



RESEARCH ARTICLE  

Paying for growth or goods: Tax morale among property owners in Lagos

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Abstract



What motivates property owners to pay taxes in places where state enforcement is weak? Using an online experiment among property owners in Lagos, Nigeria, we evaluate the effectiveness of different appeals at increasing respondents' *tax morale*—willingness to pay taxes absent enforcement—and attitudes about government enforcement of tax collection. Respondents were randomly assigned to read either a vignette emphasizing the role of property tax revenues in contributing to economic growth and increased property values or one highlighting that tax revenues are used for public goods and services benefiting all residents. The growth and property values message made respondents significantly more favorable toward enforcement of tax collection, but there was no difference in willingness to pay between the two conditions.

Keywords: taxation; tax morale; property tax; survey experiment; facebook advertising; Lagos; Nigeria

Introduction

In many countries, property taxes present a largely untapped opportunity for substantial local government revenue. Property taxes are also appealing as a progressive tax on wealth rather than income or consumption. Recently, property tax has become a priority for governments in Africa (Moore et al., 2018), where, in 2019, it made up only 1.9% of total tax revenues, on average, across countries on the continent (OECD/AUC/ATAF, 2021). Missed opportunities for property tax revenue may be due to an absence of government enforcement, lack of citizen compliance, or both. Most governments rely on some degree of voluntary compliance from citizens (Levi, 1988; Alm et al., 1992). Understanding how to

[†]Both authors contributed to the design and to writing, while NW ran the focus groups and experiment and conducted the analyses.

  This article has earned badges for transparent research practices: Open Data and Open Materials. For details see the [Data Availability Statement](#).

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increase citizens' willingness to pay taxes even absent enforcement, known as "tax morale" (Torgler, 2002; Luttmer and Singhal, 2014), may improve citizen-state relations and inform government policy.

Theories of tax morale are typically rooted in fiscal exchange theory, which posits that citizens pay taxes in exchange for government provision of desired infrastructure and services (Alm et al., 1993). Many governments try connecting service delivery with tax payment to motivate compliance. But what types of messaging about service delivery work best among property owners? In particular, does pointing out the connection between government spending and owners' property values and local economic growth instill more positive attitudes toward property taxes?

We examine these questions using data from an online survey experiment with over 4,000 property owners in Lagos, Nigeria, recruited through Facebook. Lagos is a particularly good context to explore these questions. While it is often highlighted as a successful example of expanding and improving tax collection (de Gramont, 2015; Cheeseman and de Gramont, 2017), gaps in compliance still exist, particularly for property taxes.

To test the pathway through which state investment in services affects tax morale among our sample of property owners, we construct hypothetical vignettes that vary whether a government road project is framed as a public service that improves quality of life for all residents or framed in terms of an investment that will positively impact owners' property values via local economic growth. Holding the type of good being provided (i.e., road) constant but varying the explicit connection to either contributing to economic growth and increasing property values ("economic growth and property values") or serving a whole community ("public services") provides insights into what influences tax morale.

We find that highlighting the benefit of the road for economic growth and property values – relative to public services – leads to a greater increase in support for government enforcement of property tax payment. We find no difference in tax morale. Preliminary evidence suggests that this result may be driven by the fact that respondents who are reminded that the road contributes to economic growth and an increase in property values more strongly believe that tax revenues benefit property owners more than tenants.

Explanations of tax morale among property owners

One of the most common explanations for tax morale is reciprocity generated by the goods and services citizens receive from the government (Luttmer and Singhal, 2014). When investigating the terms of the fiscal contract for property owners specifically, we should consider whether this population has unique preferences over public investment that influence their willingness to pay taxes. Research from high-income countries highlights the priority homeowners place on maximizing their property values (Fischel, 2001; Fischel, 2005; McGregor and Spicer, 2016). A variety of high-quality public services, such as good schools (Chin and Foong, 2006), public transportation (Dubé et al., 2013), roads (Gonzalez-Navarro and Quintana-Domeque, 2016), fire, police, and emergency medical services

(Dronyk-Trosper, 2017), can positively affect property values through capitalization effects, in which home values absorb the benefits of public investments. Evidence suggests that whether and how these constituents vote is driven by their demand for government policies that improve, or at least preserve, the value of their greatest asset, their home (Fischel, 2005; Trounstine, 2018).

