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Training Minds, Shaping Policies:

Evidence from a Behavioral Economics Course for Public Officials

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Abstract

Cognitive biases are pervasive, even among policymakers whose decisions have far-reaching welfare consequences. Yet little is known about whether scalable training can mitigate policymakers' biases. This paper provides evidence from a randomized controlled trial embedded in an online behavioral economics course for public officials in Latin America and the Caribbean. Participants were randomly assigned to complete a seven-item diagnostic test either before or after the course, measuring cognitive reflection, applied behavioral knowledge, and policy-approach preference. Those tested afterward scored 0.87 standard deviations higher on average, with especially large gains in applied reasoning and problem solving. These results, robust to within-subject comparisons, suggest that short, structured online training can enhance reasoning relevant to public decision-making. The findings both highlight the potential of large-scale cognitive training to improve public sector performance and motivate further research on its policy impact.

JEL classifications: D91, C93, H83

Keywords: Behavioral Economics, Training Evaluation, Public Policy, Policymakers, Online Education, Field Experiment

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1 Introduction

Why do some public policies fail despite policymakers’ good intentions? One answer is that policymakers, like everyone else, are prone to cognitive biases (Banuri et al., 2019; Battaglio Jr et al., 2019; Kuehnhanss and Heyndels, 2018). While these biases are well documented among citizens and consumers, far less is known about whether—and how—we can de-bias those who design and implement policy. This paper tests whether a brief online behavioral economics training course can improve public officials’ reasoning and decision-making.

Behavioral science has transformed our understanding of human decision-making, revealing the systematic ways in which individuals deviate from rational-actor models (Achtziger et al., 2014; Artiga González et al., 2024; Brocas and Carrillo, 2014; Camerer et al., 2005; DellaVigna, 2009; Kahneman, 2011). These deviations, such as loss aversion, overconfidence, and reliance on heuristics, are not only predictable but potentially malleable (Brookins et al., 2014; Cherry and Shogren, 2007; Comerford, 2011; Dolan et al., 2012; Hügelschäfer and Achtziger, 2014; Posten et al., 2014). Prior work shows that cognitive reflection can be enhanced through training (Lades, 2014; Morewedge et al., 2015; Sellier et al., 2019) and that awareness of one’s biases can reduce discriminatory or suboptimal behaviors (Pope et al., 2018). Recent studies suggest that training may represent a promising way to improve decisions, performance, and job satisfaction (Banerjee et al., 2021; Budría, 2012; Busso et al., 2023; García et al., 2013; Ravaghi et al., 2021). Yet few studies have tested whether policymakers can be de-biased through scalable training programs. Can behavioral science not just diagnose bias, but help cure it?

We provide results from a randomized controlled trial embedded in a widely accessible online course on behavioral economics for Latin American public officials. Decision-making and cognitive skills were measured using a diagnostic test that combined three Cognitive Reflection Test (CRT) items (Frederick, 2005; Primi et al., 2016; Toplak et al., 2014) with three scenario-based questions assessing behavioral principles, such as framing, loss aversion, and incentives, and one item eliciting a choice between a structural and a behaviorally oriented policy instrument. Participants who completed the course scored 0.87 standard deviations higher on average ($p < 0.001$), with especially large gains in applied behavioral scenarios. These results suggest that modest, scalable interventions can strengthen cognitive processes of direct relevance for policy design.

The results show that online behavioral science education can foster not only knowledge transfer but also a stronger ability to approach decision-making problems. They also

emphasize the need to identify effective methods for training decision-makers to overcome cognitive pitfalls under pressure, a pressing challenge in an era of rapid crises and information overload. This study can serve as a foundation for broader experiments on problem solving and as an incentive for replication across the many behavioral science courses now available.

2 The experiment

2.1 The Inter-American Development Bank Course on Behavioral Economics: 21st edition

The Inter-American Development Bank (IDB) has been a leading provider of online professional courses for policymakers in Latin America and the Caribbean. In 2020, it launched the first Spanish-language online course in behavioral economics—an interactive, self-paced program focused on public policy design. The course is free of charge and targeted at Latin American policymakers. A summary is provided in the Online Appendix.

The 21st edition was launched on October 1, 2024; over 1,400 people registered. It consists of four modules taking four to five hours each, designed to be completed in four weeks but accessible for up to six. The first two modules introduce core concepts of behavioral economics: biases, behavioral insights, and their contrast with standard economic models. For example, Module 1 comprises 10 activities, each lasting 3–30 minutes, covering decision-making, behavioral fundamentals, nonstandard preferences and beliefs, information processing, and key terminology. It also illustrates how governments apply behavioral insights to public policy and ends with a learning assessment.

The remaining modules focus on applied cases. Module 3 focuses on real-world policy cases, with particular emphasis on tax compliance and health, two areas in which the IDB has an extensive portfolio. Module 4 consists of an interactive game in which participants design a behavioral intervention, allowing them to apply the principles introduced in earlier modules.

The teaching methodology combines reference materials, such as videos, interactive presentations, and readings, with activities and exercises based on real-world cases from Latin America, the Caribbean, and beyond. Each module concludes with one or two knowledge assessments, with five in total. Assessments for Modules 1 and 2 each account for 20% of the final grade; Module 3 includes two assessments (tax compliance and health), each worth 15%; and Module 4's assessment carries 30% weight. Completing each assessment is mandatory

to advance, though passing is not required. A passing score for both individual assessments and the overall course is set at 80%. Final scores are calculated using the assigned weights. Graduates receive a certificate of completion and may share digital badges on social media.

2.2 Experiment design

To assess the course’s impact, participants in each Spanish session were randomly assigned to treatment or control groups and placed in virtual classrooms of up to 100 participants. Each classroom contained only members of one group, with interaction facilitated through unsupervised virtual chats.

Before the course began, participants received a reminder three days in advance, inviting them to complete a short questionnaire on motivation, planned study time, and expected effort. At the course start, they completed a demographic questionnaire (country, gender, age, academic degree, and general/specific experience in behavioral economics). See Appendix A for the instruments.

Participants in the treatment group answered only the demographic items, while the control group received seven additional questions covering three dimensions: (i) cognitive reflection, (ii) applied knowledge of behavioral interventions, and (iii) policy-approach preferences. These questions constitute the main instrument to assess whether the course improved decision-making. The instrument enhances the one used in Rojas M. and Scartascini (2024) by incorporating questions directly tied to foundational mechanisms of cognitive processing and an applied understanding of behavioral principles in timeless decision contexts.

