"Do Ex Ante Incentives Generate Endowment Effects or Trust?

Evidence from a Randomised Field Experiment Promoting Preventive Health Care"

Emily A. Beam, Yusufcan Masatlioglu, Tara Watson, and Dean Yang*

Version: January 2019

*The authors are at University of Vermont, University of Maryland, Williams College, and University of Michigan, respectively. This project was generously supported by NIH R21 Exploratory/Development grant #1R21HD071361, the Blue Cross Blue Shield Foundation of Michigan, the MITRE Faculty Research Award, and the Williams College Dean of Faculty's office. This project was conducted with approval from the University of Michigan Institutional Review Board, "Promoting Preventive Health Care in Michigan: The Impact of Information and Incentives," HUM00097382. We are grateful to the team at the Arab Community Center for Economic and Social Services (ACCESS), especially Amne Talab, Greg Robinson, and the ACCESS health clinic staff. We appreciate the tireless efforts of project managers Mohamed Abbadi, Hannah Bolder, Sae Ran (Sarah) Koh, and Justin Ladner, as well as enumerator staff and Todd Burrell at Medical Data Management. We also received valuable feedback from seminar participants at the University of Virginia Batten School and Williams College.

Abstract

We implement a field experiment designed to increase participants' willingness to visit a health clinic. Our findings suggest that there are differential responses to an incentive framed as being *ex ante* rather than *ex post,* potentially implying loss averse individuals are responding to an endowment effect. However, our analysis supports an alternative explanation: among those who do not trust our partner organization, giving an incentive *ex ante* raises the perceived likelihood that the incentive payment will be delivered as promised. In some contexts, apparent endowment effects are due to higher trust in the credibility of the incentive.

JEL codes: C93, D03, I12

"Do *Ex Ante* Incentives Generate Endowment Effects or Trust? Evidence from a Randomised Field Experiment Promoting Preventive Health Care"

I. Introduction

According to standard economic theory, policy-makers can use financial incentives to encourage desirable behaviour. Behavioural economics suggests that seemingly minor differences in the framing or design of these incentives can have meaningful impacts on decision-making. As noted in a review by Madrian (2014), factors such as the uncertainty of incentives, the timing of incentive payments, and whether payments can be viewed as a gain or a loss can impact take-up. Policy-makers are increasingly considering ways to leverage behavioural insights to maximise the effectiveness of the incentives they provide.

In this study, we focus on the potential to leverage endowment effects to achieve policy aims, which has shown early promise in health, educational, and employment contexts (Volpp et al., 2008; and Fryer et al., 2012, Hossain and List, 2012, and Levitt et al., 2016). In real-world policy applications, inducing a feeling of ownership over an incentive payment may raise the impact of the incentive. Behavioural theory predicts that a loss-averse person will be more responsive to the threat of losing an incentive with which they are endowed than they would be to the promise of gaining a similarly sized incentive.[1]

We implement a randomised field experiment that investigates the impact of incentive framing to promote preventive health care utilization. Preventive health screenings can detect problems early enough to maximise treatment effectiveness, improving health quality and reducing mortality (Maciosek et al., 2010). Additionally, such screenings have the potential to reduce health care costs, particularly when early treatment is available and affordable (Cohen et al., 2008).

[1] Kahneman and Tversky (1984) describe loss aversion as a set of preferences under which individuals find a given loss (relative to a reference point reflecting the initial endowment) more unattractive than the same-sized gain is attractive.

We offer selected individuals in and near Dearborn, Michigan, an incentive to visit a health clinic run by our partner organization. Like the existing literature, we attempt to induce an endowment effect among randomly selected participants. In the "Visa gift card" treatment, participants are endowed at baseline with a Visa gift card of either $50 or $10 that could be activated by visiting the clinic. By contrast, "reminder card" participants are given a generic reminder card with the promise that it will be exchanged for a gift card if they visit the health clinic, but they are not endowed with the gift card up front. In both cases, any individual who went to the health clinic would receive an active $10 or $50 Visa gift card, and any funds remaining after the visit could be spent elsewhere.

Though we aimed to incentivise health care utilization, the incentive was tied to a visit to the health clinic rather than utilization *per se*. In practice, most individuals chose to make an appointment without receiving any immediate service or obtained a minimal preventive service such as a blood pressure check at little or no cost. Thus, most participants who visited the clinic used the incentive payment elsewhere, presumably for non-health-related consumption.

Our paper builds upon previous studies by identifying and exploring the role of an important confounding factor: trust. In the absence of being initially endowed with an incentive, individuals may not fully trust the organization, policy-maker, or experimenter to deliver the incentive payment as promised. Interventions designed to induce a feeling of endowment or ownership may, in contexts where trust is lacking, simultaneously raise the perceived probability that the incentive will be forthcoming. It is theoretically and practically important, though empirically challenging, to distinguish between an *endowment effect* operating through loss aversion and observably similar behaviour driven by the participant's *trust* that the incentive will be delivered.

This concern is more relevant in some contexts than others. Existing work focused on mistrust of the medical system indicates that the role of trust may be particularly important in the health care domain. For example, Blenden et al. (2014) document that fewer than half of low-income Americans believe that doctors can be trusted. Using the fall-out from the infamous Tuskegee syphilis experiment, Alsan and Wannamaker (2018) document that mistrust of medical professionals is associated with worse health outcomes for African-American men.

We build a theoretical framework that links loss aversion and trust to incentive take-up. Behavioural theory suggests that individuals will be more responsive to an incentive payment if they perceive themselves to be endowed with it, and this will be truer for those that are more loss-averse. Thus, we expect a participant's loss aversion will be positively related to her take-up of the incentive. Further, we hypothesise that Visa gift card recipients are more likely to feel like they are endowed with the inventive than those receiving a reminder card. Thus, we expect participants will be more responsive to the Visa gift card the reminder card, and we expect the gap to be most evident among those exhibiting higher loss aversion.

Our model also predicts a relationship between baseline trust of the partner organization and take-up. Those who trust the organization are more likely to believe that the incentive will be delivered as promised if the individual visits the health clinic. But among those who do not trust the organization, a Visa gift card is likely to be viewed as more legitimate than the generic reminder card. If trust is an important determinant of the responsiveness to an incentive, those who do not trust the organization will be more responsive to the Visa gift card incentive. In sum, the trust model predicts that there will be higher take-up of the Visa gift card, and that the gap will be largest for those who do not trust the organization at baseline.

Our empirical results suggest a difference in behaviour between the "Visa gift card" and "reminder card" groups that is inconsistent with the presence of an endowment effect. The data do not suggest that gift card recipients are more responsive to the incentive when they are more loss-averse, nor that the loss-averse exhibit a differential response to the gift card treatment. In contrast, and as suggested by our model, baseline trust of our partner organization is predictive of responsiveness to the gift card treatment. Take-up is higher for the gift card than the reminder card incentive, but only among those who do not trust our partner organization at baseline. We conclude that rather than producing a sense of endowment, the Visa gift card treatment raises the perceived probability that the incentive will be delivered as promised.

II. Background

Given that preventive health care requires upfront outlays of money and time with future and uncertain benefit, myopic or liquidity-constrained individuals may tend to under-invest in it. A

2007 Robert Wood Johnson Foundation report examined twelve types of preventive health services and found that for seven services, fewer than half of recommended populations were receiving them (Partnership for Prevention, 2007). A 2013 Kaiser study suggests that 18 percent of individuals and about one-third of low-income individuals postponed preventive care in the past year due to cost (Kaiser, 2015). Policy-makers recognise this concern; a key feature of the 2010 Affordable Care Act is the reduction of patient cost-sharing for certain preventive services.

Financial incentives are one way to promote the use of preventive health care. Such incentives have been found to be effective in promoting usage of preventive health services, particularly for one-time actions (see Kane et al. 2004; Jochelson 2007; and Sutherland et al. 2008 for comprehensive reviews). Companies routinely offer their employees sizeable financial incentives for obtaining routine physicals or pursuing other healthy behaviours.