In our setting, we expect that *making salient the impact of government investments on property values via local economic growth funded through tax revenues should increase tax morale more than appeals about public services that do not explicitly mention their effect on property values or growth.*¹

Data and research design

The primary data source is an online survey of property owners in Lagos conducted in October 2021. Lagos is emblematic of states with weak tax enforcement but high potential revenues and government interest in motivating voluntary compliance. To examine our main question of interest – what types of appeals work best to motivate property tax morale in Lagos – we used experiments that varied the salience of different benefits of investments of tax revenue. We recruited respondents using targeted Facebook advertisements, which included a link to the survey (Rosenzweig et al., 2020). The sampling frame for the survey included Facebook-using property owners 18 and older currently residing in Lagos State.² This study focused on testing causal claims among this non-representative sample, but our ability to generalize the findings to all property owners in Lagos is limited.³ While power analyses based on pilot data ($N = 302$) indicated that a sample size of 3000 would be sufficient to detect our main effects, we decided to maximize the sample we could attain with our budget and increased our target to 4000.

The vignette and survey questions focus on the Land Use Charge (LUC), which was introduced in Lagos State in 2001 as a consolidation of all property-related charges and is collected yearly.

Measurement

Attitudes toward taxation, the main outcomes of interest, were asked before and after the experimental vignettes. Previous research has found that concerns about anchoring effects are overblown and that the added precision from a pre/post-test design outweighs potential concerns (Clifford et al., 2021). Because we randomized treatment, we control for the pre-treatment measure rather than modeling the pre-post-change, which unnecessarily increases standard errors (Blair et al., 2019). The two main attitude measures are as follows:

¹We also prespecified hypotheses about identity and tax morale, which are not the focus of this paper and are in Appendix H.

²Those who reported in screening that they were less than 18, did not own property, or did not reside in Lagos State were told they were ineligible. After data collection began, we added an additional screener for which respondents entered a number shown in image format. However, only 58 people were removed for this reason. Further, Qualtrics flagged only 2.7% of responses as likely bots. Results are robust to excluding these observations (see Appendix D).

³See Appendix B.1 for more on how our sample differs from representative surveys of Lagos.

- Willingness to pay LUC even if the government did not check to make sure (*WTP self*): 5-point scale from “Strongly agree” to “Strongly disagree.”
- Support for the government’s right to make property owners pay LUC (*Support enforcement*): 5-point scale from “Strongly agree” to “Strongly disagree.”

The first measure, *WTP self*, is a straightforward measure of the respondent’s self-reported willingness to comply, or *tax morale*, since it specifies the absence of government monitoring and enforcement. The second measure, *Support enforcement*, measures the perceived right of the government to demand that people pay LUC. We included this measure because there may be constraints on willingness to pay, such as one’s financial situation, that are unrelated to citizens’ perceptions of the government’s right to enforce. Therefore, this second measure captures people’s preferences over the state’s actions.

Since paying taxes also contributes to the public good, social norms of contributing (or not contributing) may exist. Since the decision to contribute to a public good or free ride may rely on expectations of others’ behavior, we also asked about these beliefs.

- The percentage of others taking the survey the respondent expects would pay LUC if the government did not check (*WTP others*): 0–100.⁴

Finally, we included one behavioral measure – clicking on a link to access the Lagos On-Line Assistant (LOLA), a WhatsApp-based platform that can be used to pay LUC bills or to get more information. This provides a sense of respondents’ interest in engaging with the LUC and is more costly than answering a survey question. The *Link click* outcome is coded as 0 or 1, and there is no baseline measure.⁵

Experimental vignette

We measure the extent to which Lagos property owners are driven by home values using a vignette experiment. Participants read a short vignette that varied whether a road project touts (1) the provision of services to improve quality of life for the local population or (2) benefits related to property values and economic growth. Respondents were randomly assigned to one of the two vignettes with equal probability, within blocks defined by which Facebook ad brought them into the

⁴The order of this item and *WTP self* was randomized for respondents. The correlation between the two measures at baseline is $r = 0.28$ and the two items are only slightly more correlated if we ask about others first.