To improve both construct and ecological validity, we included three items from the CRT, a widely used and validated measure introduced by Frederick (2005) and refined by Toplak et al. (2014) and Primi et al. (2016). CRT tasks capture differences in reasoning styles—often labeled System 1 (fast, intuitive) vs. System 2 (analytic, reflective). (See Alós-Ferrer and Strack (2014) for dual-process theories.) Lower CRT scores indicate greater reliance on intuitive responses; we expect the course to reduce that tendency. The CRT has been shown to predict outcomes related to decision-making, heuristics-and-biases tasks, and judgment in various populations (Alós-Ferrer and Hügelschäfer, 2016; Alós-Ferrer et al., 2016; Hoppe and Kusterer, 2011; Oechssler et al., 2009; Pennycook and Rand, 2019; Toplak et al., 2011). We leave it to future studies to evaluate performance against the Faith in Intuition questionnaire (Alós-Ferrer and Hügelschäfer, 2012, 2016).

We also incorporated three scenario-based questions related to behavioral interventions

that present realistic policy choices. These items are designed to assess whether participants can effectively apply behavioral principles in concrete, applied contexts.

Finally, a seventh question probes potential bias toward behaviorally informed options in a course centered on such tools. Drawing on attentional opportunity costs (Hagmann et al., 2023), this question allows us to examine whether exposure to behavioral interventions shifts attention toward individual-level solutions relative to structural reforms. Rather than measuring analytical performance, it elicits a choice between a structural and a behaviorally framed policy option and assesses whether course participation increases the likelihood of selecting the behavioral alternative.

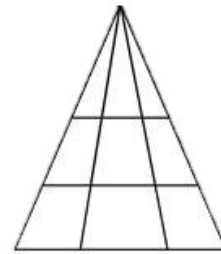
The seven-item instrument was also presented to all participants, regardless of their group, at the end of the course.

The questions are the following (correct answers indicated in the text):

1. Cognitive Reflection

Q_1 . How many triangles are in the figure?

- i. 12
- ii. 7
- iii. 15
- iv. 18 (correct)
- v. 10
- vi. I don't want to answer



The cognitive illusion of Question 1 assesses perception, attention to detail, and skills. By incorporating this visual illusion, we can evaluate the detailed processing of optical inputs, making it a valuable test for inattention (Kahneman and Bar-Hillel, 2020; Vandenbroucke et al., 2014). This task also assesses the ability to inhibit impulsive responses (which would usually lead to counting fewer than the actual number of triangles) in favor of analytical thinking, thereby counting all triangles accurately.

Q_2 . A farmer had 15 sheep and all but 8 died, how many are left?

- i. 7
- ii. 8 (correct)
- iii. 15
- iv. None

The counterintuitive verbal structure of Question 2 is designed to elicit a quick but wrong intuitive response, which results from subtracting 8 from 15. The purpose of this task is to test attentional focus and reading comprehension, as the difficulty lies in the misleading structure of the sentence. Those who answer this question faster tend to answer 7 (System 1 answer) instead of 8 (System 2 answer).

*Q*₃. In a lake, there is a patch of lily pads. Every day, the patch doubles in size. If it takes 48 days for the patch to cover the entire lake, how long would it take for the patch to cover half of the lake?

- i. 47 days (correct)
- ii. 24 days
- iii. 12 days
- iv. 36 days

Question 3 attempts to capture exponential reasoning by testing respondents' use of System 1 versus System 2. To answer correctly, respondents need to override the automatic and unconscious tendency to choose the most intuitively attractive choice sent by System 1 (24 days), in favor of the choice from their System 2 (47 days), which is typically associated with solving math problems (Frederick, 2005).

2. Behavioral Questions

*Q*₄. To promote a more sustainable future, an initiative aims to increase the adoption of renewable energy among households. Which of the following strategies would be the most effective in terms of behavioral economics to motivate homeowners to install solar panels in their homes?

- i. Advertisements in the media about the positive environmental impacts of renewable energy.
- ii. Organize community fairs on green technology, aiming to encourage adoption through exposure.
- iii. Send personalized letters to homeowners showing how much money they can save annually by installing solar panels, along with stories of neighbors who have already made the switch. (correct)
- iv. Provide information on government websites about the benefits of using solar panels.

Question 4 assesses whether the participant understands core insights from behavioral economics. It enables us to check whether the participant can identify and select an

intervention grounded in behavioral principles.

- Q₅. If your goal were to improve a person's work performance, which of the following bonus schemes would be the most effective?
- i. Work hard to earn a cash bonus at the end of the project.
 - ii. Receive a cash bonus at the beginning of the project and work hard to avoid losing it. (correct)
 - iii. Both are equally effective.
 - iv. Neither is effective.

Question 5 tests loss aversion, a core behavioral principle emphasized in the course. Research shows that people are generally more motivated to avoid losses than to pursue equivalent gains. For instance, receiving a bonus in advance and risking its loss is often more motivating than receiving it only upon completion.

- Q₆. Imagine your country is preparing for the outbreak of a rare disease expected to kill 1,000 people. Two alternative programs have been proposed to combat the disease. The estimated consequences of each program are as follows:

Program A: If adopted, 200 people will be saved for sure.

Program B: If adopted, there is a 40% chance that 1,000 people will be saved and a 60% chance that no one will be saved.

If you had to choose between these two programs, which one would you select?

- i. Program A
- ii. Program B (correct)

Question 6 evaluates framing and risk preference under uncertainty. The task tests whether respondents' math and problem-solving skills can counteract loss aversion. The correct answer (Program B) requires a simple calculation of expected value. However, Program A may appear more attractive because it frames the outcome as certain lives saved rather than certain deaths (adapted from Tversky and Kahneman (1981)).

3. Policy-approach preference

Q7. You are tasked with designing a policy to reduce carbon emissions in your country.

Option A: Introduce a carbon tax that increases the cost of fossil fuels and provides financial incentives for businesses and consumers who reduce their carbon emissions.

Option B: Implement a program that uses color-coded labels on products to inform consumers about each product's carbon footprint, encouraging them to choose products with a lower environmental impact.

If you had all the necessary resources, which option would you prefer to implement?

- i. Option A
- ii. Option B

Unlike the other items, Question 7 does not have an objectively correct answer. It presents a choice between two viable options: a structural intervention (a carbon tax) and a behaviorally framed alternative. Rather than measuring accuracy, this question is designed to detect whether course participation induces a shift in policy preferences toward behaviorally framed solutions, signaling a possible bias in favor of such approaches. Because it does not assess correctness, Question 7 is analyzed separately from the main performance index. If treated participants were more likely to select option B over A, this would suggest a side effect of the course: a tendency to favor behavioral solutions regardless of context.

In sum, this assessment evaluates cognitive reflection and application of behavioral strategies. Questions are not repeated from module quizzes.

2.3 Nature of the Measured Skills

The main performance index combines two conceptually different components: CRT items (Q1–Q3) and scenario-based behavioral policy questions (Q4–Q6). These tasks vary in their proximity to the course content and, therefore, allow us to distinguish between improvements closely aligned with the material covered and gains in reasoning tasks that lie outside the focus of the course.

This distinction mirrors the classic differentiation between near and far transfer. When evaluating training interventions, a central issue is not simply whether performance improves

but whether knowledge extends beyond the context in which it was originally acquired (Perkins et al., 1992).

