



Supplementary Information for
Psychological Ownership Interventions Increase Interest in Claiming
Government Benefits

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This PDF file includes:

Supplementary studies

Other supplementary materials for this manuscript include the following:

Datasets for all studies

Pilot Study

Method. This study explored the naturally occurring relationship between perceptions of psychological ownership of government benefits and feeling reluctant about asking for help. This study was pre-registered on Aspredicted.org (<https://aspredicted.org/blind.php?x=pb2fk5>). Five hundred and seven online participants completed this correlational study in exchange for monetary compensation. Participants were first told that they would read a message that a non-profit organization sent to the people they serve. They were asked to imagine that they were one of those people and received the organization's message. They then read "We believe you may be eligible for a \$3400 tax credit. It's easy to file! If you haven't filed your taxes yet, you can do it online for free. Visit taxrefund.org." Participants answered three questions designed to measure their discomfort around requesting assistance using a nine-point scale ranging from 1 = not at all, 9 = very much: (1) "To what extent were you hesitant about getting more information about these COVID funds because you felt like you'd be asking for help?"; (2) "To what extent were you reluctant about getting more information about these COVID funds because you felt like you'd be asking for assistance?"; and (3) "As you decided whether to get more information about these COVID funds, to what extent did you feel uncomfortable about asking for assistance?" These questions were combined to form an assistance resistance index (Cronbach's $\alpha = .91$). Psychological ownership was measured using participants' level of agreement with two statements on a nine-point scale ranging from 1 = completely disagree, 9 = completely agree: (1) "These COVID funds feel like my money"; (2) "These COVID funds feel like they belong to me." These two measures were correlated ($r = .93, p = <.001$) and combined. The order of the psychological ownership questions and the reluctance towards asking for help questions were counterbalanced.

Results. Participants with higher psychological ownership of the tax credit felt less reluctance towards asking for help $B = -.12, SE = .039, t(506) = -3.00, p = .003$.

Supplemental Study 1: Validation of the Manipulation

Method. This study was conducted to validate that messages using higher psychological ownership impact people's perceptions of psychological ownership towards those government benefits. We aimed to collect data from 200 participants. The behavioral lab we requested participants through provided data from 334 online participants (Results remain significant using only the first 200 participants). All participants were first told that they would read a message that a non-profit organization sent to the people they serve. They were asked to imagine that they were one of those people and received the organization's message. Then depending on condition, participants read either the higher psychological ownership message or the control message sent by Code for America in Study 1. After reading the message, participants indicated their psychological ownership of the tax credit by indicating their level of agreement with two statements: (1) The \$3400 feels like my money and (2) The \$3400 feels like it belongs to me (both on 9-point scales: 1 = completely disagree, 9 = completely agree). Participants then provided demographic information (gender, age, and income).

Results. The two questions assessing psychological ownership were strongly related ($r = .95$) and combined. As expected, participants who received the higher psychological ownership message felt greater psychological ownership of the tax credit ($M = 5.70, SD = 2.71$) compared to those who received the control message ($M = 4.94, SD = 2.65$), $F(1, 332) = 6.72, p = .010$.

Supplemental Study 2: Post-Test Examining Other Potential Differences Impacted by the Manipulation

Method. This study was conducted to examine whether the psychological ownership manipulation impacted other plausible mechanisms including likelihood of receiving the tax credit

