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# Support for behavioral nudges versus alternative policy instruments and their perceived fairness and efficacy

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## Abstract

An extensive debate has emerged in recent years about the relative merits of behavioral policy instruments (nudges) aimed at changing individual behavior without coercion. In this article, we examine public support for non-deliberative nudges and deliberative nudges and compare them to attitudes toward top-down regulation and free choice/libertarian options. We also examine whether support for both types of nudges is associated with perceptions of fairness and efficacy. We test these expectations with a survey experiment with 1706 UK adult respondents (representative of the population on age, gender, and location) in two policy areas (retirement savings and carbon offsets for airline passengers). We find higher levels of public support for both nudge policy options compared to top-down regulation. Support for nudges is associated with the perceived fairness of nudges more than their efficacy.

**Keywords:** behavioral science, deliberative nudges, nudge, policymaking.

## 1. INTRODUCTION

An extensive debate has emerged in recent years about the relative merits of light-touch behavioral policy instruments—nudges—aimed at changing individual behavior without coercion (albeit involving some level of manipulation). While policy instruments have always differed in their level of compulsion, persuasion, and encouragement (Bemelmans-Videc et al., 2011; Howlett, 1991; John, 2011), the recent adoption of nudges (i.e., policies adopted to change the physical, social, or psychological environment within which citizens make decisions) has added to the range of policy tools available to government. Nudges have been referred to as “libertarian paternalism” (Thaler & Sunstein, 2009) and can be thought of as occupying the middle position between top-down regulation, which typically constrains choice to one prescribed option, and pure libertarianism where citizens are given full choice. The nudge approach appears to offer a policy tool that simultaneously leads people to socially desired outcomes, while avoiding compulsion, hence preserving an element of free choice (Sunstein & Thaler, 2003; Thaler & Sunstein, 2009). Put another way, behavioral policy instruments can be seen as less choice limiting—and therefore less invasive—than top-down forms of regulation while allowing the government to play a role in regards to socially desirable behaviors that may not be produced if citizens exercised complete choice.

One important consideration in these debates is public opinion toward these various policy approaches. The wider array of tools now available to government has given a much sharper focus to the challenge of finding public support for policies designed to alter citizen behavior that fulfill aims for human freedom and at the same time are effective. This issue has become salient with regards to behavioral measures aimed at reducing the spread of COVID-19 where governments face difficult compliance challenges, needing both to enforce strict controls, but also requiring higher acceptance and compliance from the public at the same time. More generally, public

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opinion can be considered a decisive factor in determining how successful various policy approaches are and consequently how widely they are taken up by the government.

Despite Thaler and Sunstein's characterization of nudge as a normatively preferred "middle ground," public opinion toward the full range of policy instruments (as opposed to just nudges and regulation) captured in this characterization (i.e., from regulation to free choice) has seldom been tested. Whereas most studies compare attitudes to regulation or nudges discretely, we examine public opinion toward a full range of policy tools by presenting respondents (through random allocation in a survey experiment) with four distinct options that run along the choice continuum: (1) top-down regulation without choice; (2) a non-deliberative nudge; (3) a nudge with a deliberative component; and (4) a free choice/libertarian option. We provide experimental evidence from a large representative non-probability sample collected in the UK (where nudge has been taken up most enthusiastically). Our study builds on and complements insights from representative observational survey data (e.g., Sunstein *et al.*, 2019) and experimental studies focusing on single iterations of nudges and using relatively small student or mTurk samples in the United States (Arad & Rubenstein, 2018; Tannenbaum *et al.*, 2017).

Given that previous studies suggest widespread public approval of nudges (Jung & Mellers, 2016; Sunstein, 2016b; Sunstein *et al.*, 2019), we hypothesize that citizens will prefer nudges to top-down regulation because they allow a degree of choice. To disentangle the role of the freedom-enhancing aspects of interventions, we also include an alternative kind of nudge, a deliberative nudge. This is sometimes called a system 2 nudge (Jung & Mellers, 2016; Sunstein, 2016a), as it contrasts with the automatic system 1 process. Deliberative nudges are also related to nudge plus which combines reflection and heuristics (John & Banerjee, 2021). Because a deliberative nudge (e.g., a reflection device) involves the citizen getting both the nudge, but also the autonomy-enhancing aspect of the intervention (i.e., deliberation) we expect it to have higher support than a "standard" non-deliberative nudge. We also expect (again following Sunstein and Thaler) that citizens will prefer both types of nudges over free choice. Finally, in order to understand the underpinnings of attitudes toward various policy approaches, we draw on the procedural fairness literature to investigate the mediating role of perceived fairness and efficacy.