In our setting, the behavioral questions correspond to near transfer. Although the cases presented in the final assessment are not identical to those discussed in the course, they require participants to apply the behavioral concepts and tools emphasized throughout the modules. The underlying cognitive demands, therefore, remain closely connected to the course material.

By contrast, the CRT items represent a more distal form of transfer (Barnett and Ceci, 2002). They involve abstract numerical-reflection problems rather than applied policy analysis, placing them outside the substantive domain of the course. Although the course introduced dual-process models of cognition and illustrated intuitive reasoning, participants were not provided with structured training or repeated practice on numerical-reflection tasks. As a result, performance on the CRT items cannot be attributed to direct rehearsal of module exams or targeted training. Any gains on these items instead suggest a broader engagement of reflective reasoning.

2.4 Data

We collected data for the 21st edition of the course in Spanish; 1,410 individuals registered in advance, 399 (28.3%) began the course, and 202 (14.3%) completed it. Of those who completed it, 56.7% are women, 48.5% are from Andean countries, 24.3% are from Mexico and Central America, and 16.8% are from the Southern Cone.

The courses were advertised through IDB social media and communication channels. As a result, the potential sample consists of individuals engaged with IDB activities, following IDB platforms, or affiliated with governments actively working with the IDB. Because participation was voluntary, the realized sample reflects self-selection: Only those aware of, interested in, and motivated to complete the course enrolled. While this may limit external validity, it does not compromise the experiment’s internal validity.

Table 1 shows that treatment and control groups are balanced across the available observables: gender, age, experience, and education, as well as baseline motivation measures among participants who completed the course. Among those who began the course, we observe a small difference in the share of women between treatment and control groups. Because the main analyses focus on participants who completed the course, this difference does not affect the estimation sample. Although participants could skip questions, leading to variation in sample size, most provided their information. Because assignment was

Table 1: Balance Table

| | Difference with control | | | Difference with control | | |
|--|-------------------------------|-------------------|--------|----------------------------------|-------------------|--------|
| | Control | Treatment | Sample | Control | Treatment | Sample |
| | (av and s.e.) | (coeff and s.e.) | size | (av and s.e.) | (coeff and s.e.) | size |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| | Students who began the course | | | Students who finished the course | | |
| PANEL A: Sociodemographic characteristics | | | | | | |
| Gender: Female | 0.510 (0.022) | 0.082* (0.033) | 397 | 0.519 (0.023) | 0.102 (0.065) | 201 |
| Age ranges | | | | | | |
| 18 to 29 | 0.323 (0.028) | 0.020 (0.037) | 399 | 0.402 (0.052) | 0.009 (0.074) | 202 |
| 30 to 49 | 0.545 (0.029) | 0.017 (0.045) | 399 | 0.477 (0.054) | 0.029 (0.079) | 202 |
| Over 49 | 0.131 (0.016) | -0.037 (0.026) | 399 | 0.121 (0.031) | -0.037 (0.038) | 202 |
| General experience | | | | | | |
| No experience | 0.091 (0.017) | 0.009 (0.021) | 399 | 0.121 (0.032) | 0.036 (0.050) | 202 |
| Up to 5 years | 0.303 (0.033) | 0.010 (0.045) | 399 | 0.346 (0.051) | 0.012 (0.089) | 202 |
| Up to 10 years | 0.187 (0.018) | 0.007 (0.028) | 399 | 0.178 (0.038) | -0.030 (0.056) | 202 |
| Up to 15 years | 0.182 (0.039) | -0.043 (0.046) | 399 | 0.178 (0.035) | -0.051 (0.051) | 202 |
| More than 15 years | 0.237 (0.017) | 0.016 (0.027) | 399 | 0.178 (0.023) | 0.033 (0.037) | 202 |
| Experience in BE | 0.293 (0.020) | -0.074 (0.054) | 399 | 0.280 (0.046) | -0.028 (0.072) | 202 |
| Academic degree | | | | | | |
| Undergraduate | 0.553 (0.046) | 0.008 (0.049) | 316 | 0.500 (0.056) | 0.088 (0.066) | 144 |
| Graduate: Master's degree | 0.414 (0.051) | 0.000 (0.052) | 316 | 0.461 (0.067) | -0.078 (0.078) | 144 |
| Graduate: PhD | 0.033 (0.013) | -0.009 (0.016) | 316 | 0.039 (0.019) | -0.010 (0.027) | 144 |
| PANEL B: Motivation Questionnaire | | | | | | |
| Intrinsic motivation | 0.803 (0.042) | 0.076 (0.050) | 314 | 0.747 (0.058) | 0.063 (0.077) | 170 |
| Level of commitment | | | | | | |
| Partially committed | 0.013 (0.008) | 0.019 (0.014) | 314 | 0.000 (0.000) | 0.025 (0.015) | 170 |
| Fairly committed | 0.166 (0.021) | -0.019 (0.030) | 314 | 0.132 (0.020) | -0.018 (0.034) | 170 |
| Fully committed | 0.815 (0.028) | 0.006 (0.036) | 314 | 0.868 (0.020) | -0.007 (0.034) | 170 |
| Study time planning | | | | | | |
| I don't have a specific plan | 0.096 (0.049) | -0.013 (0.052) | 314 | 0.110 (0.060) | 0.029 (0.069) | 170 |
| Less than 2 hours | 0.076 (0.024) | 0.013 (0.028) | 314 | 0.044 (0.026) | 0.007 (0.036) | 170 |
| Between 2 and 5 hours | 0.675 (0.048) | -0.019 (0.065) | 314 | 0.648 (0.042) | -0.091 (0.076) | 170 |
| More than 5 hours | 0.153 (0.021) | 0.019 (0.046) | 314 | 0.198 (0.025) | 0.055 (0.065) | 170 |
| Grit | -0.036 (0.178) | 0.072 (0.207) | 314 | 0.075 (0.274) | -0.107 (0.328) | 170 |

Notes: Each row shows statistics for a different observable variable we have. Columns [1] and [4] show the sample average and the standard deviation in parentheses for the control group. Columns [2] and [5] show the regression coefficient and standard error in parentheses corresponding to an OLS regression. Standard errors are clustered at the classroom level. *** p<0.001, ** p<0.01, * p<0.05. Source: Authors' calculations.

randomized at registration, there is no reason to expect imbalance among nonrespondents.

Attrition between registration and course completion is substantial, as is common in voluntary online training programs. This differential completion may affect the representativeness of the final sample used for estimation.

As part of the course enrollment process, participants completed a baseline questionnaire that included information on their motivations for enrolling and their planned study commitment (see Appendix B). This allows us to examine which characteristics are associated with course completion.