The literature investigating the application of the endowment effects to boost the effectiveness of such incentives in real-world contexts is relatively small. Building on lab evidence that "penalty" contracts engender more effort than "bonus" contracts (e.g. Hannan et al., 2005), a handful of recent field experimental studies investigate whether it is possible to exploit loss aversion to induce a desired behaviour. For example, Volpp et al. (2008) allowed treatment group participants in a weight loss study to put their own funds (with a financial match from the researchers) in a deposit contract; these funds were returned to the individual if they met weight loss goals. There was no equivalent "gain" treatment included in the study. The treatment group lost statistically more weight than a control group without the deposit contract, and the authors interpret this as an indication that behavioural biases can be exploited to improve health behaviour.

Fryer, et al. (2012) conduct a more direct comparison of a "loss" versus "gain" framing and find that teachers respond more to "pay-for-performance" incentives when the incentives are framed as a loss. Teachers in the "loss" treatment were given $4,000 (the expected value of the bonus) at the beginning of the school year and signed a contract that they would return some or all of the funds if their students did not make sufficient improvement in math achievement. In the "gain" treatment, teachers were given the bonus at the end of the year. The "loss" incentive was

associated with markedly higher math performance, which the authors interpret as the result of loss aversion.

Similarly, Levitt, et al. (2016) incentivised exam performance among students in the Chicago area using a variety of treatment arms motivated by the behavioural literature. In one set of experiments, one group of students received an incentive ($20 or a trophy) before taking the exam and were told they would need to return the incentive if they did not improve. Another group of students were not given the money, but they were told they would receive the incentive (held up at the front of the room by the administrator) if their test scores did improve. The authors find somewhat higher effect sizes for incentives framed as a loss, though the differences in responsiveness are not statistically significant. The authors interpret the finding as suggestive, but not definitive, evidence that loss aversion may be exploited to improve responsiveness to incentives. In a footnote, they also point out that timing of the incentive may also affect salience and "trust and subjective beliefs with respect to the actual payout."

Another related field experiment (Hossain and List, 2012) involves productivity incentives for workers in a Chinese electronics factory. In that experiment, some workers were *provisionally* given a bonus at the beginning of the work week and were told it would be retracted at the end of the week if they failed to meet certain performance targets. Other workers were promised an *ex post* bonus if they achieved targets. As is the case in our own experiment, the actual incentive payment was received at the same time by both groups of workers, but the framing differed. The results suggest that teams were more responsive to the incentive when it was framed as a loss – i.e. when researchers attempt to induce a feeling of ownership before the task was completed.

III. Stylised Model

In this section, we provide a stylised theoretical model to describe the behaviour of study participants. Let *m* denote the amount of the monetary incentive provided to subjects to visit a health clinic. This monetary incentive could be in two different forms: (i) an inactive Visa-branded gift card (g), or (ii) a reminder card (r) similar in size and color. To redeem either the Visa gift card or the reminder card, each subject must travel to the health clinic. For simplicity, we assume *c* represents the total cost of visiting the clinic, including time and transportation costs. Because

treatment is randomly assigned, we assume the distribution of costs is similar across different treatments. There are two main differences between these two treatments. The first one is the sense of ownership of the incentive (the endowment) and the second is the subjective belief that the participant will receive the incentive payment if they visit the clinic (trust).

To model the endowment effect, we assume that both a Visa-branded card and the reminder card could induce a sense of ownership. The parameter p measures the probability that participants believe that they are endowed with the incentive payment. By assumption, a Visa-branded gift card is at least as likely to induce a sense of ownership as a reminder card, i.e., $p_g \geq p_r$. The perceived endowment effectively shifts the reference point. Once subjects incorporate *m* into their current endowment, the failure to obtain *m* will be perceived as a loss. If the participant does not believe they are endowed with the incentive, *m* will be perceived as a gain.

Generically, assume individuals have the following utility associated with some change *a* to their current endowment:

$$u(a) = \begin{cases} a & if\ a \geq 0 \\ \lambda a & if\ a < 0 \end{cases}$$

Following Kahneman and Tversky (1984), we assume that some participants (the loss-averse) have utility functions that are steeper for losses than for gains, indicating greater sensitivity to losses relative to gains. Loss aversion is captured by a coefficient of $\lambda \geq 1$. Thus, the model predicts that a loss averse individual will get more disutility from forfeiting *m* if she believes she is endowed with *m* than she will get utility from gaining *m* if she does not perceive *m* to be part of her initial endowment.

As noted above, the gift card also may affect the participants' belief about the probability that she will actually receive the incentive payment as promised. We introduce a new parameter ρ that captures the probability the participant assigns to receiving the promised payment. The value of this parameter lies between 0 and 1; if the participant trusts the organization at baseline, ρ tends to be higher. The parameter ρ also depends on whether the subject receives a coupon or Visa card.

To permit a stylised model, let ρ_{Hg} denote the parameter for people who highly trust our partner organization at baseline and receive the Visa gift card, ρ_{Hr} denote the parameter for those who highly trust the organization and receive the reminder card, ρ_{Lg} denote the parameter for people who do not trust our partner organization and receive the Visa gift card, and ρ_{Lr} denote the parameter for those who do not trust the organization and receive the reminder card. Intuitively, we assume that the Visa gift card induces a higher subjective probability of receiving payment for each participant type, i.e., $\rho_{Hr} \leq \rho_{Hg}$ and $\rho_{Lr} \leq \rho_{Lg}$. Similarly, those with higher baseline trust will perceive a higher probability of payment from both types of incentives: $\rho_{Lg} \leq \rho_{Hg}$ and $\rho_{Lr} \leq \rho_{Hr}$.

We now describe the take-up behaviour for a subject with four parameters ($c, p, \lambda, \text{and } \rho$). Each subject has two options: "do nothing" or "go to the clinic" to obtain the incentive payment. With probability p, the participant believes she is endowed with the incentive.

If endowed, the participant makes a choice based on her expected gain, loss, and cost. With the "do nothing" option, she expects to lose $m\rho$, where m is the dollar amount of the incentive and ρ is the subjective probability that the payment would have been received. The utility loss associated with this is $-\lambda m\rho$, where λ is the degree of loss aversion. With the health clinic option, she expects to pay cost *c* and face no other change in utility.

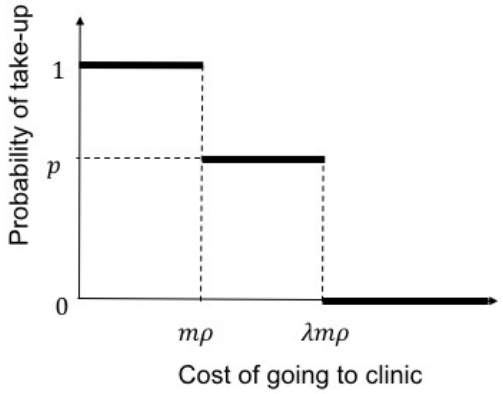
On the other hand, if the participant does not believe she is endowed with the inventive payment, then there is no change in her reference point. In this case, "do nothing" corresponds no change in utility. However, "go to clinic" will provide a total utility of $m\rho - c$. The is summarised below:

Figure 1. Theoretical decision parameters

Reference point	"do nothing"	"go to clinic"
Not Endowed $(1-p)$	0	$m\rho - c$
Endowed (p)	$-\lambda m\rho$	$-c$

Assume for the moment that $\lambda \geq 1$, implying that participants are loss averse or loss neutral. If the cost is sufficiently low ($c < m\rho$), the participants will go to the clinic. Similarly, if the cost is sufficiently high ($c > \lambda m\rho$), participants will not go to the clinic regardless of whether they perceive a change in their endowment. When the cost lies in the middle range ($m\rho < c < \lambda m\rho$), the sense of ownership affects whether the participant will go to the clinic. The next figure illustrates that, conditional on a given $\lambda > 1$, there are three groups: very low-cost participants go to the clinic, very high-cost participants do not go to the clinic, and middle-cost participants go to the clinic with probability determined by the degree to which they feel endowed with the incentive. (For loss-neutral participants, the $\lambda = 1$ "middle cost" group does not exist.) This is illustrated in Figure 2.

