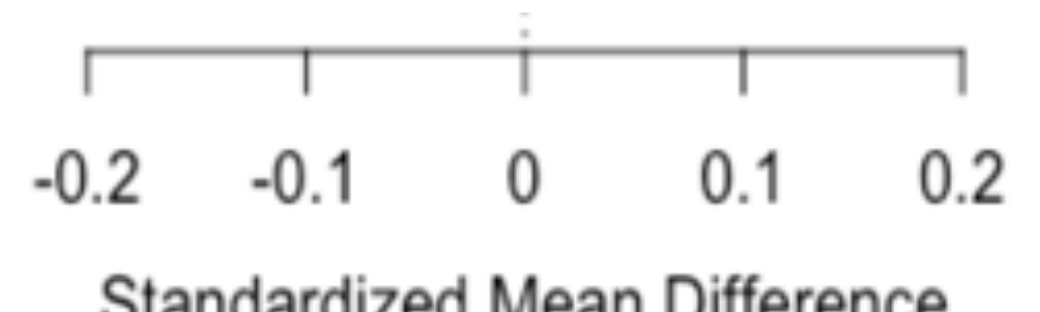
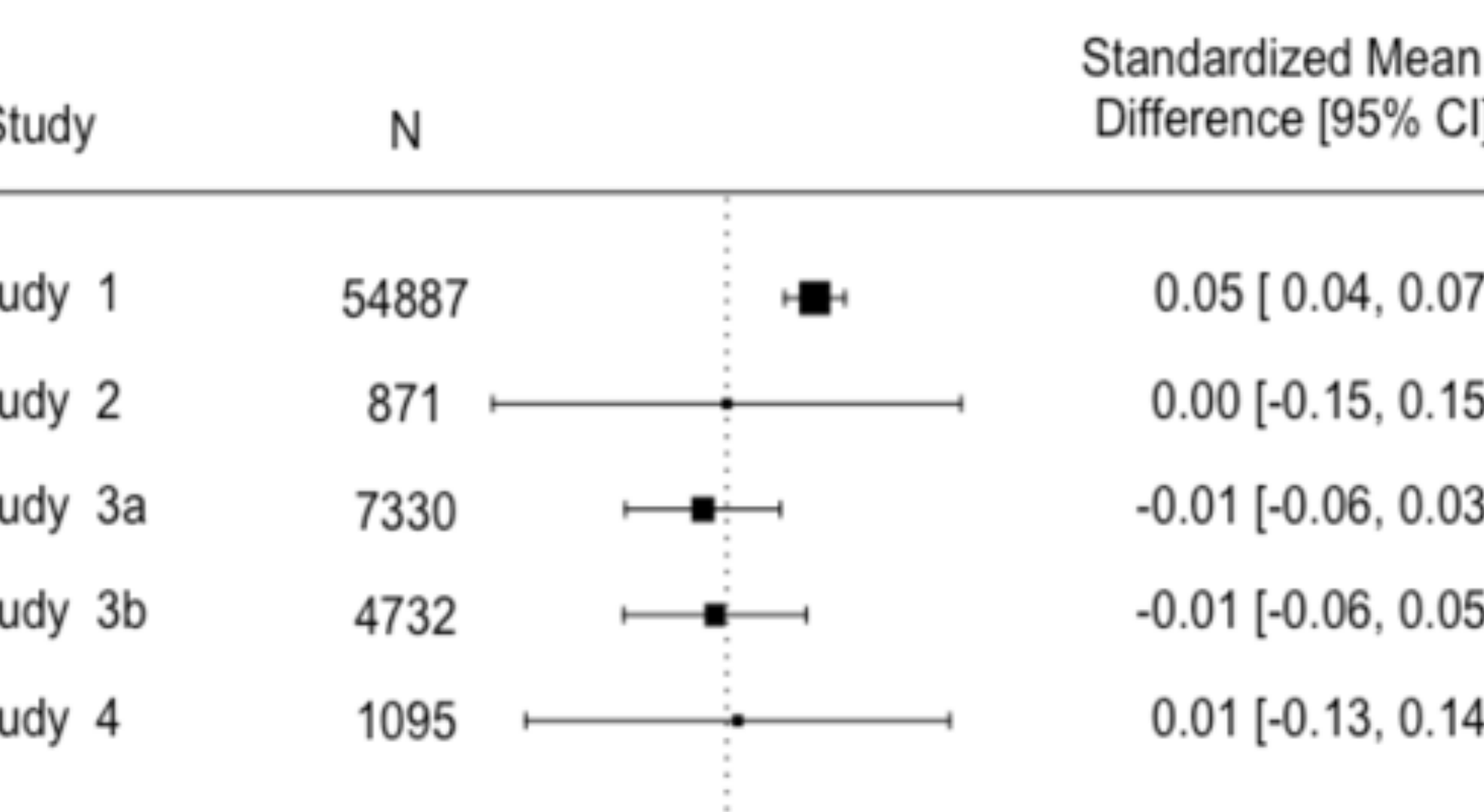