To better understand patterns of dropout, Table 2 reports predictors of course completion across specifications. Results are broadly consistent across models, with planned study time and professional experience emerging as the most stable predictors of completion. Participants who report planning to study less than two hours per week are significantly less likely to complete the course. In addition, policymakers with more than 15 years of professional experience are less likely to finish the program.

Initial commitment also shows a positive association with completion in some specifications, indicating that participants who report being fully committed at baseline are more likely to finish the course. In addition, intrinsic motivation (e.g., enrolling out of personal interest or curiosity) is negatively associated with completion in some models, suggesting that completion may be more common among participants motivated by extrinsic considerations such as certification or formal requirements.

Overall, these patterns indicate that the estimation sample is not a random subset of registrants, but is composed primarily of policymakers who allocate dedicated study time and are earlier in their professional trajectories. Accordingly, the estimated treatment effects should be interpreted as applying to this subgroup rather than to the full population of potential participants.

3 Empirical analysis

Formally, we estimate the following linear regression model, in which y is the dependent variable:

$$y_i^j = \alpha + \beta T + u_i \tag{1}$$

The dependent variables consist of (i) a composite variable computed as the sum of z-standardized correct answers (except Q_7 , the one capturing policy-approach preferences) and (ii) the individual responses (right or wrong) to each question. In the case of Q_7 , the

Table 2: Determinants of Course Completion Rate

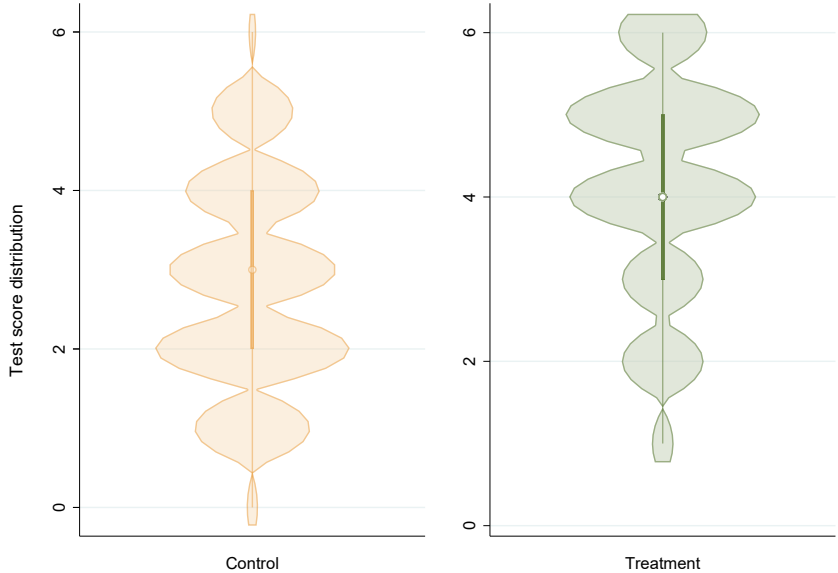
| | Completion Rate | | |
|------------------------------------|----------------------|----------------------|---------------------|
| | (1) | (2) | (3) |
| Motivation variables | | | |
| Intrinsic motivation | -0.219 ** (0.069) | | -0.102 (0.096) |
| Initial level of commitment | | | |
| <i>Partially committed</i> | 0.056 (0.152) | | 0.092 (0.130) |
| <i>Fairly committed</i> | 0.176 (0.115) | | 0.207 (0.136) |
| <i>Fully committed</i> | 0.286 * (0.119) | | 0.261 (0.146) |
| Planned study time | | | |
| <i>Less than 2 hours</i> | -0.439 ** (0.140) | | -0.441 * (0.175) |
| <i>Between 2 and 5 hours</i> | -0.255 ** (0.075) | | -0.172 (0.120) |
| <i>More than 5 hours</i> | -0.058 (0.094) | | -0.012 (0.168) |
| Grit | 0.013 (0.015) | | -0.005 (0.017) |
| Sociodemographic variables | | | |
| Gender: <i>Female</i> | | 0.009 (0.046) | 0.060 (0.060) |
| Age range | | | |
| <i>Between 30 and 49</i> | | 0.077 (0.093) | 0.109 (0.116) |
| <i>Over 49</i> | | 0.156 (0.119) | 0.237 (0.119) |
| General experience | | | |
| <i>Up to 5 years</i> | | -0.129 (0.119) | -0.157 (0.180) |
| <i>Up to 10 years</i> | | -0.346 ** (0.098) | -0.316 (0.154) |
| <i>Up to 15 years</i> | | -0.240 * (0.105) | -0.248 (0.167) |
| <i>More than 15 years</i> | | -0.338 * (0.112) | -0.355 * (0.159) |
| Experience in behavioral economics | | 0.032 (0.077) | 0.051 (0.078) |
| Academic degree | | | |
| <i>Master's</i> | | 0.053 (0.065) | -0.009 (0.074) |
| <i>PhD</i> | | 0.153 (0.065) | 0.041 (0.074) |
| Constant | 0.678 | 0.592 | 0.603 |
| Observations | 314 | 314 | 248 |
| Clusters | 14 | 14 | 14 |

Notes: Each row shows the regression coefficients and the standard error in parentheses corresponding to an OLS regression. Standard errors are clustered at the classroom level. *** p<0.001, ** p<0.01, * p<0.05. Source: Authors' calculations.

variable takes the value 1 if the individual selected the behaviorally based policy option. T equals 1 for individuals in the treatment group, who completed the questionnaire only at the end of the course (control-group individuals took the test before the course, providing the data we use for the main specification, and after the course, providing the data we use for a robustness analysis). β measures the average difference of the dependent variable between the treatment and control groups. Standard errors are clustered at the classroom level. The sample for the main analysis includes individuals who are part of the control group and completed the course (but answered the questionnaire before the course), as well as those in the treatment group (who answered the questionnaire after completing the course).