or social stigma. We aimed to collect data from 200 participants. The behavioral lab we requested participants through provided data from 312 online participants (Results remain the same using only the first 200 participants, the with exception that differences in loss aversion go from marginally significant to insignificant). This study was identical to the study validating the manipulation (Supplemental Study 1) with the following differences. Rather than indicating perceptions of psychological ownership of the tax credit, participants indicated their perceptions on a number of dimensions in a randomized order. Specifically, we assessed the perceived ease of understanding the message, the extent to which the message seemed personalized, and the extent to which the message seemed like spam (all on 9-point scales: 1 = not at all, 9 = very much so). We assessed participants beliefs that they are eligible for the tax credit (1 = definitely NOT eligible, 9 = definitely eligible), and how likely they believe it would be for them to receive the tax credit if they went to the website (1 = very unlikely, 9 = very likely). We also assessed the extent to which participants believed they had worked hard to earn the tax credit as well as how easy or difficult participants thought it would be to file their taxes based on the message (1 = very easy, 9 = very difficult). We assessed the perceived social stigma associated with getting the tax credit: "To what extent do you believe there is or is not a negative social stigma associated with getting this tax credit?" (1 = Definitely IS NOT a negative stigma, 7 = Definitely IS a negative stigma) as well as whether they believe they would be treated negatively by others if they got this tax credit (1 = not at all, 7 = very much so). Three questions assessed whether our messaging impacted loss aversion: (1) To what extent do you believe you would be losing \$3400 if you did not apply for this tax credit?; (2) How painful would it be to not have the \$3400?; and (3) How upset would you be to not have the \$3400 (all on 9-point scales: 1 = not at all, 9 = very much).

To ensure that participants read the message they received during the study, an attention check asked participants to indicate what type of benefit they were contacted about and were provided with four choices in a randomized order (tax credit, stimulus check, Medicaid, housing assistance). In this study, we also asked participants to report their ethnicity and whether they live in the United States, in addition to the demographic questions asked in Supplemental Study 1.

Results. Three participants could not identify the type of benefit that was featured in the message and were thus excluded from the analyses. The three questions assessing loss aversion cohered well ($\alpha = .80$) and were averaged into an index. Differences across conditions were analyzed using regression (psychological ownership condition coded as 1, control condition coded as zero). There were no significant differences in the ease of understanding the message, the level of perceived personalization of the message, the level of perceived difficulty in filing one's taxes, perceptions of social stigma or being treated negatively by others. Though there were some unanticipated differences in the extent to which the message felt like spam, (marginally) perceptions of eligibility, beliefs of the likelihood of receiving the credit, perceptions of having worked hard to earn the credit, and (marginally) perceptions of loss aversion, the direction of the differences across these measures suggest that such differences cannot explain participants' increased interest in claiming the credit in response to the higher psychological ownership message. We note that while the results for perceptions of eligibility and perceptions of likelihood may be puzzling given the results of the main studies, we conjecture that these results may be a function of the psychological ownership messaging being perceived more like spam. Indeed, the more participants believed the message was spam, the lower their perceptions of eligibility ($r = -.615, p < .001$) and the lower their likelihood of receiving the credit were ($r = -.485, p < .001$). Further, a regression controlling for perceptions of spam shows no differences in perceptions of eligibility or likelihood of receiving the tax credit across conditions (both $t < 1$).

Below are the means and relevant statistics:

Dependent Variable	Condition	Mean	SD	<i>t</i> (307)	<i>p</i>
Ease of understanding the message	Control	7.70	1.40	-0.65	0.515
	PO	7.59	1.57		
Level of personalization of the message	Control	3.12	2.09	0.34	0.737
	PO	3.20	2.14		
Extent to which the message felt like spam	Control	6.71	2.24	2.96	0.003
	PO	7.42	1.99		
Perceptions of eligibility	Control	4.54	2.41	-1.66	0.099
	PO	4.11	2.19		
Likelihood of receiving the credit	Control	4.05	2.36	-2.35	0.019
	PO	3.44	2.18		
Perceptions of having worked hard for the credit	Control	5.24	2.55	-2.46	0.014
	PO	4.56	2.36		
Level of perceived difficulty of filing taxes	Control	4.80	2.32	0.11	0.914
	PO	4.83	2.34		
Loss Aversion	Control	5.41	2.20	-1.66	0.097
	PO	5.00	2.11		
Negative social stigma	Control	2.62	1.79	-0.04	0.970
	PO	2.61	1.66		
Treated negatively by others	Control	1.85	1.22	0.91	0.365
	PO	1.98	1.25		

Table S1. Means by condition and level of significance for all dependent measures (supplemental study 2).