Figure 2. Relationship between parameters and take-up



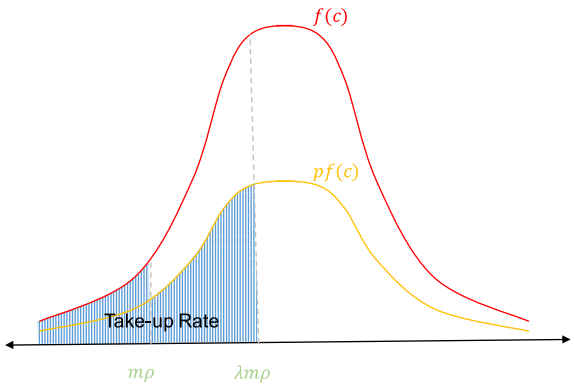
To find out the total take-up rate, let $f(c)$ represent the p.d.f. of cost parameter c. Then the area under the curve shown in Figure 3 can be seen as a total take-up rate.

$$\text{Take-up Rate (TR)} = \int_0^{m\rho} f(c)dc + \int_{m\rho}^{\lambda m\rho} pf(c)dc = (1-p)F(m\rho) + pF(\lambda m\rho)$$

Or, equivalently,

$$\text{TR} = (1-p)F(m\rho) + pF(\lambda m\rho)$$

Figure 3. Schematic representation of decision to visit clinic

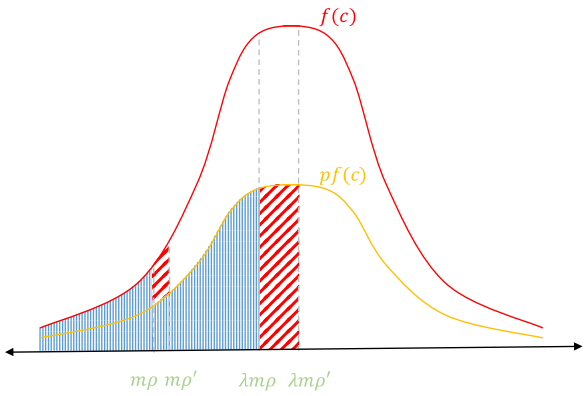


Armed with the basic stylised model, we now investigate the effects of trust, ownership, and loss aversion on the take-up rate, respectively.

A higher subjective probability ρ that the incentive payment will be delivered raises take-up. As can be seen in Figure 4, this has the effect of moving both cut-offs to the right, meaning more participants will visit the clinic. If participants believe the incentive payment will materialise, some who were not willing to bear the travel cost will now do so. Hence, the take-up rate increases as the level of trust increases. Mathematically,

$$\frac{\partial \mathrm{TR}}{\partial \rho} = (1-p)mf(m\rho) + p\lambda mf(\lambda m\rho) > 0$$

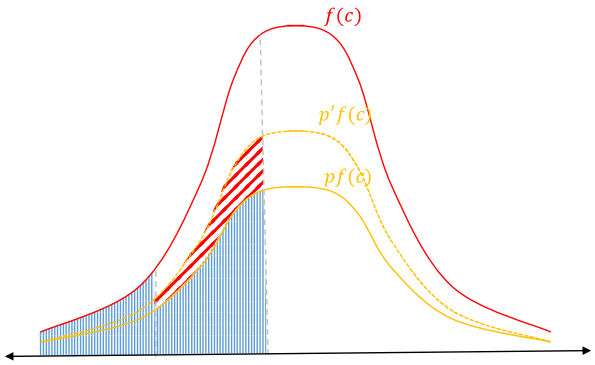
Figure 4. Effect of trust on take-up rate



When the probability of endowment p increases, loss averse participants will be more likely to respond to the incentive, as shown in Figure 5. Formally, we have :

$$\frac{\partial \mathrm{TR}}{\partial p} = \int_{m\rho}^{\lambda m\rho} f(c)dc > 0 \text{ if } \lambda > 1 \text{ and } \rho > 0$$

Figure 5. Effect of endowment on take-up Rate

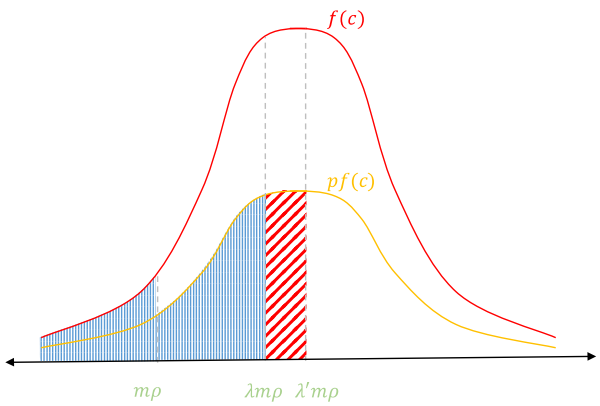


Finally, a higher loss aversion also yields a higher take-up rate. The endowed group will be more responsive if they are more loss averse. Formally, we have

$$\frac{\partial \mathrm{TR}}{\partial \lambda} = pm\rho f(\lambda m\rho) > 0 \text{ if } p, \rho > 0$$

Notice that when p is zero, so is the effect of loss aversion. In other words, if one cannot induce ownership, changing loss aversion has no effect. This is shown in Figure 6.

Figure 6. Effect of Loss Aversion on Take-Up Rate



The stylised model yields the following predictions that can be tested empirically:

1. The take-up rate increases as the loss aversion coefficient increases, if there is a sense of endowment. Similarly, the take-up rate increases as the probability of the sense of endowment increases, but only if the participant is loss averse. We assume the Visa gift card is more likely to be perceived as "endowed" than the reminder card.

Hypothesis 1a: Participants who exhibit higher loss aversion will have higher take-up rates.

Hypothesis 1b: Loss averse individuals will be more responsive to the Visa gift card incentive than the reminder card, and the gap will be increasing in loss aversion.

If these hypotheses are validated empirically, the findings lend support to the notion that the Visa gift card induced higher responsiveness to the incentive by inducing an endowment effect.

2. The model suggests that take-up rate increases as the level of perceived probability of payment increases. We suspect those who have a high degree of trust of our partner organization at baseline are likely to perceive a high likelihood of payment from the reminder card or gift card. We also believe that the Visa gift card is associated with a higher perceived probability of payment relative to the reminder card, particularly among those who do not trust the organization at baseline.

Hypothesis 2a: Participants who trust the partner organization at baseline will have higher take-up rates.

Hypothesis 2b: "Non-trusters" will be more responsive to the Visa gift card incentive than the reminder card, and the gap will be greater for non-trusters than for those who do trust the organization at baseline.

IV. Experimental Design and Data

To investigate these hypotheses, we partner with the Arab Community Center for Economic and Social Services (ACCESS), a social service non-profit based in Dearborn, Michigan. ACCESS has a strong record of serving low-income families of all races and ethnicities in the Detroit area. The organization runs a well-regarded community health center in addition to offering a variety of other education, employment and other social services. About 80 percent of our primary sample was familiar with ACCESS at baseline.

We worked with ACCESS to implement a randomised field experiment using door-to-door surveys. We surveyed 2,004 individuals in three waves from 2013 through 2015, with the exact methodology varying slightly between each wave as we responded to challenges in the field. The first wave was implemented from July through September 2013 and included 652 respondents. The second wave was implemented from October 2013 through August 2014, with a break during the winter months, and included 557 respondents. The final wave was implemented from May through October 2015 and included 795 respondents.

a. *Survey area selection*

To ensure that participants would be likely to use and benefit from ACCESS's preventive services, we targeted neighborhoods for our door-to-door survey that were (1) near ACCESS and (2) fairly low-income. Specifically, we identified Census tracts that were within a 5.5km (3.4 mile) radius originating at the ACCESS Dearborn clinic. This included neighborhoods in Dearborn and Detroit. We then excluded any tracts with a poverty rate of less than 20 percent.

The sample areas had large immigrant populations, primarily from the Middle East. All interviewers were fluent in English and Arabic, and we surveyed respondents in whichever of the two languages they were most comfortable. English speakers received intervention materials only in English, while Arabic speakers received materials in English and in Arabic.[2]

During our first survey wave, we encountered several safety issues: some interviewers were harassed by residents; on another day, interviewers witnessed gunfire a few blocks away. After these experiences, we excluded tracts that reported relatively high recent crime levels, and we contacted the Dearborn police department to exclude any additional tracts that they considered to be unsafe.

b. *Recruitment and baseline survey*

We surveyed selected Census tracts in random order, and pairs of interviewers approached all households that were located within each tract. We skipped only houses that were obviously vacant or that had posted "no solicitation" signs. To maximise the likelihood of reaching respondents, interviewers surveyed in evenings and on weekends. When respondents came to the door, interviewers invited them to participate in a brief survey about preventive health care usage. Interviewers offered a small bottle of hand sanitizer as a thank-you gift, but they did not mention the likelihood of receiving any incentives to visit ACCESS.