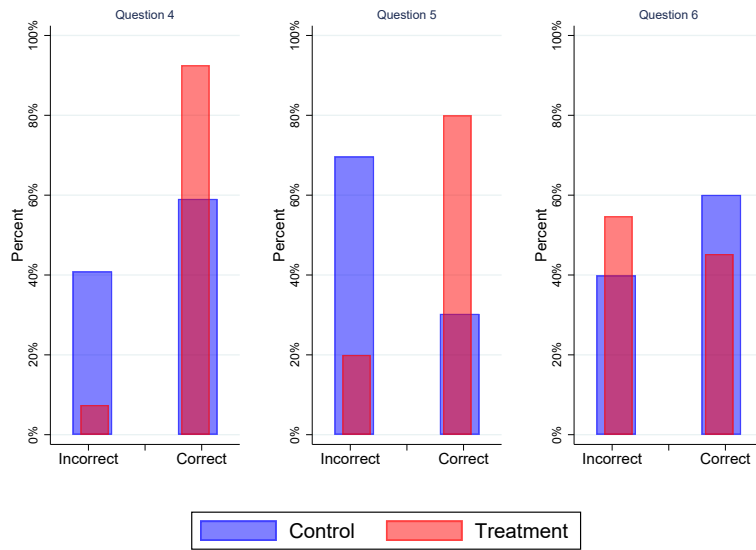
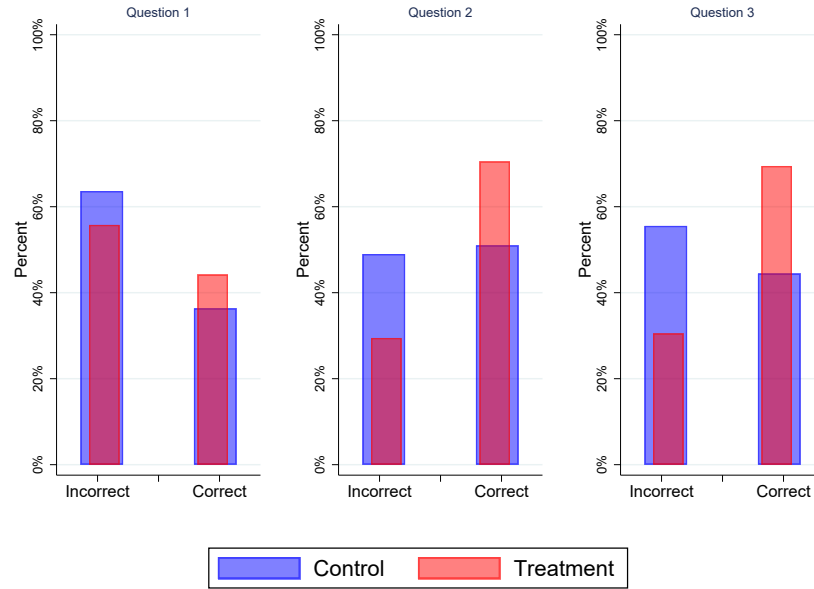
Figure 1 shows the distribution of correct answers for the control and treatment groups. It shows that the treatment group systematically answered more questions correctly than the control group. Figure 2 illustrates the distribution of responses by group across the seven questions. This preliminary evidence reveals a consistent pattern: Treated individuals were more likely to answer correctly than those in the control group.

Figure 1: Distribution of Correct Answers



Notes: Distribution of correct answers across groups. The treatment group’s performance improves, resulting in an average increase in the number of correct answers.

Figure 2: Correct and Incorrect Answers per Question and Group



Notes: Distribution of correct and incorrect answers across groups for each question.

Regression results are shown in Table 3. Our primary outcome is the standardized composite performance index, based on Questions 1–6, which evaluates cognitive reflection and applied behavioral reasoning. Question 7 is excluded from this index, as it captures the propensity to favor behaviorally framed policy options rather than performance on the tasks that evaluate the ability to apply behavioral principles to public policy.

Table 3: Treatment Effects (all courses pooled - z-score)

| | Test | Cognitive reflection | | | Behavioral questions | | | Policy-approach preference |
|---------------|----------------------|----------------------|---------------------|---------------------|----------------------|---------------------|---------------------|----------------------------|
| | Total Score | Q ₁ | Q ₂ | Q ₃ | Q ₄ | Q ₅ | Q ₆ | Q ₇ |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| T | 0.869*** (0.114) | 0.068 (0.080) | 0.210** (0.069) | 0.199** (0.064) | 0.337*** (0.054) | 0.538*** (0.063) | -0.099 (0.070) | -0.102 (0.068) |
| Constant | -0.301*** (0.038) | 0.374*** (0.053) | 0.495*** (0.023) | 0.495*** (0.044) | 0.589*** (0.041) | 0.262*** (0.055) | 0.551*** (0.044) | 0.439*** (0.044) |
| Observations | 201 | 202 | 202 | 202 | 201 | 202 | 202 | 202 |
| Clusters | 14 | 14 | 14 | 14 | 14 | 14 | 14 | 14 |
| Adj R-squared | 0.181 | 0.005 | 0.046 | 0.041 | 0.149 | 0.289 | 0.010 | 0.011 |

Notes: Each row shows the regression coefficients and the standard error in parentheses corresponding to an OLS regression. Standard errors are clustered at the classroom level. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$. Source: Authors' calculations.

Regarding the composite index, individuals in the treatment group obtained 0.87 standard deviation higher scores than individuals in the control group ($p < 0.001$) (column 1). This number corresponds to about 1.3 more correct answers.

As expected, treated individuals generally answered the cognitive-reflection questions more accurately. Results for Q_2 and Q_3 show that the likelihood of treated individuals answering correctly is about 20 percentage points higher than that of those in the control group ($p = 0.009$ and $p = 0.008$, respectively). Moreover, as shown in Figure A1 in the Online Appendix, most incorrect questions are aligned with the System 1 prediction. In the case of Q_2 , the most common answer for those who answer incorrectly is 7 (15 minus 8), and in the case of Q_3 , it is 24 (half of 48). While a greater proportion of treated individuals answer Q_1 correctly according to the distribution of answers shown in Figure 2 and Figure A1, the difference from the control group is not statistically significant ($p = 0.408$).

Similar results are found for the behavioral questions. Compared with the control group, treated individuals' probability of answering correctly is about 34 pp higher for Q_4 ($p < 0.001$) and 54 pp higher for Q_5 ($p < 0.001$). These results suggest that participants are better equipped to use their knowledge to devise behavioral solutions for topics beyond those covered in the course. For Q_6 , there is no significant difference in the likelihood of answering correctly between groups ($p = 0.184$).

Finally, for Question 7, there is no significant difference in the likelihood of selecting

the behavioral alternative between the treatment and control groups ($p = 0.158$). This result suggests that the course improved performance on reasoning-based measures without inducing a systematic preference for behavioral interventions.

4 Mechanism and robustness

Is it possible that differences between treatment and control groups are not due to the course? To address this possibility, we conduct robustness checks. Because control participants took the questionnaire both before and after the course, we can test whether their performance improved. This helps rule out unobserved differences between groups (Table 1 already established there is balance on observables among those who completed the course). As shown in Table 4, control participants scored substantially higher after completing the course, with overall performance improving by 0.7 standard deviations ($p < 0.001$).

Table 4: Control Group: Differences Between Before and After the Course (all courses pooled)

| | Test z-score (1) | Cognitive reflection | | | Behavioral questions | | | Policy-approach preference |
|-------------------------|------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------------------|
| | | Q ₁ (2) | Q ₂ (3) | Q ₃ (4) | Q ₄ (5) | Q ₅ (6) | Q ₆ (7) | Q ₇ (8) |
| After taking the course | 0.693*** (0.117) | 0.103* (0.050) | 0.121* (0.056) | 0.187** (0.067) | 0.196*** (0.052) | 0.439*** (0.072) | -0.047 (0.063) | 0.103* (0.050) |
| Constant | -0.346*** (0.040) | 0.374*** (0.056) | 0.495*** (0.024) | 0.495*** (0.045) | 0.589*** (0.043) | 0.262*** (0.057) | 0.551*** (0.046) | 0.439*** (0.046) |
| Observations | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 |
| Clusters | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| Adj R-squared | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

Notes: Each row shows the regression coefficients and the standard error in parentheses corresponding to an OLS regression. Standard errors are clustered at the classroom level. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$. Source: Authors' calculations.