⁵Other post-treatment items included support for redistribution and whether landlords or tenants benefit more from the project. Although we listed support for redistribution as an outcome of interest in our pre-analysis plan (Appendix H), we do not report it here because it is less directly related to attitudes toward taxes. Results for this outcome were null. We also asked about national versus ethnic identity and whether respondents wanted to donate their incentive to an NGO. There was also a post-treatment demographics block about employment, income tax, and other personal characteristics that should be unaffected by treatment.

survey, since random assignment happens after people click on the ad and there are likely correlations between people coming from the same ad.⁶ Assignment to treatment is balanced across age, gender, whether or not respondents have a college education, Yoruba or non-Yoruba,⁷ and self-reported class. An outline of this section of the survey with the text of the two experimental vignettes is in Table 1.⁸

The vignettes focus on roads for several reasons. First, from focus group discussions we learned that road improvements are very important and salient to Lagosians.⁹ When participants talked about how well the government was performing – particularly in terms of using property tax revenues – they often referenced the state of the roads, especially those in their immediate area. Additionally, to better isolate the causal mechanism driving responses, we chose to vary the framing of the benefit of the same project rather than varying the public good being provided (for instance, if we varied whether the government was improving a road or renovating a school building). By holding the public service constant, we can better isolate what types of appeals shape people’s willingness to pay property taxes. Finally, focusing on roads may have also improved realism. When asked earlier in the survey what the Lagos State Government uses LUC revenues for, “Roads” was the most frequently selected option (43.3%).¹⁰ Before the vignette, we made it clear to respondents that the story was not real but was based on the types of projects the government might actually undertake with tax revenues.

Results

First, we look at what happens when respondents are provided with information about government investment in improving roads, regardless of how this benefit is framed. We test this using paired t-tests on the differences between the pre-treatment and post-treatment measures of these variables, pooled across conditions. We find that making salient a government road project using tax revenues is associated with a significant increase in one’s own willingness to pay taxes (mean of differences = 0.12; $p < 0.00$; $N = 4266$), support for enforcement (mean of differences = 0.19; $p < 0.00$; $N = 4274$), and expectations about others’ willingness to pay taxes (mean of differences = 2.08; $p < 0.00$; $N = 4264$).

Of course, these findings may be due to a survey design effect. Since we did not include a pure control condition, we cannot rule out the possibility that respondents just positively increase their response the second time they are asked the same question, which they otherwise would have done even if they had not been shown any vignette.¹¹ The primary focus of this paper is the difference in post-treatment

⁶Six different ads targeted different groups of people but were identical in the information provided. More details are in Appendix A.1.

⁷Yoruba is the largest ethnic group in Lagos.

⁸We also randomized an identity prime displayed above the road vignette, which is not the focus of this paper.

⁹See Appendix A.2 for more on the focus group discussions.

¹⁰The second most frequently selected option was “Public facilities (e.g., schools, hospitals)” (39.6%), followed by “Security” (30.5%).

¹¹Further, this hypothesis was not specified in our Pre-Analysis Plan (Appendix H).

Table 1. The flow of survey questions including the experimental treatments and outcome measures. Differences between the two appeals are marked in **bold text**

Pre-Treatment (Outcome) Questions:	
<ul style="list-style-type: none"> The Lagos State Government always has the right to make property owners pay Land Use Charge (LUC). [Strongly agree to Strongly disagree] 	
<ul style="list-style-type: none"> I would be willing to pay Land Use Charge (LUC), even if the government did not come to check to make sure I had paid it. [Strongly agree to Strongly disagree] 	
<ul style="list-style-type: none"> If you had to guess, what percent of other people taking this survey (who are all landowners in Lagos) do you think would be willing to pay Land Use Charge (LUC), even if the government did not check to make sure they had paid it? [0–100] 	
Instructions:	
On the next page, you will see information about a hypothetical road improvement project. Although the details are made up, the information is based on actual recent improvement projects that the Lagos State Government has completed, and so you should think of this as a project that the Lagos State Government could do in the future.	
You will be held on the next page for 15 seconds to give you time to read about the road improvement project, and then you will see the arrow button appear to allow you to move forward. We will ask you some questions about the road project later, so please make sure you read carefully.	
Vignette:	
LASG Improves Roads in Lagos	LASG Improves Roads in Lagos
to Improve Quality of Life	to Promote Economic Growth
The Lagos State Government has recently completed the tarring of 50 km of roads across the state. The government also installed streetlights and drainages as part of the project.	The Lagos State Government has recently completed the tarring of 50 km of roads across the state. The government also installed streetlights and drainages as part of the project.
This is an important public good that will benefit everyone in the area and will improve residents’ quality of life. The government is seeking to develop Lagos into an environment with adequate services for the population.	This is an important investment in the economic growth of the area and will improve owners’ property values. The government is seeking to develop Lagos into a 21st-century economy.
This project is funded by revenues from the Land Use Charge	This project is funded by revenues from the Land Use Charge.
Factual Manipulation Check:	
What is the main benefit that was highlighted in the text that you read? [Economic growth and higher property values, Better quality of life for residents and service provision, Less traffic, I don’t remember]	
Post-Treatment (Outcome) Questions:	
<i>[Repeat of Pre-Treatment Questions]</i>	
Link Click Measure: We wanted to let you know about a new platform for getting information about and paying the Land Use Charge in Lagos State: . . . [more information about the platform] . . . You can click this link to open the platform in a new window: https://wa.me/2348154333883	

