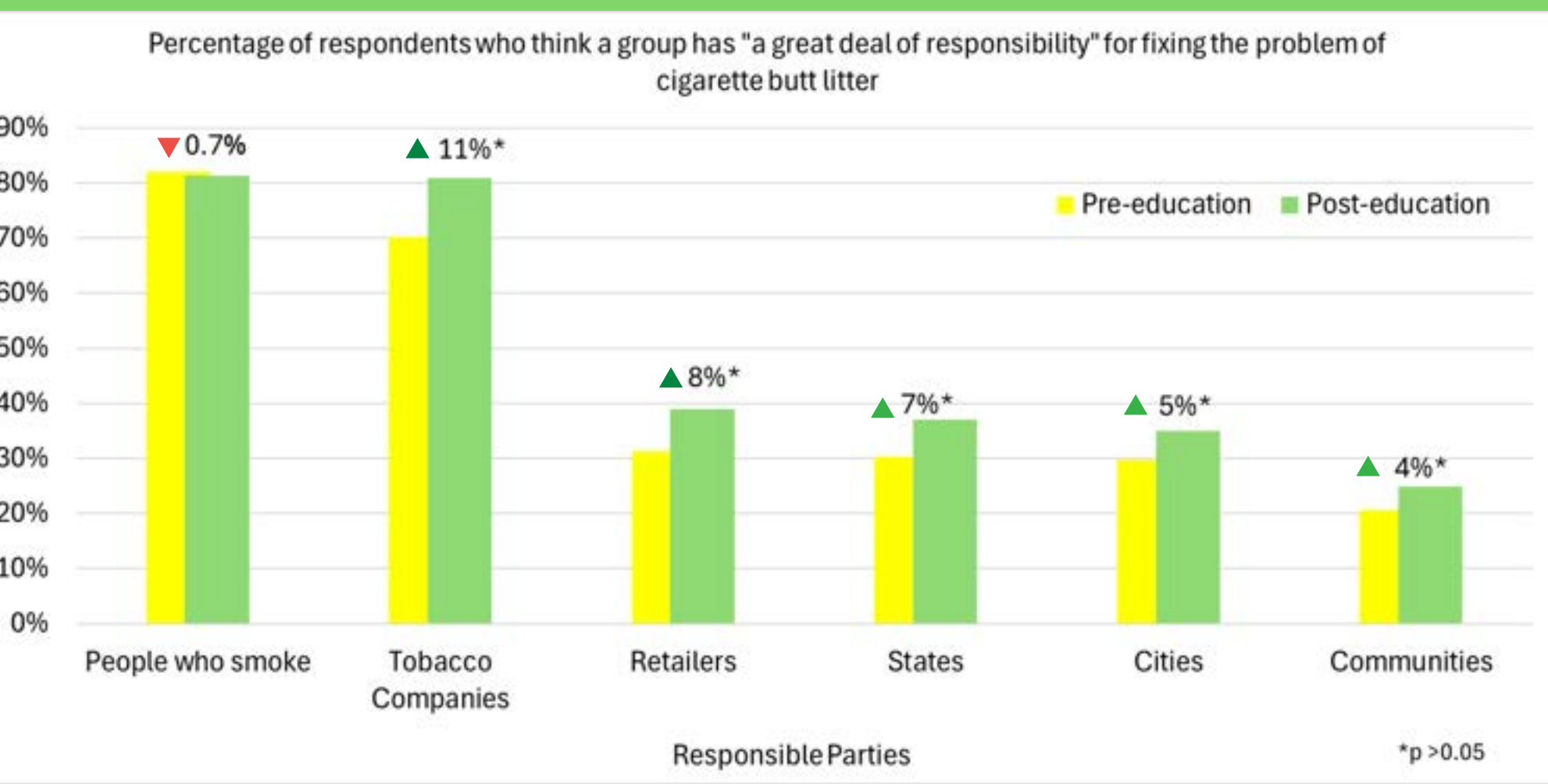
Initially, a majority of participants were unaware that cigarette filters are made of plastic, and some believed them to be biodegradable.

While most agreed that cigarette butts harm the environment and wildlife, awareness of their plastic makeup and long-lasting environmental impact was limited.