Thirteen percent of addresses were deemed unapproachable because of no solicitation signs, obvious vacancies, or other factors. Of the remaining 87 percent of addresses, 36 percent of residents answered their doors, 88 percent of those met the eligibility criteria (being between ages 18 and 64 and an English or Arabic speaker), and 46 percent of those eligible agreed to participate. Participating households represented 12 percent of all addresses in the chosen tracts.

Respondents who agreed to participate completed a brief baseline survey about their demographic characteristics and health care utilization. The final questions measured their loss

[2] Among households we visited, fewer than one percent could not participate in the survey because the potential respondent spoke neither English nor Arabic.

aversion (non-incentivised) and cognitive ability through Raven's matrices and number recall. At the end of the baseline survey, each interviewer opened an envelope that contained one of the treatments, read the appropriate script, and gave the respondent the envelope contents to keep.

The Visa gift card and reminder treatments were designed to look and feel as similar as possible, with the exception that the gift card included the Visa logo and a 16-digit card number. A sticker was placed on both cards to remind the recipient about the deadline for redemption. In the second and third waves of the experiments, all recipients also received a reminder call roughly two weeks after the baseline survey. Examples of the Visa gift card and reminder card are shown in the online appendix.

c. Sample characteristics

For the main analysis, we focus on the sample that received a $50 incentive – either a $50 reminder card or a $50 Visa gift card. As shown in Table 1, the sample is 57 percent female and 57 percent married, with just under half born in the United States. About 81 percent of respondents have some form of health insurance. Eighty percent were familiar with our partner community organization, ACCESS, though only 43 percent had visited the organization and 44 percent reported trusting the organization. Additional control variables include measures of health status, use of medical care, and cognitive ability.[3]

[3] We measure respondents' cognitive ability in two ways. First, we used digit-span sequencing to measure working memory, asking respondents to recite back strings of numbers of increasing length. On average, respondents could recall six numbers sequentially without errors. Second, we use Raven's matrices to measure fluid intelligence. We show respondents a series of three pieces that form a pattern, with a fourth piece missing. We ask them to select from four choices the best fit for that missing piece. On average, respondents scored 1.2 correct out of 3 questions of increasing difficulty. We normalise and then control for cognitive ability in our specifications that use individual-level covariates.

Table 1: Demographic characteristics by sample wave

		Wave		
	Overall	2013	2014	2015
	(1)	(2)	(3)	(4)
Female	0.57	0.59	0.59	0.55
Age	37.46	36.70	37.14	37.98
Married	0.57	0.52	0.58	0.59
Arabic speaking	0.30	0.30	0.34	0.26
Middle Eastern[a]	0.69	N/A	0.79	0.62
Black	0.14	0.25	0.12	0.10
Hispanic	0.03	0.03	0.01	0.04
Number of children	4.36	4.10	4.63	4.29
Household size	1.66	1.50	1.81	1.61
Born in US	0.48	0.49	0.43	0.50
US citizen	0.87	0.85	0.86	0.89
HS graduate or less[b]	0.46	N/A	N/A	0.46
Quality of health (1 = excellent, 6 = very poor)	2.65	2.64	2.62	2.67
# Preventive health visits past 12 mo., adults	3.85	2.17	4.10	4.36
# Preventive health visits past 12 mo., children	2.75	1.49	2.96	3.11
Know about ACCESS	0.80	0.82	0.90	0.71
Ever used ACCESS	0.43	0.48	0.46	0.38
Trust ACCESS	0.44	0.49	0.47	0.40
Loss aversion (Kősegi-Rabin)	1.78	1.45	1.76	1.94
Digit span	6.05	6.23	5.97	6.03
Raven's matrices (out of 3)	1.23	0.93	1.43	1.25
Have any health insurance	0.81	0.71	0.78	0.88
Have health insurance through employer or spouse	0.32	0.28	0.26	0.37
Have public health insurance	0.44	0.34	0.47	0.45
# Emergency health visits past 12 mo., adults	1.43	1.59	1.40	1.39
# Emergency health visits past 12 mo., children	0.72	0.75	0.80	0.65
# Non-emergency health visits past 12 mo., adults	3.70	2.38	4.85	3.44
# Non-emergency health visits past 12 mo., children	2.56	1.68	3.03	2.60
Observations	1678	326	557	795

[a]Only asked in 2014 and 2015 wave. [b]Only asked in 2015 wave.

Our simple lottery choice task is adapted from Fehr and Goette (2007). As argued in Segal and Spivak (1990), Rabin (2000), Wakker (2005), Köbberling and Wakker (2005), Fehr and Goette (2007), Gächter, Johnson, and Herrmann (2007), our task measures loss aversion rather than

risk aversion. Segal and Spivak (1990) show that second-order risk-averse people (standard EU) can't exhibit risk aversion over sufficiently small stakes lotteries. In contrast, first-order risk-averse individuals can. "Loss aversion " is typically interpreted as first-order risk aversion (see Masatlioglu and Raymond (2016)).

We ask series of eight hypothetical questions about their willingness to accept a risky opportunity, of the form: "Suppose that you can choose to pursue an opportunity where half of the time you could instantly earn a profit of $10 and the other half of the time you could instantly lose $X."[4] The values of X ranged from a loss $12 to a gain of $2, and we measure the minimum acceptable opportunity when respondents switched between rejecting and accepting the opportunity. Because the order in which respondents answer these questions may influence their switch point, we randomised whether questions started with the most favorable or least favorable opportunity and control for order in our empirical specifications.

Based on switch points, we calculate individual-specific loss aversion coefficients following Kőszegi and Rabin's (2006) model of reference-dependent utility. That is, an individual will accept this risky opportunity if his expected utility from the value is greater than zero, after adjusting for his gain-loss function. Individuals who accept all opportunities have a KR loss-aversion coefficient less than 1 (29 percent of respondents), suggesting they are loss loving. Individuals who reject all eight opportunities have a coefficient greater than 3 (19 percent of respondents). The average loss-aversion coefficient is 1.78, is in the loss aversion range of someone who would reject the opportunity of a 50% chance to win $10 if the loss is $6, but accept it if the loss is $4.

We incorporate these loss aversion questions into our main empirical specifications with a continuous measure of the KR loss-aversion coefficient. Table 1 also shows how the sample characteristics differ by wave. Respondents from each wave had different characteristics because we surveyed different neighborhoods and because the timing of Ramadan differed across the

[4] Although these questions are typically worded as a gamble, we adjusted the wording to be an "opportunity" after pilot testing revealed many subjects would reject all gambles because of religious objections to gambling.

years. All regression analyses control for survey wave, and some specifications include survey language, enumerator, survey day-of-week, survey month, and Census tract fixed effects.

d. Interventions and protocol

The exact interventions varied across survey wave. These are detailed below.

Wave 1 – 2013:

(a) $10 reminder: A reminder card that respondents could redeem for a $10 Visa gift card if they visited ACCESS to receive a preventive health service within 30 days

(b) $50 reminder card: Same as (a), but the Visa gift card was worth $50

(c) $10 gift card: A Visa gift card worth $10 that respondents could activate by visiting ACCESS to receive a preventive health service within 30 days

(d) $50 gift card: Same as (c), but the Visa gift card was worth $50.

The results described below show only treatments (b) and (d). Results including the $10 treatment arms are available in the appendix.

Wave 2 – 2014: Due to low take-up of the $10 treatments (a) and (c), we restricted our treatments to (b) and (d). We also added a reminder phone call for all participants.

Wave 3 – 2015: We include treatments (b) and (d), but members of both groups also received general health information about the importance of preventive health care.[5] We issued a reminder phone call for all participants.

Each incentive offer came with three additional pieces of information: a flyer about ACCESS and its location, a price list for common preventive health services available at the ACCESS clinic, and

[5] We added two new intervention groups in our 2015 wave: a control group and an information-only group. Because this paper focuses on effects of monetary incentives, we exclude both groups from the analysis presented here.

a flyer advertising a comprehensive recommended preventive health screening for adults, which was packaged at $50 for those without insurance.