attitudes between respondents who were randomly assigned to each of the two different vignettes.

The specification we use to measure this is:

$$Y_{i,post} = Y_{i,pre} + D_i + B_i + e_i$$

where $Y_{i,post}$ is the post-treatment measurement of the dependent variable, $Y_{i,pre}$ is the pre-treatment value of the same measure, and D_i is an indicator for treatment status. B_i is an indicator for block dummies, since we block randomize based on which particular Facebook ad people enter the survey through.¹² Most outcomes are on a 5-point scale. Again, we include pre-treatment measures to increase precision.

The behavioral measure – clicking a link to access the Land Use Charge WhatsApp platform, which allows for bill payment and inquiries – was not measured at baseline. For this outcome, we estimate:

$$Y_i = D_i + B_i + e_i$$

Comparing the two randomly assigned vignettes allows us to identify the effect of making salient economic growth and increased property values compared to the provision of basic services in the context of a road renovation. We find that making economic growth and property values salient increases support for enforcement relative to highlighting public services. While the coefficient on willingness to pay has the same sign, it is not statistically significant. We find no difference in respondents' expectations of others' tax morale between the two vignettes.¹³

The results are summarized in Fig. 1.¹⁴ The points represent pre- and post-treatment means broken out by treatment condition. The only outcome for which we find a significant effect is support for the state's right to enforce tax payment ($p = 0.02$).¹⁵ Panel A in Fig. 1 shows how respondents who saw the growth and property values framing were more accepting of the state's enforcement of tax payment.¹⁶ Among those who saw the services message, support (including strong support) of the government's right to enforce tax payment increases by 5.2 percentage points; among those who saw the growth and property values message, support increases by 8.4 percentage points.

¹²However, all findings are robust to dropping these dummies, which is still causally identified since the probability of assignment to treatment was equal across blocks.

¹³We prespecified heterogeneous treatment effects by having tenants and by class, which are presented in Appendix H. Those with tenants are more likely to click the link but less supportive of tax enforcement when presented with the growth/property values appeal. Respondents who identify as poor are more supportive of tax enforcement when presented with the growth/property values appeal.

¹⁴The corresponding regression results are in Table C.1 in the Appendix.

¹⁵Reported p -values are from the main specification with block fixed effects unless otherwise noted, although the plots show group means without the block indicators. Conclusions remain the same with or without inclusion of block fixed effects.

¹⁶On the enforcement outcome, for the service condition, the unconditional pre-treatment mean was 3.90 ($sd = 1.19$, $N = 2169$), and the post-treatment mean was 4.07 ($sd = 1.11$, $N = 2125$). For the growth condition, the pre-treatment mean was 3.89 ($sd = 1.21$, $N = 2206$), and the post-treatment mean was 4.12 ($sd = 1.05$, $N = 2149$). Respondents in the growth and property values treatment increase their support for enforcement by 0.07 more on the 5-point scale than those in the service condition or 0.059 standard deviations of the pre-treatment distribution.