Below, we first review the empirical literature on public opinion toward different policy approaches. We then outline our methods, report the experimental findings, and assess our contribution to the burgeoning literature on attitudes toward behaviorally designed public policies.

## 2. PUBLIC OPINION TOWARD DIFFERENT POLICY APPROACHES

In the study of public policy, popular acceptance of policies has been considered to be a critical factor behind their success, as few policies work without the active cooperation of the people who are their intended targets. Even policies based on legal compliance, such as smoking bans, require the cooperation of the public (Cairney, 2009; Vannoni, 2018). We see this in other cases where government policies are based on education and adoption of norms, as in public health, which the COVID-19 crisis illustrates profoundly. Indeed, it is rare for a policy not to need some kind of behavior change as an intended outcome. Therefore, if public support for a policy is lacking long-term success—based on legal compliance, exhortation, or even the more recent focus on nudges—is less likely (John, 2011). Policy makers need then to adopt policies that the public deem to be legitimate and acceptable, not least from fear of electoral punishment if they get it wrong.

Whereas in the past it may have been fairly easy for governments to change citizen behavior through top-down regulation and other policy instruments, it could be argued that public opinion has become even more important for policy success in recent years. Numerous factors are complicating this relationship including declining political trust (Dalton, 2004; Stoker & Hay, 2017), attacks on experts (for contrary evidence see Funk *et al.*, 2019), publics being less deferential to elites, political polarization and citizens now having many more avenues for expressing dissent.

The greater emphasis on behavioral public policy in recent years makes it even more important to understand public opinion toward such policy approaches. Although the use of ideas from the behavioral sciences has been evident from the founding of modern states (John, 2018), and the behavioral revolution in economics can be dated to the 1950s (Oliver, 2017), the use of behavioral public policy only really gained momentum in the 2000s.

The term “nudge,” introduced in the influential eponymous book (Thaler & Sunstein, 2009), was a major turning point. Nudges have since then been widely adopted by governments of various ideological persuasions (Halpern, 2016; Halpern & Sanders, 2016; John, 2018; Loewenstein & Chater, 2017; OECD, 2017), owing their success to being less costly and less invasive than regulation.

Nudge has come about at an important time because governments are faced with addressing policy challenges with significant behavioral dimensions (e.g., COVID-19, environmental sustainability, reducing obesity). However, as stated above, nudges will only be successful in the long term if the public supports them. While there is burgeoning literature on public opinion toward nudges (e.g., Jung & Mellers, 2016; Sunstein, 2016b; Sunstein et al., 2019), there are still many aspects of public opinion that are not properly understood. Many public opinion surveys—such as the International Social Survey Program and other national election studies—ask about attitudes toward various regulations and support for spending in particular areas; far fewer studies however have examined public support for nudge relative to support for other policy approaches (see Davidai & Shafir, 2020, for an exception).

Many of these questions come down to the amount of choice that should be offered to citizens—or, to put it another way, how freedom preserving they are, which affects support for nudges (see De Jonge et al., 2018; Hagman et al., 2015). Nudge appears to offer an important alternative to more conventional approaches because it does not rely on top-down forms of regulation as such and appears to be more freedom-preserving than other policy options. In other words, it appears to offer a “middle ground” as suggested in Thaler and Sunstein’s (2009) description of nudges as “libertarian paternalism.” In saying this, we recognize that regulation itself varies between more compulsory, top-down approaches, to ones depending more on responsiveness and encompassing consent from citizens and organizations (Baldwin & Black, 2008), such as smart regulation (Gunningham & Grabosky, 1998). Here, we focus on forms of regulation that involve a nonvoluntary component, which we refer to as top-down regulation for clarity. This conceptual simplification allows us to examine support for nudges in the context of the choice offered to citizens in the different iterations of the policy approaches presented. We hypothesize that the public will be more likely to support nudges than measures based on compulsion, where choice is more constrained.