While this exercise is not conclusive, it suggests that there is no randomization bias: Those who took the course performed better than those who did not, and their performance improved after taking the course compared to before.

A key concern in interpreting our results is whether the estimated effects reflect knowledge and reasoning gains acquired during the course or merely short-term recall driven by proximity to the final assessment. Because it is administered immediately after course completion, improvements could reflect familiarity with recently covered material rather than broader reasoning gains.

The structure of the course allows us to assess this possibility. Participants completed each module at different times, and we observe the number of days between each module

completion and the final exam. On average, 12 days elapsed between completion of Module 1 and the final assessment, 6 days for Module 2, approximately 1 day for Module 3, and virtually no time for Module 4. This variation allows us to examine whether performance differs depending on how recently the material was covered.

Meaningful variation in timing exists primarily for Modules 1 and 2, which introduce the conceptual foundations and core tools of behavioral economics. To examine whether results are driven by short-term recency, we estimate regressions of final assessment performance (z-scores) on treatment and its interaction with an indicator for longer time gaps, defined using the median number of days between module completion and the final exam (10 days for Module 1 and 4 days for Module 2). This specification allows us to test whether treatment effects differ between participants who completed the module closer to the final exam and those who completed it earlier.

Table 5 reports the interaction between treatment and the indicator for longer time gaps. The coefficient on this interaction term is not statistically significant for either Module 1 or Module 2, indicating that the magnitude of the treatment effect does not differ significantly between participants who completed the modules closer to the final exam and those who completed them earlier. In other words, we find no evidence of differential effects by within-course timing gaps.

As a complementary analysis, Figure 3 presents the predicted test performance using the continuous measure of days elapsed between module completion and the final exam. The evidence does not show a consistent negative relationship between time gaps and performance. While confidence intervals are wide, particularly for Modules 3 and 4, we do not observe a systematic pattern consistent with a purely recency-based mechanism.

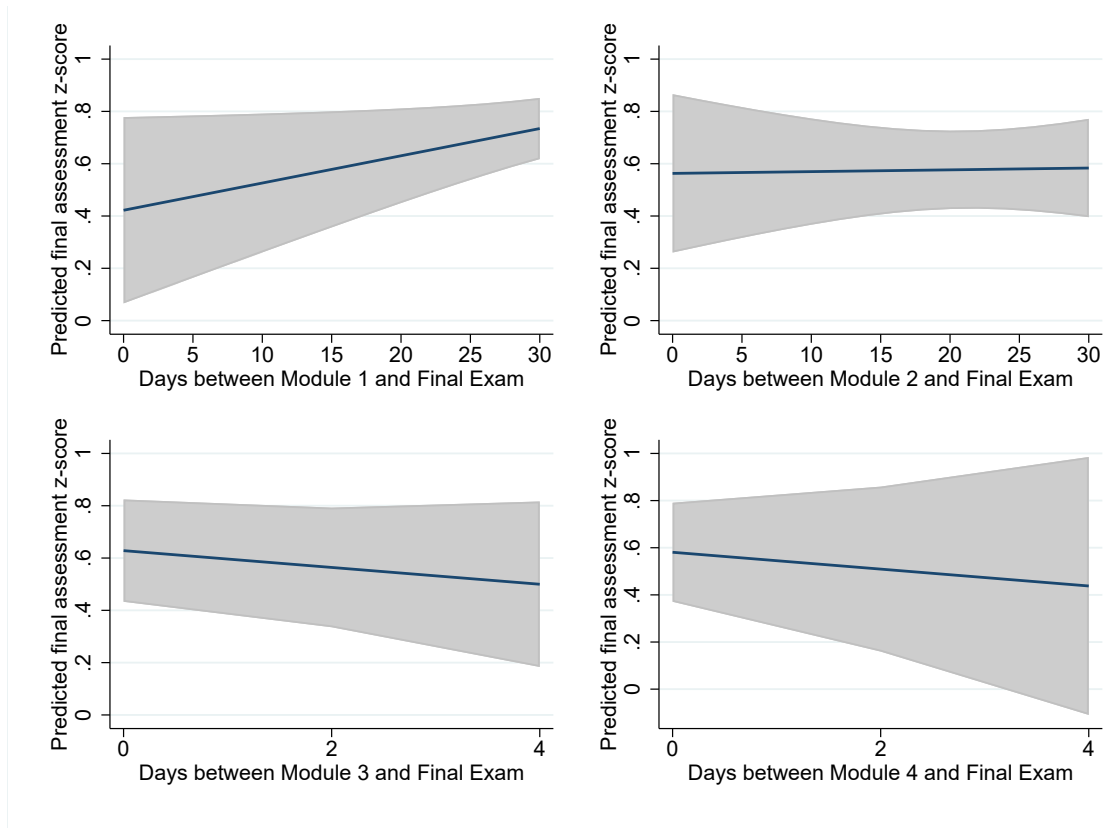
In sum, these findings suggest that the estimated effects are unlikely to be driven solely by immediate recall of recently covered material. Nevertheless, because outcomes are measured at course completion, our results should be interpreted as evidence of improved performance within the training period rather than definitive evidence of long-term persistence.

Table 5: Effect of Time Between Module Completion and Final Assessment on Performance

| | Total score (z-score) | Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 |
|--|-----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Panel A: Interval between Module 1 and final Assessment | | | | | | | | |
| Treatment | 0.792** (0.199) | 0.011 (0.123) | 0.192 (0.105) | 0.250* (0.092) | 0.218* (0.079) | 0.505*** (0.058) | -0.073 (0.094) | -0.138 (0.088) |
| Longer time gap | -0.053 (0.130) | -0.002 (0.082) | -0.085 (0.075) | -0.010 (0.061) | -0.113 (0.104) | -0.013 (0.073) | 0.145 (0.144) | 0.060 (0.123) |
| Treatment × Longer time gap | 0.148 (0.195) | 0.106 (0.138) | 0.044 (0.113) | -0.093 (0.092) | 0.233 (0.117) | 0.064 (0.079) | -0.064 (0.149) | 0.060 (0.142) |
| Constant | -0.276** (0.086) | 0.375*** (0.068) | 0.536*** (0.047) | 0.500*** (0.067) | 0.643*** (0.054) | 0.268*** (0.044) | 0.482*** (0.085) | 0.411*** (0.068) |
| Panel B: Interval between Module 2 and final assessment | | | | | | | | |
| Treatment | 0.819** (0.199) | 0.067 (0.114) | 0.151 (0.113) | 0.198 (0.097) | 0.244** (0.081) | 0.458*** (0.065) | 0.024 (0.097) | -0.138 (0.099) |
| Longer time gap | -0.169 (0.197) | -0.049 (0.085) | -0.121 (0.062) | -0.159* (0.067) | -0.059 (0.110) | -0.109 (0.097) | 0.247* (0.108) | 0.149 (0.087) |
| Treatment × Longer time gap | 0.093 (0.216) | 0.002 (0.131) | 0.110 (0.109) | 0.001 (0.093) | 0.175 (0.121) | 0.152 (0.108) | -0.231 (0.125) | 0.069 (0.142) |
| Constant | -0.211 (0.129) | 0.400*** (0.068) | 0.560*** (0.043) | 0.580*** (0.078) | 0.620*** (0.058) | 0.320*** (0.047) | 0.420*** (0.084) | 0.360*** (0.063) |