Supplemental Study 3: Post-Test Examining Other Potential Differences Impacted by the Manipulation Among Benefit Recipients

Method. Two hundred participants completed this study. This study was identical to Supplemental Study 1 aside from using a different participant pool. As background, Code for America selected participants from their pool of past food benefits recipients (i.e., Supplemental Nutrition Assistance Program a.k.a. SNAP) who indicated that English is their preferred language. To find a similar participant pool, we utilized Cloud Research’s filtering system and made the study available only to participants who had received (or are currently receiving) food-related government benefits (i.e., SNAP or WIC) as noted on their Cloud Research profile. Further, at the end of the survey, we asked participants to indicate whether English was their preferred language and whether or not they had ever received SNAP or WIC. To make the sample as similar to Code for America’s participant pool, we excluded participants for whom English was not their preferred language and those who has not received SNAP or WIC. All of methods, analyses, and exclusion criteria were included in our pre-registration on Aspredicted.com (<https://aspredicted.org/blind.php?x=gt58ex>).

Results. Three participants could not identify the type of benefit that was featured in the message, three participants indicated English was not their preferred language, two participants did not answer the language question, and 53 participants indicated that they had not ever

received the relevant government benefits (i.e., SNAP and WIC). Due to minor overlap across these groups, 60 participants were excluded in total for a final sample of 140 participants. The three questions assessing loss aversion cohered well ($\alpha = .80$) and were averaged into an index. Differences across conditions were analyzed using regression. There were no significant differences across any of the measures aside from loss aversion. However, these loss aversion differences could not explain our effects as participants in the control condition reported greater loss aversion than participants in the psychological ownership condition. Below are the means and relevant statistics:

Dependent Variable	Condition	Mean	SD	$t(139)$	p
Ease of understanding the message	Control	8.09	1.68	-0.61	0.544
	PO	7.94	1.29		
Level of personalization of the message	Control	3.19	2.50	0.90	0.368
	PO	3.58	2.57		
Extent to which the message felt like spam	Control	6.96	2.30	0.30	0.762
	PO	7.08	2.22		
Perceptions of eligibility	Control	4.62	2.35	-1.08	0.281
	PO	4.18	2.46		
Likelihood of receiving the credit	Control	4.07	2.17	-0.74	0.461
	PO	3.77	2.55		
Perceptions of having worked hard for the credit	Control	5.36	2.69	0.14	0.892
	PO	5.42	2.47		
Level of perceived difficulty of filing taxes	Control	4.27	2.44	-0.64	0.524
	PO	4.00	2.56		
Loss Aversion	Control	5.82	2.29	-2.03	0.044
	PO	5.03	2.32		
Negative social stigma	Control	2.58	1.62	-0.02	0.984
	PO	2.58	1.39		
Treated negatively by others	Control	1.62	1.13	0.92	0.360
	PO	1.80	1.21		

Table S2. Means by condition and level of significance for all dependent measures (supplemental study 3).

Supplemental Material: Code for America’s Data Tracking Abilities

In each of the studies, the outreach messages included a link to the GetYourRefund website with a UTM code attached that identified the experimental condition (i.e., which message the recipient received). This source code was trackable when the recipient clicked the link itself, and from there it followed the individual’s actions as long as they stayed within the GetYourRefund domain. Tracking the source codes allowed us to determine the rates that individuals in the different experimental conditions clicked the link in the outreach message, and also to determine the rates at which people began the filing process by clicking “Get Started.” However, from that point, the various pathways to filing all involved exiting the GetYourRefund domain at some point in the process. Individuals who chose the “File taxes myself” option were redirected to the TaxSlayer website where they filed taxes on their own. Outcomes from TaxSlayer were not available by

UTM code as TaxSlayer is a separate entity from Code for America. Individuals who chose the "File taxes with help" option answered a series of questions about their tax circumstances and then submitted their information to be picked up by a VITA volunteer, who supported the individual by phone and email before ultimately filing their taxes on their behalf. We were unable to track the UTM codes after the client transitioned to the VITA volunteer process, and we also did not have information if the client dropped off of the intake form but contacted VITA through another means, like text or email.