Despite Thaler and Sunstein framing nudges as “libertarian paternalism,” critics claim that nudge remains paternalistic as governments are still using instruments that have known outcomes without the consent of citizens (Sugden, 2018). To engage with this argument, we additionally examine support for deliberative nudges which involve a deliberative or educational component prompting citizens to reflect on the nudge (Sunstein, 2016a). We hypothesize that deliberative nudges will enjoy a higher level of support than top-down regulation and a “standard” non-deliberative nudge because they preserve choice and are more transparent. We also include a free-choice/libertarian option to gauge citizen attitudes toward policy options where they can exercise complete choice. This issue has become important recently given arguments (within and outside of government) about the appropriateness of different interventions to reduce the effects of the COVID-19 pandemic. The widespread finding that citizens support “big government” (Bell & Hindmoor, 2009; Brooks & Manza, 2007; Pierson, 2001) seems to suggest that many citizens prefer the government to play some “steering” role. Based on this, we believe that both types of nudges will be preferred over the free choice option.

We also explore the underpinning of these attitudes by examining the mediating role perceptions of fairness and efficacy play in support for different policy options. While perceived efficacy is considered to be a key driver of attitudes toward public policy in general (e.g., Easton, 1975, p. 449; Hibbing & Theiss-Morse, 2002), we believe that fairness perceptions could play a more important role in explaining support for nudges (i.e., it could explain a public preference for “libertarian paternalism” versus regulation [paternalism] or libertarianism). A broad literature has shown procedural fairness to be an important aspect of public opinion. Following early work in this area produced in courtroom settings (Thibaut & Walker, 1975; Tyler & Caine, 1981, p. 643) more recent research has shown that perceptions of process are important determinants of legitimacy and outcome acceptance (Joss & Brownlea, 1999, p. 324; Sondak & Tyler, 2007; Tyler, 1998). This literature has also been applied to public policy (Herian et al., 2012, p. 829; Tusalem, 2016; Wang & Kurzman, 2007) where it has been found that fairness perceptions can be linked to higher compliance with requests from government agencies (Faulkner et al., 2018; Mazerolle et al., 2012; Wenzel, 2006) and political trust (Hetherington & Rudolph, 2015, p. 34). In short, this literature shows that perceptions of fairness can mediate evaluations of the

outcome. In our study, we use mediation analysis to find out whether support for policy options is associated with perceived fairness and efficacy.

Based on this literature, we generate the following expectations:

- 1 Both types of nudges will have a higher level of support than top-down regulation and the free choice option by offering a middle ground as per the characterization of “libertarian paternalism”;
- 2 This effect in (1) will be larger in the case of deliberative nudges that include a deliberative component thus allowing citizens more agency than in a standard non-deliberative nudge;
- 3 Respondents who regard the policy they are presented with as fair will be more likely to support it.

### 3. METHOD

The study received ethical approval from the [details removed for blind review] Human Ethics Advisory Group no. [details removed for blind review].

#### 3.1. Participants

Data for the study were collected in June 2020. We recruited 1850 participants using Dynata, an online recruiting company. Quota sampling was used to obtain a sample matching the UK public in terms of gender, age, and geographic region. We removed 144 (8%) participants with very short completion times ( $<1/2$  of a median completion time in the sample = 460 s), resulting in a final sample of 1706 participants (49% female, 51% male; 33% 18–34 years old, 36% 35–54 years old, 31% 55–75 years old). This sample size provided 90% power for detecting an effect ( $f^2$ ) as small as 0.02 in regression with 10 predictors, with  $\alpha = 0.001$ .

#### 3.2. Materials and procedure

##### 3.2.1. Policy manipulation

Participants were randomly assigned to one of four hypothetical experimental conditions: top-down regulation (no opt-out), non-deliberative nudge (opt-out), deliberative nudge (opt-out with a deliberative requirement), and free choice. Each participant was presented with two policy scenarios, presented in random order: retirement savings (a policy with a high level of support) and carbon offsetting (a policy with a low level of support). The full wording of the manipulation text can be found in the Supporting Information S1 available online.

##### 3.2.2. Comprehension checks

Following each manipulation, participants were asked two questions about the topic (“What’s the subject of the policy you just read about?”) and details of the proposed policy (e.g., “Is it true or false that under this policy UK citizens would be automatically charged an extra 5% of the ticket price to offset their carbon emissions?”). Only participants who correctly answered both questions for each policy ( $n = 1336$  and  $n = 1379$ , respectively) were included in the final analysis.

##### 3.2.3. Policy evaluation

After reading each policy vignette, participants were asked about their overall support for the proposed policy (“Would you approve or disapprove of this policy?”; 1—strongly disapprove, 5—strongly approve), and how fair (“Please rate the fairness of this policy”; 1—very unfair, 5—very fair), and efficacious they perceived it to be (“Do you agree or disagree that this policy would help citizens save enough money for retirement/would help offset the environmental consequences of carbon emissions from flying?”; 1—strongly disagree, 1—strongly agree).