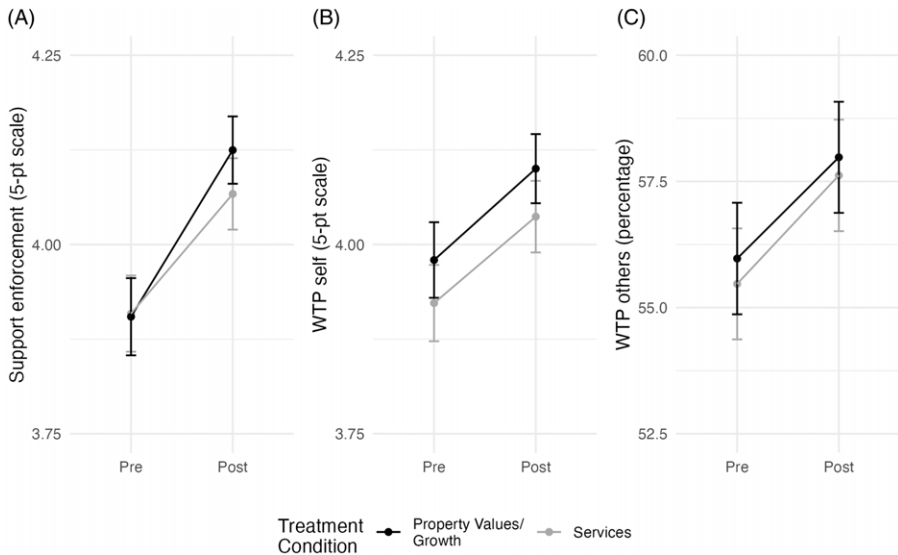


Figure 1. Changes in attitudes toward taxation by appeal type.

One's own willingness to pay taxes also increases more with the growth and property values framing, although it does not reach statistical significance ($p = 0.28$).¹⁷ The change in people's opinions about *others'* behavior is close to zero ($p = 0.77$).¹⁸ With respect to the behavioral measure, those who saw the public services frame were more likely to click on a link about LUC ($p = 0.07$).¹⁹ Interestingly, both pre-treatment and post-treatment measures of tax morale are negatively correlated with clicking on the WhatsApp link. This association suggests that while clicking on the link may indicate interest in learning more about LUC, it is not necessarily related to one's own willingness to pay.

These results are in line with the hypothesis that property owners will be motivated by a desire to increase their property values – since enforcement contributes to the generation of tax revenues. However, the fact that we do not see statistically significant results for individual willingness to pay suggests that preferences may diverge and appeals for voluntary tax compliance vary in their effectiveness when it comes to an individual's willingness to pay versus their normative attitudes about enforcement. Property owners may see the tax as more legitimate given the benefits they receive but still be unwilling to pay themselves.

¹⁷On the tax morale outcome, for the service condition, the unconditional pre-treatment mean was 3.92 ($sd = 1.19$, $N = 2165$), and the post-treatment mean was 4.04 ($sd = 1.11$, $N = 2120$). For the growth and property values condition, the pre-treatment mean was 3.98 ($sd = 1.18$, $N = 2194$), and the post-treatment mean was 4.10 ($sd = 1.08$, $N = 2146$).

¹⁸On the tax morale of others outcome, for the service condition, the unconditional pre-treatment mean was 55.39 ($sd = 25.75$, $N = 2162$), and the post-treatment mean was 57.62 ($sd = 25.95$, $N = 2119$). For the growth and property values condition, the pre-treatment mean was 55.81 ($sd = 26.21$, $N = 2193$), and the post-treatment mean was 57.98 ($sd = 26.00$, $N = 2145$).

¹⁹In the service condition, 4.6% clicked the link (out of $N = 2410$) while only 3.7% of those who saw the growth and property values vignette clicked (total $N = 2452$).