Recipients had 30 days from the time of the survey to bring their coupon or gift card to ACCESS and obtain a preventive health service, and this date was noted with a sticker on the reminder or gift card. To mitigate potential salience differences between those with the reminder and the gift card, we also called respondents to remind them of the upcoming deadline in the second and third waves. We also ensured the cards had the same color, shape, and general appearance.

We randomised at the individual level, and the treatment was blind to the enumerator until after respondent completed the baseline survey, when he or she opened the sealed intervention envelope. We stratified our randomization by enumerator and by language of the respondent.

We test for balance across treatment arms, as shown in Table 2. We do see some evidence of covariate imbalance, as gift card members are less likely to be female and more likely to have private health insurance. The direction of the risk aversion questions (from least risky to most risky, or vice versa) is also marginally statistically significant. As a result, we can reject the null hypothesis that the set of covariates are equal between treatment and control groups at the five percent level. We note, however, that it is unlikely that interviewers would have manipulated treatment assignment, respondents of either treatment were still eligible for $50, and the duration of treatment delivery was the same between arms. We do control for the full set of Table 2 covariates in our preferred regression specifications.

Table 2: Demographic characteristics and balance tests

	$50 Reminder card (1)	$50 Gift card (2)	Joint equality of means, p-value (3)
Female	0.60	0.55	0.028**
Age	37.36	37.55	0.692
Married	0.58	0.57	0.685
Middle Eastern	0.68	0.69	0.312
Black	0.13	0.14	0.907
Hispanic	0.03	0.03	0.696
Number of children	4.43	4.30	0.192
Household size	1.71	1.60	0.166

Born in US	0.47	0.49	0.446
US citizen	0.86	0.89	0.194
HS graduate or less	0.46	0.45	0.776
Quality of health (1 = excellent, 6 = very poor)	2.60	2.69	0.104
# Preventive health visits past 12 mo., adults	3.80	3.90	0.784
# Preventive health visits past 12 mo., children	2.84	2.66	0.506
Know about ACCESS	0.80	0.79	0.942
Ever used ACCESS	0.45	0.40	0.152
Trust ACCESS	0.46	0.42	0.133
Loss aversion (Kosegi-Rabin)	1.78	1.79	0.980
Digit span	6.03	6.06	0.830
Raven's matricies (out of 3)	1.24	1.23	0.622
Have health insurance through employer or spouse	0.29	0.34	0.067*
Have public health insurance	0.46	0.41	0.055*
Have self-purchased health insurance	0.05	0.06	0.386
Have some other health insurance	0.00	0.01	0.566
# Emergency health visits past 12 mo., adults	1.50	1.36	0.332
# Emergency health visits past 12 mo., children	0.71	0.72	0.808
# Non-emergency health visits past 12 mo., adults	3.85	3.55	0.287
# Non-emergency health visits past 12 mo., children	2.67	2.46	0.411
Direction of risk aversion questions	0.46	0.51	0.078*
Observations	843	835	
Jointly predict treatment, SUR p-value		0.047**	

* p < 0.10, ** p< 0.05, *** p<0.01. All tests include language, wave, enumerator, month-year, and day-of-week fixed effects and report robust standard errors. Middle Eastern ethnicity question asked only in 2014 and 2015, and education asked only in 2015. Digit span and raven's matrices normalized in regressions. Joint balance p-value is based on chi-squared statistic from seemingly unrelated regressions for each covariate and its associated missing variable flag, with controls for fixed effects.

e. Outcomes

In this paper, we focus on one outcome: whether the participant went to the clinic in response to the incentive. We also conducted follow-up surveys, but there was substantial attrition and the data are not exploited in this paper.

f. *Heterogeneity*

As described above, we are particularly interested in the effect of loss aversion and the baseline trust in ACCESS. Unlike the assignment to treatment group, these individual characteristics are

not randomly assigned. To illustrate determinants of these key variables, Table 3 shows which factors predict baseline levels of loss aversion (columns (1) and (2), measured continuously) and trust (columns (3) and (4), measured as a binary variable).

The second column of Table 3 is the preferred specification predicting loss aversion, using KR loss aversion coefficients continuously. As described above, loss aversion is estimated from a series of questions about willingness to enter a risky venture with uncertain outcomes. After controlling for neighborhood and other factors, women and married individuals are somewhat more loss-averse. Those that exhibited higher Raven's scores were also slightly more loss-averse on average.

In the last columns of Table 3, we investigate the predictors of trust of our partner organization. The final column with fixed effects indicates that Arabic speakers are much more likely to trust ACCESS. Additionally, women, married individuals, and those who are not self-insured are more likely to trust ACCESS. In Appendix Table 4, we provide evidence that these factors are not responsible for the differential effect of Visa gift cards versus reminder cards among the more and less trusting.

Table 3: Determinants of trust and loss aversion

	Loss aversion, Kőszegi-Rabin		Trust Access	
	(1)	(2)	(3)	(4)
Female	0.104*	0.099*	0.063**	0.059**
	[0.059]	[0.059]	[0.026]	[0.026]
Age	-0.072	-0.106	0.068**	0.047
	[0.072]	[0.073]	[0.032]	[0.032]
Married	0.483***	0.455***	0.094**	0.078**
	[0.086]	[0.087]	[0.038]	[0.038]
Arabic speaking	0.004	0.170	0.203***	0.265***
	[0.093]	[0.108]	[0.040]	[0.045]
Middle Eastern	0.017	0.121	-0.117***	-0.050
	[0.095]	[0.125]	[0.040]	[0.051]
Black	-0.110	-0.041	-0.140**	-0.038
	[0.167]	[0.176]	[0.057]	[0.062]
Hispanic	0.000	-0.004	0.014	0.019
	[0.032]	[0.032]	[0.013]	[0.013]
Number of children	-0.003	-0.002	0.011	0.006
	[0.022]	[0.022]	[0.010]	[0.010]
Household size	-0.020	-0.003	-0.026	-0.010
	[0.076]	[0.080]	[0.035]	[0.036]
Born in US	0.058	0.058	0.018	0.009
	[0.098]	[0.098]	[0.045]	[0.045]
US citizen	0.015	0.032	-0.016	-0.012
	[0.098]	[0.104]	[0.038]	[0.038]
High school graduate or less	-0.016	-0.005	-0.004	0.002
	[0.028]	[0.028]	[0.011]	[0.011]
Quality of health (1 = excel., 6 = v. poor)	0.010	0.009	-0.001	0.000
	[0.006]	[0.006]	[0.002]	[0.002]
# prevent. health visits past 12 mo., adults	0.008	0.010	-0.004*	-0.004
	[0.010]	[0.010]	[0.002]	[0.002]
# prevent. health visits past 12 mo., child.	0.004	0.004	0.002*	0.003**
	[0.003]	[0.003]	[0.001]	[0.001]
Insured, employer/spouse	-0.048	-0.078	-0.038	-0.039
	[0.089]	[0.091]	[0.040]	[0.040]
Insured, public	-0.092	-0.076	0.001	-0.009
	[0.083]	[0.083]	[0.038]	[0.037]
Insured, self-purchased	-0.226	-0.237	-0.138**	-0.162***
	[0.139]	[0.148]	[0.063]	[0.062]
Raven's index score, normalised	0.075**	0.068**	-0.024*	-0.019
	[0.032]	[0.033]	[0.014]	[0.014]
Number recall score, normalised	-0.045	-0.065*	0.017	0.010
	[0.034]	[0.036]	[0.014]	[0.014]
Observations	1,497	1,497	1,386	1,386
R-squared	0.441	0.466	0.174	0.239
Enumerator, survey month, day-of-week and tract FE		X		X

* p < 0.10, ** p< 0.05, *** p<0.01. Missing values coded as zero, with missing flags included but not reported. Wave fixed effects included in all specifications. Controls for any other insurance, number of emergency health visits (adults and children), number of non-emergency health visits (adults and children), and order of loss-aversion questions included but not reported. Middle Eastern ethnicity question asked only in 2014 and 2015, and education asked only in 2015. Robust standard errors reported in brackets.

V. Results

a. Descriptive results

We first illustrate the unadjusted take-up rates in response to our randomly assigned treatments – Visa gift card and reminder cards. Figure 7 shows that take-up rates for the two $10 treatments are quite small – 3.6 percent for the reminder card and 5.6 percent for the Visa gift card – and not statistically distinguishable from zero or from each other.