### 4. RESULTS

All analyses were conducted in R v.4.0.4.

#### 4.1. Policy support

Respondents in the non-deliberative nudge condition ( $b = 0.24$  [0.09, 0.38],  $t(1316) = 3.11$ ,  $p = 0.002$ ,  $sr^2 = 0.01$ ) and in the deliberative nudge condition ( $b = 0.21$  [0.07, 0.36],  $t(1316) = 2.85$ ,  $p = 0.004$ ,  $sr^2 = 0.01$ ) were more supportive of the retirement savings policy than respondents in the top-down regulation condition

(see the Supporting Information S1 for full regression models). The same pattern was found for the carbon offsetting policy: respondents in the non-deliberative nudge ( $b = 0.20$  [0.03, 0.37],  $t(1375) = 2.33$ ,  $p = 0.020$ ,  $sr^2 < 0.01$ ) and deliberative nudge condition ( $b = 0.26$  [0.09, 0.43],  $t(1375) = 2.99$ ,  $p = 0.003$ ,  $sr^2 = 0.01$ ) were more supportive of the policy than respondents in the free choice condition (see Figure 1 and Supporting Information S1 for more information). For the retirement savings policy, we also found higher support for non-deliberative nudge ( $b = 0.22$  [0.08, 0.37],  $t(1316) = 2.97$ ,  $p = 0.003$ ,  $sr^2 = 0.01$ ) and deliberative nudge ( $b = 0.20$  [0.05, 0.34],  $t(1316) = 2.70$ ,  $p = 0.006$ ,  $sr^2 = 0.01$ ) than for free choice. For carbon offsetting policy, the differences in support between both types of nudges and free choice were not significant ( $b = 0.05$  [−0.12, 0.22],  $t(1375) = 0.54$ ,  $p = 0.589$ ,  $sr^2 = 0.00$  for non-deliberative nudge;  $b = 0.10$  [−0.07, 0.27],  $t(1375) = 1.19$ ,  $p = 0.234$ ,  $sr^2 = 0.00$  for deliberative nudge).

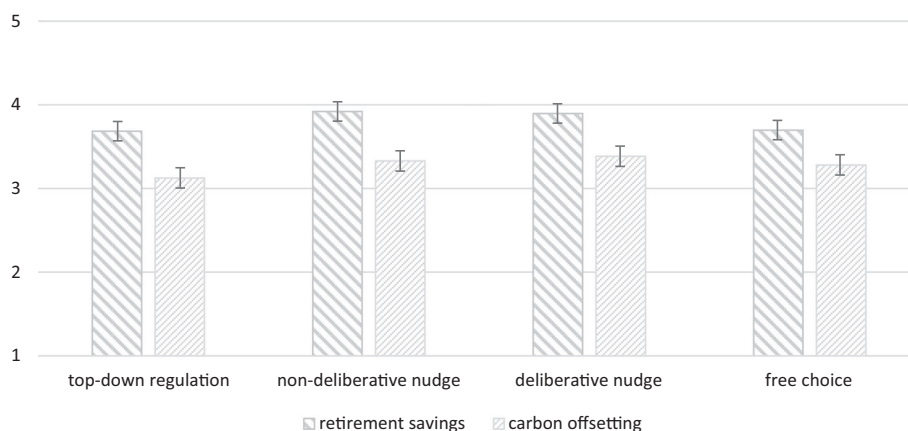
## 4.2. Perceived fairness and efficacy

Respondents in the nudge and deliberative nudge condition considered both policies to be fairer than respondents in the top-down regulation condition ( $b = 0.28$  [0.14, 0.43],  $t(1332) = 3.76$ ,  $p < 0.001$ ,  $sr^2 = 0.01$  and  $b = 0.27$  [−0.07, 0.20],  $t(1332) = 3.67$ ,  $p < 0.001$ ,  $sr^2 = 0.01$  for retirement savings;  $b = 0.24$  [0.07, 0.40],  $t(1375) = 2.78$ ,  $p = 0.004$ ,  $sr^2 = 0.01$  and  $b = 0.24$  [0.07, 0.41],  $t(1375) = 2.82$ ,  $p = 0.006$ ,  $sr^2 = 0.01$  for carbon offsetting). We do not find any differences in perceived fairness between nudges and free choice (see the Supporting Information S1 for full regression results).