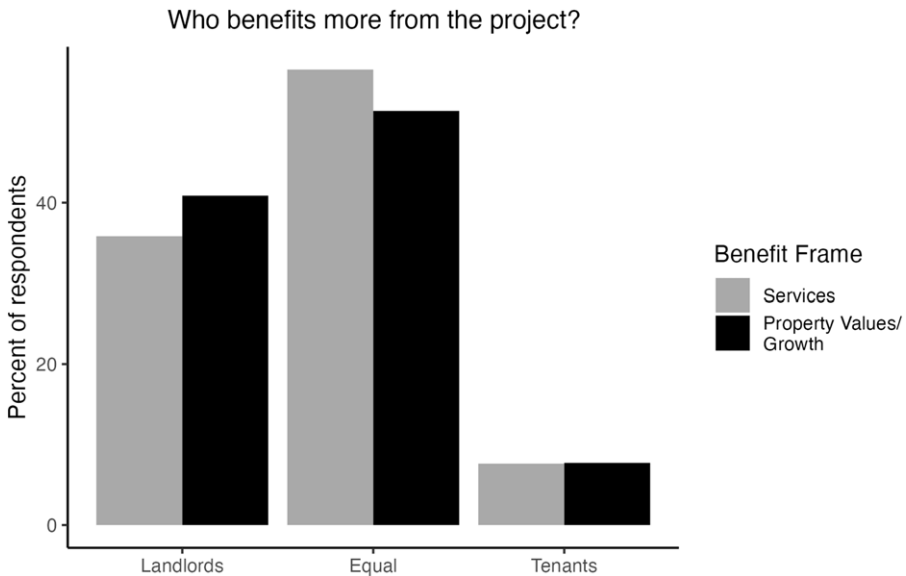


Figure 2. Perceptions of who benefits most from the road project based on appeal type.

One potential concern is that although the two versions of the vignette *emphasized* different benefits of the road project – either increasing property values and growth or improving quality of life – roads do both. Therefore, someone who received the framing about services that benefit the whole community may have still been thinking about how the road would improve property values via economic growth and vice versa. One key difference between the two benefits is that while service delivery is a benefit for all residents, only property owners directly benefit from an increase in property values. To investigate this, we asked respondents whether they think landlords (a term that colloquially refers to property owners) or tenants would benefit more from the road.²⁰ Respondents assigned to the growth and property values vignette more frequently reported that the project would benefit landlords more (Fig. 2). Using the 5-point scale, the difference in means between vignette conditions is statistically significant ($p = 0.002$).²¹ In turn, those who believe that landlords benefit more than tenants are more likely to express willingness to pay and are more supportive of the government's right to enforce ($p = 0.02$; $p = 0.006$).²² However, the fact that many people did *not* recognize that rising property values and economic growth should benefit property owners more than tenants might suggest that our treatment only weakly primes this consideration, making the effect on enforcement preferences notable.

²⁰ Respondents could choose whether landlords will benefit a lot more, a little more, they will benefit the same amount, or tenants will benefit a little more or a lot more.

²¹ This was not prespecified (see Appendix H).

²² Beliefs about who benefits do not predict beliefs about others' willingness to pay, however. This suggests that people are not simply treating the question about others as a proxy for their own attitudes.

Discussion

This study improves our understanding of what influences tax morale and attitudes toward tax enforcement among a sample of property owners in a lower-middle-income country. By holding constant the government project and varying the framing of the tax revenue benefit – an improvement in service delivery or increasing local economic growth and property values for owners – we examined which appeal is more successful along these two dimensions. The findings suggest that while there is no difference in willingness to pay taxes when government projects are linked to local economic growth and property values, property owners are more supportive of the government’s right to enforce tax payment. One important limitation of the study is that the sample of social media-using property owners may not be representative of the full population of property owners in Lagos. Future research should examine if similar appeals are effective among a representative sample of property owners in Lagos, as well as among property owners in other cities.

The extent to which concerns about property values and local economic growth enter into citizens’ tax compliance decisions is less often considered in low- and middle-income countries, despite the fact that purchasing land and buildings is a popular mode of investment in African cities (Kangave et al., 2016; Goodfellow, 2017). Given this study found that property owners’ support for government enforcement of tax payment can be increased when reminded of the economic growth and property value benefits associated with paying taxes, future research should examine whether such appeals are also effective at motivating behavior in the form of tax *payments*.

Supplementary material. The supplementary material for this article can be found at <https://doi.org/10.1017/XPS.2023.27>

Data availability. The data, code, and any additional materials required to replicate all analyses in this article are available at the Journal of Experimental Political Science Dataverse within the Harvard Dataverse Network, at: doi: <https://doi.org/10.7910/DVN/YYHNGS> (Wilson and Rosenzweig, 2023).

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Competing interests. The authors declare no conflicts of interest.

Ethics statement. This research was approved by the Massachusetts Institute of Technology (MIT) Committee on the Use of Humans as Experimental Subjects (Protocol #2005000153) and adheres to APSA’s Principles and Guidelines for Human Subjects Research. Further details are provided in Appendix E.

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