What We Can Learn from Five Naturalistic Field Experiments That Failed to Shift Commuter Behavior

Ariella Kristal & Ashley Whillans
Harvard Business School

ABSTRACT:
Across five field experiments with employees of a large organization (N=68,915), we examined whether standard behavioral interventions (“nudges”) successfully reduced single occupancy vehicle commutes. In Studies 1-2, we sent letters and emails with nudges designed to increase carpooling. These interventions failed to increase carpool sign-up or usage. In Studies 3a-4, we examined the efficacy of other well-established behavioral interventions: non-cash incentives and personalized travel plans. Again, we found no positive effect of these interventions. Across studies, effect sizes ranged from $d=-0.01$ to $d=0.05$. Equivalent testing using study-specific smallest effect sizes of interest revealed that the treatment effects observed in four out of five of our experiments were statistically equivalent to zero ($p_s < 0.04$). The failure of these well-powered experiments designed to “nudge” commuting behavior highlights both the difficulty of changing commuter behavior and the importance of publishing null results to build cumulative knowledge about how to encourage sustainable travel.



When trying to shift **commuter behavior** – to reduce Single Occupancy Vehicle use - don't rely **solely on nudges.**



Study	Psychological barriers addressed	Interventions tested in this paper
1. Increasing registration for carpool service (N = 54,887)	Lack of awareness of the carpooling scheme, of potential carpool matches, and of the cost savings of carpooling (vs. driving alone). Anticipated regret in case of emergency or unexpected personal event (e.g. sick child needing to be picked up from school). High friction costs associated with registering Lack of awareness of peers engaging in carpooling behavior	Sending letters to increase carpooling registration: <ul style="list-style-type: none"> • Control (no letter) • Standard letter • Call to action letter • Testimonial letter
2. Increasing carpool use among employees already registered for the carpooling service (N = 871)	Misinformation about prevalence of potential matches Lack of awareness of opportunity costs of driving alone	Sending emails to registered carpoolers to actively carpool (as measured by registration of the carpool unit, to access priority pass) <ul style="list-style-type: none"> • Control email • Matching email • Matching email + opportunity cost made salient
3. Increasing the number of employees who take the bus (as measured by discounted travel pass purchases) (N _{3a} = 7,564) (N _{3b} = 4,732)	Negative perceptions of public transit Ambiguity aversion Status quo bias	Offering a one-week free bus trial to increase bus use <ul style="list-style-type: none"> • Letter with route and discount information • Letter + offer of a one-week free trial Sending follow-up letters to those who did not partake in the free bus trial to increase bus use <ul style="list-style-type: none"> • Control (no follow-up letter) • Follow-up letter
4. Reducing the number of SOV trips through delivery of a personalized travel plan (N = 1,095)	Lack of information Perceived high search costs	Emailing a personalized travel plan (PTP) with tailored journey information and information about discounted travel products <ul style="list-style-type: none"> • Control (no PTP) • PTP