Differences in the perceived efficacy of both policies were less consistent. For retirement savings, we found no significant differences in perceptions of efficacy of nudge versus regulation ( $b = 0.02$  [−0.12, 0.16],  $t(1332) = 0.28$ ,  $p = 0.777$ ) and deliberative nudge versus regulation ( $b = 0.07$  [−0.07, 0.20],  $t(1332) = 0.98$ ,  $p = 0.328$ ). Both types of nudges were, however, considered as more efficacious than the free choice option ( $b = 0.25$  [0.12, 0.39],  $t(1316) = 3.63$ ,  $p < 0.001$ ,  $sr^2 = 0.01$  for non-deliberative nudge and  $b = 0.30$  [0.17, 0.44],  $t(1316) = 4.41$ ,  $p < 0.001$ ,  $sr^2 = 0.01$  for deliberative nudge). For carbon offsetting policy, respondents in the non-deliberative nudge condition ( $b = 0.19$  [0.02, 0.36],  $t(1375) = 2.39$ ,  $p = 0.025$ ,  $sr^2 < 0.01$ ) and deliberative nudge ( $b = 0.25$  [0.08, 0.36],  $t(1375) = 2.92$ ,  $p = 0.004$ ,  $sr^2 = 0.01$ ) considered the policy as more efficacious than those in the regulation condition. However, we do not find significant differences in perceptions of efficacy of non-deliberative nudges compared to free choice ( $b = 0.02$  [−0.15, 0.19],  $t(1375) = 0.25$ ,  $p = 0.800$ ,  $sr^2 = 0.00$  for nudge,  $b = 0.08$  [−0.09, 0.24],  $t(1375) = 0.92$ ,  $p = 0.360$ ,  $sr^2 = 0.00$  for deliberative nudge).

### 4.2.1. Mediation analysis

We also tested whether the observed differences in support for the policies could be attributed to the fairness and efficacy perceptions. For the analysis, we used the *brms* package in R (Bürkner, 2016) and tested a parallel multiple mediation model with policy support as the dependent variable and fairness and efficacy perceptions as mediators, using the default 4,000 HMC (Hamiltonian Monte Carlo) draws. Results indicated that, for both policies,



**FIGURE 1** Mean support for policies depending on the level of regulation involved (1—strongly disapprove; 5—strongly approve)

respondents were more supportive of non-deliberative nudge and deliberative nudge (vs regulation) to the extent that they considered it to be fairer ( $b = 0.18$  [0.09, 0.27] and  $b = 0.17$  [0.08, 0.26] for retirement savings;  $b = 0.17$  [0.05, 0.28] and  $b = 0.16$  [0.05, 0.28] for carbon offsetting; see the Supporting Information S1 for full mediation models). In case of the carbon offsetting policy (but not retirement savings), greater support for non-deliberative nudge and deliberative nudge (vs regulation) could be also attributed to greater perceived efficacy ( $b = 0.03$  [0.01, 0.07] for nudge and  $b = 0.04$  [0.01, 0.07] for deliberative nudge). Pairwise comparison between the indirect effects indicated that the effect via fairness was larger than the effect via efficacy for the non-deliberative nudge condition (vs regulation;  $b_{\Delta} = 0.13$  [0.01, 0.25]), but not for the deliberative nudge condition (vs regulation;  $b_{\Delta} = 0.12$  [−0.01, 0.25], although the pattern of results was quite similar).

For retirement savings, we also tested a corresponding model with free choice as a reference category. Results indicated that respondents were more supportive of both types of nudges (versus free choice) to the extent that they perceived them as more efficacious ( $b = 0.06$  [0.03, 0.10] for non-deliberative nudge;  $b = 0.07$  [0.04, 0.11] for deliberative nudge), but fairness perceptions were not associated with greater support ( $b = 0.09$  [−0.00, 0.18] for non-deliberative nudge,  $b = 0.08$  [−0.01, 0.17] for deliberative nudge).