Figure 7. Unadjusted take-up rates by treatment arm

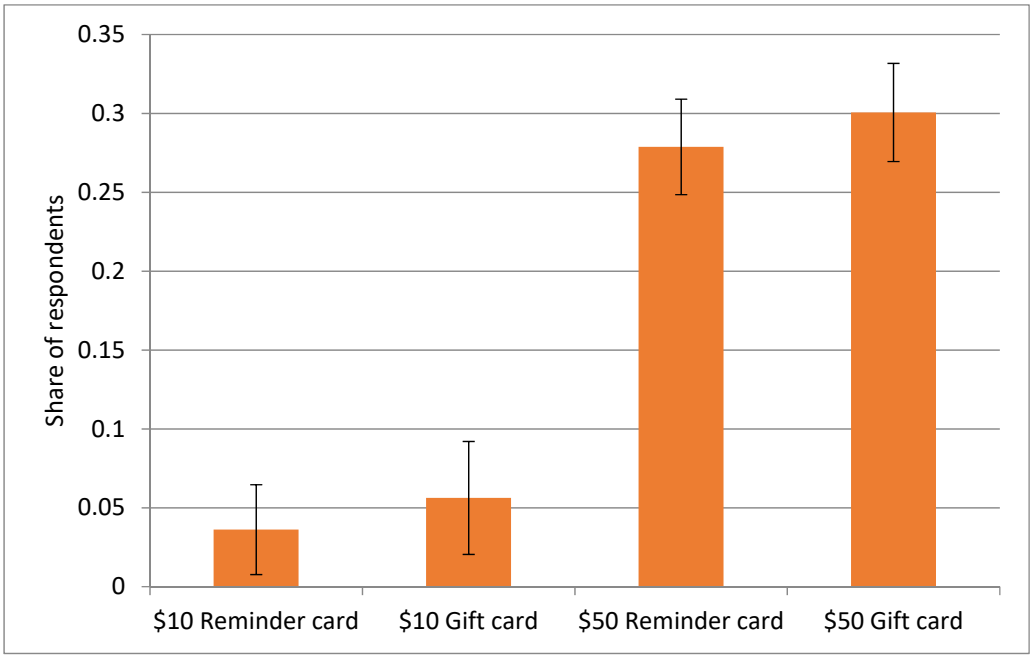


Figure 7 also shows that the $50 treatments do promote take-up. The $50 reminder treatment has a 28 percent take-up rate and the $50 gift card has a 30 percent take-up rate. These are not statistically distinguishable from each other at conventional levels (p=0.33 without controls and p=0.06 with controls, as shown in Appendix Table 1.) However, both $50 treatments are clearly distinguishable from the effect of the $10 treatments and from zero.

Regression results including the $10 treatments are presented in Appendix Table 1. Our preferred analyses control for language, enumerator, day-of-week, month-year, and tract fixed effects as

well as demographic characteristics. With these controls, a $50 incentive increases take-up by 21.0 percentage points relative to the $10 incentive. We exclude $10 treatment recipients in the remainder of the paper due to apparent small effects and lack of statistical power, though we note that our results are robust to their inclusion.

b. Loss Aversion

Now we turn to the relationship between loss aversion and the decision to visit the health clinic and redeem the incentive. Hypothesis 1a suggests that participants who exhibit higher loss aversion will have higher take-up rates. Hypothesis 1b implies that loss averse individuals will respond more to the Visa gift card incentive than the reminder card, and the gap will increase with the degree of loss aversion.

We start with a descriptive graph, Figure 8, in which we replicate the main results for all respondents in the $50 treatments as well as the sub-sample of 1497 respondents with $50 treatments for whom we have non-missing loss-aversion measures. The overall average difference in take-up between those who receive the $50 Visa gift card and $50 reminder card is about 2.2 percent. We then break participants into four groups according to their estimated loss aversion: loss loving (LA<1), low loss aversion (LA>=1 and LA<1.5), high loss aversion (LA>=1.5 and LA<3), and irrationally loss averse (LA>=3). The differences between gift card and reminder card redemption rates are 4-5 percentage points for more loss-loving participants and 1-2 percentage points for more loss-averse participants. These results are not statistically significant, and the point estimates present a pattern contrary to what one would expect if the gift card produced an endowment effect among the loss averse. There is no clear pattern linking loss aversion to take-up rates, nor to the gap in take-up rates between gift card and reminder treatments.

Figure 8. Relationship between loss aversion and take-up

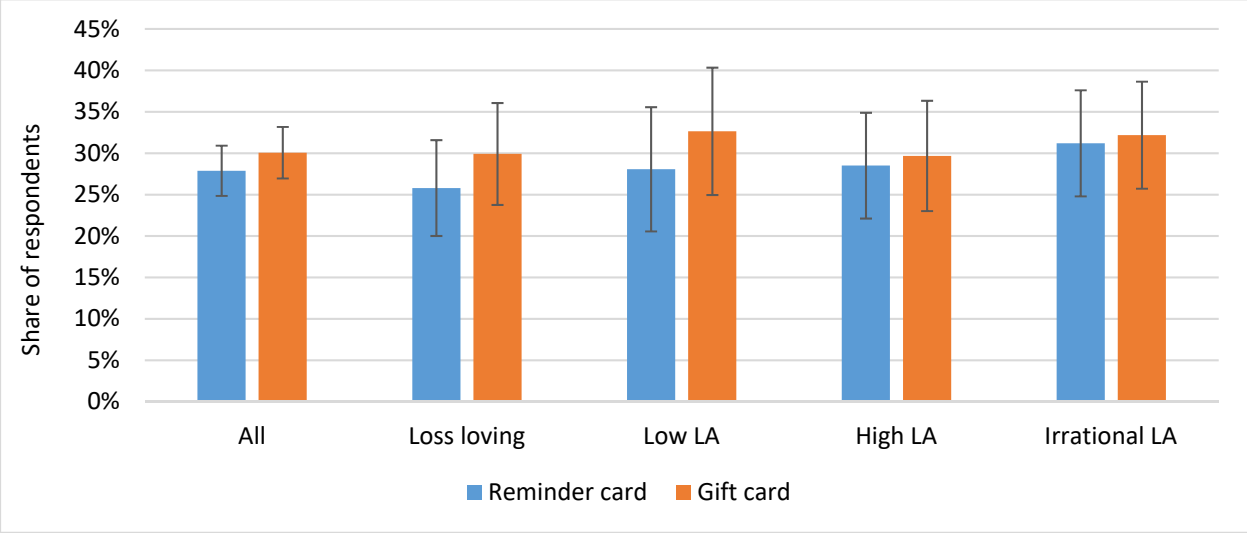


Table 4: Impact of loss aversion and incentive type on redemption

	Redeemed incentive			
	(1)	(2)	(3)	(4)
Loss aversion	0.001	-0.010	0.007	-0.002
	[0.010]	[0.015]	[0.015]	[0.013]
Gift card				0.030
				[0.036]
Gift card X Loss aversion				0.008
				[0.015]
Observations	1,678	843	835	1,678
R-squared	0.207	0.235	0.240	0.209
Sample	All	Coupon	Gift Card	All

*** p<0.01, ** p<0.05, * p<0.1. *All specifications include individual covariates, language, wave, enumerator, day-of-week, month-year, and Census tract fixed effects. See Table 3 and footnotes for list of individual covariates. Missing values coded as zero, with missing flags included but not reported. Interaction of gift card and missing loss aversion flag included but not reported. Robust standard errors reported in brackets.*

In the regression analysis presented in Table 4, we use a continuous measure of estimated loss aversion with dummies for missing loss aversion measures (coefficients not shown). In column (1), we see no relationship between measured loss aversion and take-up among the full sample. In columns (2) and (3), we divide the sample into those who randomly received a reminder card or Visa gift card. Column (2) again suggests no relationship for the reminder card group, which

we expect if the reminder card induced no sense of endowment. In column (3), we also see no statistically significant relationship between loss aversion and take-up among those who received the Visa gift card. This finding casts doubt on the notion that the Visa gift card created a sense of endowment among the loss averse.