Notes: The indicator for longer time gaps equals 1 if the number of days between the respective module and the final assessment is above the sample median (10 days for Module 1 and 4 days for Module 2). Robust standard errors clustered at the classroom level in parentheses. *** p<0.001, ** p<0.01, * p<0.05. Source: Authors' calculations.

Figure 3: Predicted Final Scores by Time Since Module Completion



Notes: The figure shows the predicted final scores (z-scores) by the number of days between each module completion and the final exam. Gray areas represent 95% confidence intervals, with standard errors clustered by classroom.

5 Conclusions

Behavioral biases lead to suboptimal decisions, and policymakers are not exempt. These biases are especially pronounced under conditions of fatigue, stress, or time pressure, which are precisely the conditions under which policymakers often operate, with significant welfare consequences. While behavioral economics has primarily focused on designing strategies that mitigate bias among citizens, strategies strengthening policymakers' own decision-making capacity remain underexplored.

Using a randomized design embedded in a large-scale online course, we find substantial improvements in a diagnostic test combining applied behavioral strategies in policy scenarios and cognitive-reflection measures. Participants exposed to the training perform considerably better than their counterparts, with gains that extend beyond simple recall of course material. These improvements are not concentrated among those with shorter time gaps between completion of the theoretical modules and the final assessment, and they do not reflect a systematic shift toward behaviorally framed policy options. Taken together, the results indicate enhanced reasoning performance within the training context.

Participation and completion are voluntary. Those who finish the course tend to be policymakers who allocate time to training and are earlier in their professional trajectories. Accordingly, the findings speak to short-term improvements among public officials who completed the online training. Future research should examine whether similar effects emerge in broader samples and whether gains persist and translate into observable policy behavior.

Even so, the evidence suggests that behavioral economics training can meaningfully strengthen the analytical tools policymakers bring to complex decisions. This type of capacity-building intervention may complement institutional and structural reforms, expanding the set of approaches available to improve public sector performance.

References

- Achtziger, A., Alós-Ferrer, C., Hügelschäfer, S., and Steinhauser, M. (2014). The neural basis of belief updating and rational decision making. *Social Cognitive and Affective Neuroscience*, 9(1):55–62.
- Alós-Ferrer, C., Garagnani, M., and Hügelschäfer, S. (2016). Cognitive reflection, decision biases, and response times. *Frontiers in Psychology*, 7.
- Alós-Ferrer, C. and Hügelschäfer, S. (2012). Faith in intuition and behavioral biases. *Journal of Economic Behavior & Organization*, 84(1):182–192.
- Alós-Ferrer, C. and Hügelschäfer, S. (2016). Faith in intuition and cognitive reflection. *Journal of Behavioral and Experimental Economics*, 64:61–70.
- Alós-Ferrer, C. and Strack, F. (2014). From dual processes to multiple selves: Implications for economic behavior. *Journal of Economic Psychology*, 41:1–11.
- Artiga González, T., Capozza, F., and Granic, G. D. (2024). Cognitive dissonance, political participation, and changes in policy preferences. *Journal of Economic Psychology*, 105:102774.
- Banerjee, A., Chattopadhyay, R., Duflo, E., Keniston, D., and Singh, N. (2021). Improving police performance in rajasthan, india: Experimental evidence on incentives, managerial autonomy, and training. *American Economic Journal: Economic Policy*, 13(1):36–66.
- Banuri, S., Dercon, S., and Gauri, V. (2019). Biased policy professionals. *The World Bank Economic Review*, 33(2):310–327.
- Barnett, S. M. and Ceci, S. J. (2002). When and where do we apply what we learn?: A taxonomy for far transfer. *Psychological Bulletin*, 128(4):612.
- Battaglio Jr, R. P., Belardinelli, P., Bellé, N., and Cantarelli, P. (2019). Behavioral public administration *ad fontes*: A synthesis of research on bounded rationality, cognitive biases, and nudging in public organizations. *Public Administration Review*, 79(3):304–320.
- Brocas, I. and Carrillo, J. D. (2014). Dual-process theories of decision-making: A selective survey. *Journal of Economic Psychology*, 41:45–54.
- Brookins, P., Lucas, A., and Ryvkin, D. (2014). Reducing within-group overconfidence through group identity and between-group confidence judgments. *Journal of Economic Psychology*, 44:1–12.
- Budría, S. (2012). The shadow value of employer-provided training. *Journal of Economic Psychology*, 33(3):494–514.

- Busso, M., Park, K., and Irazoque, N. (2023). The effectiveness of management training programs: A meta-analytic review. *IDB Working Paper*, 1458. Inter-American Development Bank.
- Camerer, C., Loewenstein, G., and Prelec, D. (2005). Neuroeconomics: How neuroscience can inform economics. *Journal of Economic Literature*, 43(1):9–64.
- Cherry, T. L. and Shogren, J. F. (2007). Rationality crossovers. *Journal of Economic Psychology*, 28(2):261–277.
- Comerford, D. A. (2011). Attenuating focalism in affective forecasts of the commuting experience: Implications for economic decisions and policy making. *Journal of Economic Psychology*, 32(5):691–699.
- DellaVigna, S. (2009). Psychology and economics: Evidence from the field. *Journal of Economic literature*, 47(2):315–372.
- Dolan, P., Hallsworth, M., Halpern, D., King, D., Metcalfe, R., and Vlaev, I. (2012). Influencing behaviour: The mindspace way. *Journal of Economic Psychology*, 33(1):264–277.
- Frederick, S. (2005). Cognitive reflection and decision making. *Journal of Economic Perspectives*, 19(4):25–42.
- García, J. F., Mejía, D., and Ortega, D. (2013). Police reform, training and crime: experimental evidence from colombia’s plan cuadrantes. *CAF Working Paper*, 1. Development Bank of Latin America.
- Hagmann, D., Liao, Y., Chater, N., and Loewenstein, G. (2023). Costly distractions: Focusing on individual behavior undermines support for systemic reforms. Available at SSRN 4426034.
- Hoppe, E. I. and Kusterer, D. J. (2011). Behavioral biases and cognitive reflection. *Economics Letters*, 110(2):97–100.
- Hügelschäfer, S. and Achtziger, A. (2014). On confident men and rational women: It’s all on your mind(set). *Journal of Economic Psychology*, 41:31–44.
- Kahneman, D. (2011). *Thinking, fast and slow*. New York, NY: Farrar, Straus and Giroux.
- Kahneman, D. and Bar-Hillel, M. (2020). Comment: Laplace and cognitive illusions. *Statistical Science*, 35(2):171–172.
- Kuehnhanss, C. R. and Heyndels, B. (2018). All’s fair in taxation: A framing experiment with local politicians. *Journal of Economic Psychology*, 65:26–40.
- Lades, L. K. (2014). Impulsive consumption and reflexive thought: Nudging ethical consumer behavior. *Journal of Economic Psychology*, 41:114–128.