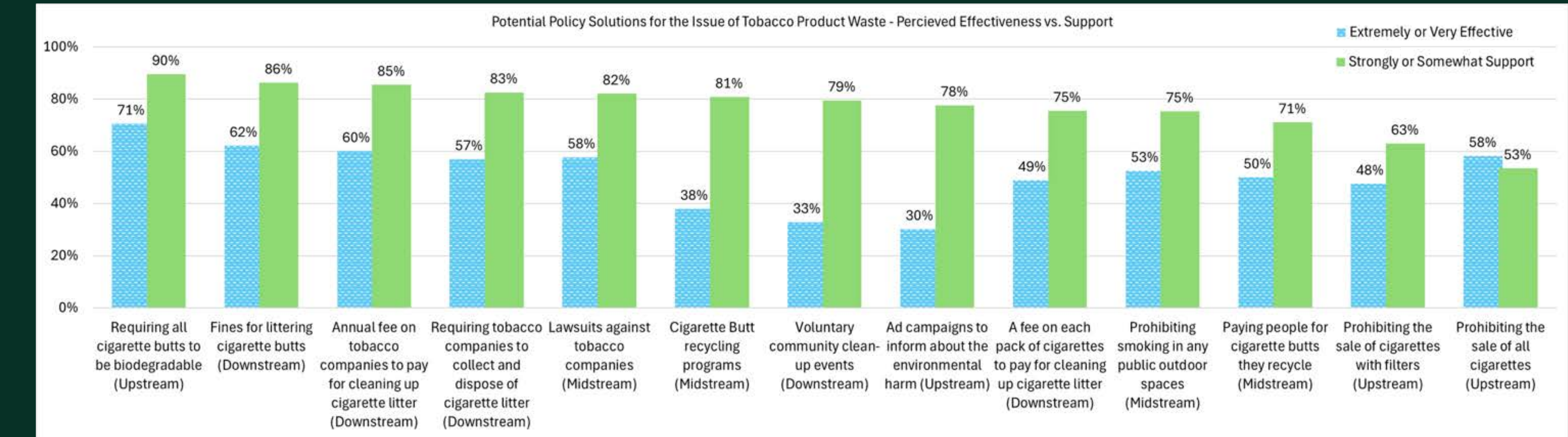


Giving people the facts on filters makes a difference.

After Californians learned that cigarette butts aren’t biodegradable and release toxins and microplastics, they were more likely to think tobacco companies and retailers have “a great deal” of responsibility to fix the problem.



Perceived policy effectiveness was not consistent with the degree of support.



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Results

- E-cigarettes and vape components were more frequently identified as a “Major Threat” to the environment (62%) than cigarette butts (47%) or nicotine pouches (46%).
- Many did not know that cigarette butts break down into microplastics (53%), contain a plastic filter (56%), and are not biodegradable (31%).
- Before and after a brief educational message, people who smoke (82→81%), tobacco companies (70→81%), and retailers (31→39%) were the parties reported most as having “a great deal” of responsibility, with tobacco companies (+11%) and retailers (+8%) having a statistically significant increase in reported responsibility.
- For 12 of the 13 policies, a larger % of participants reported that they supported the policies than reported they would be effective. This relationship was reversed for prohibiting the sale of cigarettes.
- The largest gap between reported support and effectiveness was seen with ad campaigns (Δ48%) and community cleanups (Δ46%).

Conclusion

- Cigarette butts are an under-recognized source of microplastics and chemical pollution. Our survey illustrates a lack of understanding of the harm of cigarette litter to the environment relative to that of other plastic and tobacco product waste.
- While there is broad agreement that cigarette litter is harmful to the environment, there is a notable gap in knowledge regarding cigarette butt biodegradability and the role of plastic filters.
- Brief education increased the % of participants who held tobacco companies and retailers responsible to fix the issue of cigarette litter. Brief education did not change the % of participants who held “people who smoke” responsible. Participants held onto the belief that people who smoke are the most responsible for fixing the problem of cigarette butt litter.
- Our results suggest that targeted messaging to address current knowledge gaps may increase public support for prevention-focused solutions that place responsibility on producers and retailers.

References

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