In the final column of Table 4, we explore Hypothesis 1b. The hypothesis suggests that the gap in responsiveness to the Visa gift card versus the reminder card should be larger for the more loss averse. The interaction term is close to zero and statistically insignificant, providing no support for this conjecture. It does not appear that the loss averse are more responsive to the Visa gift card. The Table 4 evidence is inconsistent with the notion that the Visa gift card created a sense of "endowment" among participants.

An alternative explanation for the lack of significant findings in Table 4 is that we have a poor measure of loss aversion. It is indeed the case that measures of loss aversion were significantly affected by the order in which questions were asked, suggesting they may be unreliable. In addition, some participants refused to answer the questions for religious reasons, and a substantial fraction had answers that were outside normal ranges. We try alternative ways of coding the reported information, but no reasonable coding methods yields a compelling case that loss aversion predicts take-up. For example, Appendix Table 2 shows that using a categorical measure of loss aversion measure does not change the basic result.

We also asked an alternative set of loss aversion questions about whether the individual reports always using coupons or whether they ever forget to use rebates. Using these questions to create an alternative index of loss aversion does not substantively change the results (not shown).

Overall, our findings suggest loss aversion is not strongly linked to take-up, and we conclude that the Visa gift card does not produce an endowment effect in this context.

c. Trust

Next, we turn to the question of trust. Hypothesis 2a is that participants who trust our partner organization at baseline will have higher take-up rates. This is evident in the first column of Table 5 (Panel A). Those who "agree" or "strongly agree" with the notion that people at ACCESS could be trusted were 5.7 percentage points more likely to visit the health clinic to redeem the incentive.[6] Columns (2) and (3) of Table 5 break the sample into those who receive a reminder and those receive a Visa gift card. The estimated effect of trust is 12.0 percentage points for those who receive the reminder and is negligible for those who receive the Visa gift card.

As suggested by Hypothesis 2b, we expect that participants who receive the Visa gift card will have higher take-up rates than those who receive the reminder card, and this gap will be larger among those who do not trust our partner organization at baseline. Column (4) of Table 5 investigates this possibility. Participants without trust of the organization at baseline are much more responsive to the gift card treatment; the impact of the gift card is 9.1 percentage points for this group. The statistically significant interaction term in column (4) suggests that there is no comparable effect for those who do trust ACCESS at baseline. In fact, "trusters" are no more responsive to the gift card than to the reminder card. We surmise that the Visa gift card raises the perceived probability that individuals will receive an incentive payment relative to the reminder card for those who do not already trust the organization.

[6] This analysis considers those who have never heard of ACCESS to be "non-trusters." If we instead omit those respondents, the coefficient is similar at 0.053, significant at the 10-percent level.

Table 5: Impact of trust and incentive type on redemption

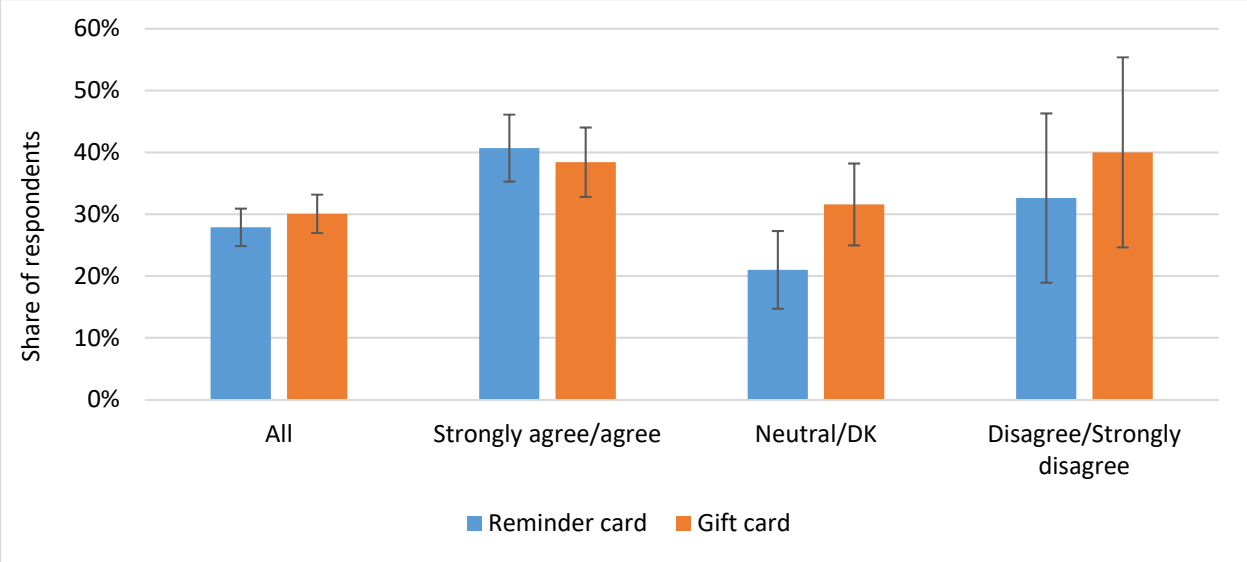
	Redeemed incentive			
	(1)	(2)	(3)	(4)
Panel A: Trust ACCESS				
Trust ACCESS	0.057**	0.120***	-0.000	0.107***
	[0.026]	[0.038]	[0.039]	[0.035]
Gift card				0.091***
				[0.029]
Gift card X trust ACCESS				-0.098**
				[0.048]
Panel B: Trust people				
Trust people	-0.036	-0.055	-0.008	-0.060*
	[0.023]	[0.035]	[0.033]	[0.033]
Gift card				0.009
				[0.039]
Gift card X trust people				0.047
				[0.046]
Panel C: Trust doctors				
Trust doctors	-0.029	0.031	-0.002	-0.033
	[0.031]	[0.031]	[0.021]	[0.029]
Gift card				0.010
				[0.029]
Gift card X trust doctors				0.062
				[0.042]
Observations	1,678	843	835	1,678
Sample	All	Reminder card	Gift card	All

*** p<0.01, ** p<0.05, * p<0.1. All specifications include individual covariates, language, wave, enumerator, day-of-week, month-year, and Census tract fixed effects. See Table 3 and footnotes for list of individual covariates. Missing values coded as zero, with missing flags included but not reported. Interaction of gift card and missing trust flag included but not reported. Robust standard errors reported in brackets.

Figure 9 shows the robustness of these results to a disaggregated trust measure, considering those who disagreed or strongly disagreed separately from those who felt neutral or had not heard of ACCESS. For those with less trust, the point estimate of the gift card redemption rate is 5 to 11 points higher than the reminder card redemption rate. The most pronounced effect of the Visa gift card is for those who are not familiar with ACCESS. By contrast, those who trust the

organization at baseline do not disproportionately respond to the gift card. Appendix Table 3 presents regression-adjusted disaggregated results, and the conclusions are the same.

Figure 9. Relationship Between trust and take-up



In Table 5, we also examine differential responsiveness using measures of trust that are not related to the organization *per se*. We ask respondents whether they trust people in general and whether they trust medical providers. We find that the effect is particular to trust of the organization, as there is no evidence that individuals' general trusting nature drives these results. Respondents who trust people in general or doctors are not differentially responsive to the gift versus reminder cards. This finding suggests that the effect of the Visa gift card for "non-trusters" is likely driven by the perceived probability that the incentive will be rewarded.

d. Is it Trust or Something Correlated with Trust?

One possible concern is that organizational trust is not randomly assigned and could be correlated with other factors that predict take-up (see Table 3). Though our main models control directly for these factors, they do not allow permit differential responses to the Visa gift card treatment. In Appendix Table 4, we test for differential treatment responses across several baseline characteristics, including the statistically significant correlates of trust we identified in Table 3. The apparent effect of trust is not dissipated by allowing the effect of the gift card to

vary by these observable factors. We cannot rule out the possibility that trust is correlated with an unobserved factor that also affects responsiveness to the Visa gift card rather than the reminder. However, the most likely explanation is that baseline trust of the organization matters.

VI. Conclusions

We conduct a field experiment that attempts to leverage insights from the behavioural literature to achieve a policy goal. In particular, we investigate whether participants are more responsive to a financial incentive to visit a health clinic if they gain a sense of ownership or endowment over the incentive. Though we focus on preventive health care, our findings speak more broadly to the take-up of social programs and the use of public incentives for desirable behaviour.