## 5. DISCUSSION

Nudges have now been adopted by governments around the world. While a huge body of work points to their success in different settings, public opinion will be a major constraining factor in the extent to which these tools are used and will affect their success in the long term. Our study provides an experimental test of support for nudges and deliberative nudges, relative to top-down regulation and free choice. We study this in the context of choice offered to citizens and examine whether claims made by Thaler and Sunstein about “libertarian paternalism” being the middle ground, thus the most preferred policy option, are supported by public opinion. Consistent with some of the existing survey-based literature (e.g., Sunstein *et al.*, 2019), we find this to be true with citizens preferring the nudge and deliberative nudge policy options over regulation. However, we only find nudge to be the preferred option over free choice for retirement savings which may reflect the lack of popularity for carbon offsetting. Contrary to our expectation that preference for nudges will be larger in the case of deliberative nudges that include a reflective component, we do not find a difference between a non-deliberative nudge and a deliberative nudge. This may be because citizens do not distinguish easily between the two types of nudges and see both as equally choice preserving. It may be that other more concentrated forms of deliberation, aside from those specified in our treatment, may be efficacious (e.g., deliberative democracy in the form described by Dryzek, 2010 and Fishkin, 2018). It could also be that the deliberative component was not given sufficient weight in our policy vignettes.

We also examined whether greater support for both types of nudges may be associated with perceptions of fairness and efficacy. As highlighted in our literature review, there is now a large body of literature that shows that perceptions of fairness affect attitudes toward policy and its perceived legitimacy (Lind & Tyler, 1988; Martin *et al.*, 2020). Although our study does not test these links causally, we find that support for nudges and deliberative nudges is associated with perceived fairness more than with perceived efficacy. Yet, we only found this association for nudge versus regulation; not nudge versus free choice. This finding suggests citizens may be less focused on the outcome than assumed by some of the literature (see Clark *et al.*, 2015; Esaiasson *et al.*, 2019 for a more nuanced discussion of the interplay between fairness and outcomes).

One question left unanswered by the analysis above is the potential paradox that what citizens state as a preferred process may be different from what they would state as their preferred outcome. The public may support policy options such as nudge which appear less burdensome for the individual in favor of top-down regulation that may impose more costs on the individual but be much more effective in producing welfare enhancing outcomes for the general population (climate change policy, where a trade-off between freedom and policy efficacy is required, may be thought of as an example here). These sorts of trade-offs represent collective action problems (Ostrom, 2000). To address some of these questions, we asked respondents (as part of an exploratory analysis) presented with the nudge and free choice policy options whether they would support top-down regulation if that were shown to be more effective than the freedom enhancing alternative. Overall, we found that about 50% of respondents across treatments chose the top-down regulation option when presented with this choice. This

provides some tentative evidence that despite respondents being more supportive of the (freedom enhancing) nudge conditions a significant number support the regulation option when this is presented as the most effective (welfare enhancing) policy. This suggests a more complicated calculus citizens are engaged in that policy makers should be attuned to.

While our article builds on and complements previous studies, it has some limitations. In our study, we deliberately chose one policy that enjoyed a high level of support (retirement savings) and one policy with a lower level of support (carbon offset programs) in previous studies (Sunstein et al., 2019). Respondents in our study differed not only in the support for both policies, but also perceived efficacy. Whereas retirement savings policy was considered to be more efficacious than free choice, carbon offsetting policy was considered less efficacious than free choice. Future studies should assess whether support for new policies in the domains requiring urgent action, such as climate change mitigation, can be increased by informing citizens about the efficacy of such approaches (see Reynolds et al., 2019 for a similar approach). Further studies should also explore, as per the discussion above, what trade-offs citizens will make in the face of different outcomes as a consequence of different policy settings. It is also important to point out that liberty can be conceived of in different ways. While regulation is assumed to reduce freedom, Dowding and Oprea (forthcoming) show that well-constructed regulation can enhance certain freedoms and argue that the claim that regulation reduces liberty is often overstated. Exploring how citizens view other types of regulation (beyond top-down regulation as presented in our vignette) is an important research question.

We also do not know how our findings would generalize to populations (in other countries) and different policy settings (such as different types of regulation). Finally, we have an incomplete understanding of the possible moderation effects, including the particular circumstances (such as the modes of deliberation or choice offered) under which citizens may or may not approve of nudges. Future studies can add to this body of knowledge and thus build on the findings of this article that has provided important insights into public support and some of the mechanisms underlying that support.

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## CONFLICT OF INTEREST

The authors have no conflicts of interest.

## DATA AVAILABILITY STATEMENT

The data have not been made available on a permanent third-party archive; requests for the data or materials can be sent via email to the lead author at [email]. The complete questionnaire is included in the Supplemental Online Material associated with this article at [url].”

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## Supporting information

Additional Supporting Information may be found in the online version of this article at the publisher's web-site:

### APPENDIX S1: Supporting Information