Our results suggest that our key treatment – a Visa gift card – does not convey a sense of endowment relative to a reminder card. We find no evidence that loss-averse recipients are more responsive to the incentives, nor are they particularly more responsive to the gift card treatment. Of course, the lack of endowment effect observed here is context specific. A Visa gift card may not have induced a sense of ownership among study participants on average, whereas another incentive design might have done so.

We do, however, see a group of participants that *are* particularly responsive to the Visa gift card: those that do not trust the organization at baseline. For those that already trust our partner organization, there is no difference in responsiveness between the reminder card and the Visa gift card. But the familiar and official nature of the Visa gift card may help those unfamiliar with the organization to feel confident their incentive payment will be forthcoming. This finding suggests that, rather than creating an endowment effect, the Visa gift card instead raises the perceived probability that the incentive will be delivered as promised.

Depending on the context, a range of incentive designs intended to evoke a sense of ownership to induce an endowment effect may simultaneously increase the perceived probability that the incentive will be paid as promised. Study participants likely have confidence that an incentive that is tangible or visible on one's bank statement will be delivered, but they may have doubts about future promises in some settings. Thus, researchers should take care in both study design

and interpretation to distinguish trust effects from endowment effects. The framing of an incentive as a "loss" rather than a "gain" may be effective even in the absence of behavioural biases because of rational responses to expected pay-offs.

The distinction between the endowment effect and trust is important from a practical perspective as well. If it is inexpensive to offer *ex ante* incentives, this could be a useful approach for policy-makers to maximise the effectiveness of incentives, regardless of the underlying reason for their effectiveness. However, *ex ante* incentives may be costly. Hannan et al. (2005) document in a lab setting that "punishment" contracts are perceived as unfair, and the reduced effort associated with unfairness partially offsets the gains that otherwise exist from the loss framing. In some contexts, there may be approaches to creating trust in an incentive that do not entail endowing study participants with the incentive *ex ante* or framing the incentive as a loss. Future research should attempt to distinguish between a sense of endowment and the perceived likelihood that incentives will be delivered.

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Appendix Table 1: Impact of treatment on redemption rate

	Redeemed incentive			
	(1)		(2)	(3)
$50 Gift card or reminder card	0.199***	0.210***		
	[0.027]	[0.026]		
$10 Gift card			0.020	0.019
			[0.023]	[0.026]
$50 Reminder card			0.199***	0.199***
			[0.030]	[0.030]
$50 Gift card			0.220***	0.239***
			[0.030]	[0.030]
Observations	2,004	2,004	2,004	2,004
R-squared	0.065	0.224	0.065	0.225
P-value, $50 coupon = $50 gift card			0.326	0.056*
Individual covariates		X		X
Language, enum., DOW, MY, and tract FE		X		X

*** p<0.01, ** p<0.05, * p<0.1. *See Table 3 and footnotes for list of individual covariates. Wave fixed effects included in all specifications. Missing values coded as zero, with missing flags included but not reported. Interactions of intervention indicators and missing loss aversion flag included but not reported. Robust standard errors reported in brackets.*

Appendix Table 2: Impact of loss aversion and incentive type on redemption, disaggregated

	Redeemed incentive			
	(1)	(2)	(3)	(4)
Low loss aversion	-0.013	-0.007	-0.030	0.010
	[0.035]	[0.048]	[0.056]	[0.046]
High loss aversion	-0.004	-0.008	0.007	0.001
	[0.037]	[0.051]	[0.058]	[0.046]
Irrational loss aversion	0.008	-0.028	0.024	-0.001
	[0.038]	[0.056]	[0.056]	[0.049]
Gift card				0.048
				[0.043]
Gift card X Low LA				-0.046
				[0.068]
Gift card X High LA				-0.006
				[0.062]
Gift card X Irrational LA				0.023
				[0.060]
Observations	1,678	843	835	1,678
R-squared	0.207	0.235	0.241	0.210
P-value, loss aversion = 0	0.653	0.662	0.951	0.658
P-value, Gift card X LA = 0				0.787
Sample	All	Reminder card	Gift Card	All

*** p<0.01, ** p<0.05, * p<0.1. All specifications include individual covariates, language, wave, enumerator, day-of-week, month-year, and Census tract fixed effects. See Table 3 and footnotes for list of individual covariates. Missing values coded as zero, with missing flags included but not reported. Interaction of gift card and missing loss aversion flag included but not reported. Robust standard errors reported in brackets.

Appendix Table 3: Impact of trust and incentive type on redemption, disaggregated

	Redeemed incentive			
	(1)	(2)	(3)	(4)
Trust ACCESS: Strongly agree/agree	0.064*	0.133***	0.014	0.114***
	[0.035]	[0.048]	[0.053]	[0.042]
Trust ACCESS: Neutral/DK	-0.001	0.026	-0.006	0.014
	[0.032]	[0.045]	[0.049]	[0.040]
Trust ACCESS: Disagree/strongly disagree	0.037	0.085	0.015	0.060
	[0.059]	[0.082]	[0.088]	[0.077]
Gift card X Strongly agree/agree				-0.007
				[0.038]
Gift card X Neutral/DK				0.060*
				[0.033]
Gift card X Disagree/strongly disagree				0.049
				[0.103]
Gift card X Never heard of ACCESS				0.092**
				[0.040]
Observations	1,671	838	833	1,671
R-squared	0.208	0.248	0.236	0.212
Sample	All	Reminder card	Gift Card	All

*** p<0.01, ** p<0.05, * p<0.1. All specifications include individual covariates, language, wave, enumerator, day-of-week, month-year, and Census tract fixed effects. See Table 3 and footnotes for list of individual covariates. Missing values coded as zero, with missing flags included but not reported. Interaction of gift card and missing trust flag included but not reported. Robust standard errors reported in brackets.

Appendix Table 4: Impact of incentive type and trust on redemption, heterogeneity

	Interacted covariate								
	Female	Age	Married	Born in US	Arabic speaker	Insured	Self-purchased insurance	Very good health	High aptitude
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Trust ACCESS	0.098**	0.095**	0.097**	0.096**	0.094**	0.095**	0.095**	0.096**	0.096**
	[0.038]	[0.038]	[0.039]	[0.039]	[0.039]	[0.038]	[0.038]	[0.038]	[0.038]
Gift card	0.073**	0.085**	0.082**	0.091**	0.092***	0.092*	0.088***	0.072**	0.099***
	[0.037]	[0.036]	[0.034]	[0.041]	[0.030]	[0.053]	[0.030]	[0.034]	[0.038]
Gift card X trust ACCESS	-0.095**	-0.093*	-0.097**	-0.094*	-0.091*	-0.093*	-0.092*	-0.091*	-0.094**
	[0.048]	[0.048]	[0.049]	[0.049]	[0.049]	[0.048]	[0.048]	[0.048]	[0.048]
Covariate	0.071**	-0.052	0.048	-0.047	0.126***	-0.291	-0.057	0.020	0.004
	[0.030]	[0.046]	[0.033]	[0.037]	[0.043]	[0.187]	[0.068]	[0.044]	[0.042]
Gift card X covariate	0.030	0.009	0.016	-0.002	-0.009	-0.002	0.034	0.039	-0.016
	[0.042]	[0.042]	[0.042]	[0.043]	[0.051]	[0.053]	[0.086]	[0.042]	[0.043]
Observations	1,678	1,678	1,678	1,678	1,678	1,678	1,678	1,678	1,678
R-squared	0.221	0.221	0.221	0.220	0.220	0.220	0.221	0.221	0.221

*** p<0.01, ** p<0.05, * p<0.1. All specifications include individual covariates, language, wave, enumerator, day-of-week, month-year, and Census tract fixed effects. See Table 3 and footnotes for list of individual covariates. Heterogeneity covariates in columns 1 and 3-7 defined as binary variables equal to 1 for respondents with that characteristic. Age equals 1 if the respondent is older than the sample median age of 35. Very good health equals 1 if the respondent reports having "excellent" or "very good" health in the past month, and high aptitude equals one if the respondent's averaged Raven's test and digit span results are in the top half of the distribution. Missing values coded as zero, with missing flags included but not reported. Interactions of gift card and missing loss aversion flag, along with gift card and missing covariate flag, included but not reported. Robust standard errors reported in brackets.