- Morewedge, C. K., Yoon, H., Scopelliti, I., Symborski, C. W., Korris, J. H., and Kassam, K. S. (2015). Debiasing decisions: Improved decision making with a single training intervention. *Policy Insights from the Behavioral and Brain Sciences*, 2(1):129–140.
- Oechssler, J., Roider, A., and Schmitz, P. W. (2009). Cognitive abilities and behavioral biases. *Journal of Economic Behavior & Organization*, 72(1):147–152.
- Pennycook, G. and Rand, D. G. (2019). Lazy, not biased: Susceptibility to partisan fake news is better explained by lack of reasoning than by motivated reasoning. *Cognition*, 188:39–50.
- Perkins, D. N., Salomon, G., et al. (1992). Transfer of learning. *International encyclopedia of education*, 2(2):6452–6457.
- Pope, D. G., Price, J., and Wolfers, J. (2018). Awareness reduces racial bias. *Management Science*, 64(11):4988–4995.
- Posten, A.-C., Ockenfels, A., and Mussweiler, T. (2014). How activating cognitive content shapes trust: A subliminal priming study. *Journal of Economic Psychology*, 41:12–19.
- Primi, C., Morsanyi, K., Chiesi, F., Donati, M. A., and Hamilton, J. (2016). The development and testing of a new version of the cognitive reflection test applying item response theory (irt). *Journal of Behavioral Decision Making*, 29(5):453–469.
- Ravaghi, H., Beyranvand, T., Mannion, R., Alijanzadeh, M., Aryankhesal, A., and Belorgeot, V. D. (2021). Effectiveness of training and educational programs for hospital managers: a systematic review. *Health Services Management Research*, 34(2):113–126.
- Rojas M., A. M. and Scartascini, C. (2024). Debiasing policymakers: The role of behavioral economics training. *Latin American Economic Review*, 34:1–28.
- Sellier, A.-L., Scopelliti, I., and Morewedge, C. K. (2019). Debiasing training improves decision making in the field. *Psychological Science*, 30(9):1371–1379.
- Toplak, M. E., West, R. F., and Stanovich, K. E. (2011). The cognitive reflection test as a predictor of performance on heuristics-and-biases tasks. *Memory & Cognition*, 39(7):1275–1289.
- Toplak, M. E., West, R. F., and Stanovich, K. E. (2014). Assessing miserly information processing: An expansion of the cognitive reflection test. *Thinking & Reasoning*, 20(2):147–168.
- Tversky, A. and Kahneman, D. (1981). The framing of decisions and the psychology of choice. *Science*, 211(4481):453–458.
- Vandenbroucke, A. R., Fahrenfort, J. J., Sligte, I. G., and Lamme, V. A. (2014). Seeing without knowing: neural signatures of perceptual inference in the absence of report. *Journal of Cognitive Neuroscience*, 26(5):955–969.

Online Appendix

TRAINING MINDS, SHAPING POLICIES: EVIDENCE FROM A BEHAVIORAL

ECONOMICS COURSE FOR PUBLIC OFFICIALS

Karina Marquez Carlos Scartascini

Appendix A

Sociodemographic questionnaire

1. Which of the following best describes you? (Please select the one that best represents you) [Single choice]
 - Public servant
 - Public policy professional (excluding public servants)
 - Professional in a field not directly related to public policy (e.g., UX, Marketing, Banking sector)
 - Researcher or professor
 - Student
 - Other

2. How many years of work experience do you have? [Numeric response]

3. Country of residence [List of countries, single choice]

4. Gender [Single choice]
 - Female
 - Male
 - Other [No option to write in]
 - Prefer not to say

5. Age
 - Under 18 years old
 - Between 18 and 29 years old
 - Between 30 and 49 years old

Over 49 years old

6. Highest level of education completed [Single choice]

Bachelor's degree

Master's degree

Doctorate (Ph.D.)

Other

7. Do you have any previous experience in the field of behavioral economics? [Single choice]

Yes

No

Appendix B

Motivation questionnaire

1. What is your main motivation for enrolling in this MOOC? [Single-choice]
 - Personal interest and skill development
 - Academic or professional requirements
 - To obtain a certificate or credits
 - Curiosity about the topic or the learning platform

2. How committed are you to completing this course? [Single-choice]
 - Fully committed; I plan to complete all activities and obtain the certificate
 - Quite committed; I would like to complete most of the course
 - Somewhat committed; I will follow the course as long as the content interests me
 - Slightly committed; I'm just exploring the content without a clear plan
 - Not committed; I'm only reviewing the content out of curiosity

3. How many hours per week do you plan to dedicate to studying this MOOC? [Single-choice]
 - More than 5 hours
 - Between 2 and 5 hours
 - Less than 2 hours
 - I don't have a specific plan

Instructions: Please indicate how well each statement describes you by selecting one of the options.

4. New ideas and projects sometimes distract me from previous ones. [Single-choice]
 - Very accurate
 - Fairly accurate
 - Somewhat accurate
 - Slightly accurate
 - Not at all accurate

5. Setbacks discourage me

- Very accurate
- Fairly accurate
- Somewhat accurate
- Slightly accurate
- Not at all accurate

6. I've been obsessed with an idea or project for a short time but later lost interest.

- Very accurate
- Fairly accurate
- Somewhat accurate
- Slightly accurate
- Not at all accurate

7. I am a hard worker.

- Very accurate
- Fairly accurate
- Somewhat accurate
- Slightly accurate
- Not at all accurate

8. I often set a goal but then switch to a different one.

- Very accurate
- Fairly accurate
- Somewhat accurate
- Slightly accurate
- Not at all accurate

9. I find it difficult to stay focused on projects that take more than a few months to complete.

- Very accurate
- Fairly accurate
- Somewhat accurate
- Slightly accurate
- Not at all accurate

10. I always finish everything I start.

- Very accurate
- Fairly accurate
- Somewhat accurate
- Slightly accurate
- Not at all accurate

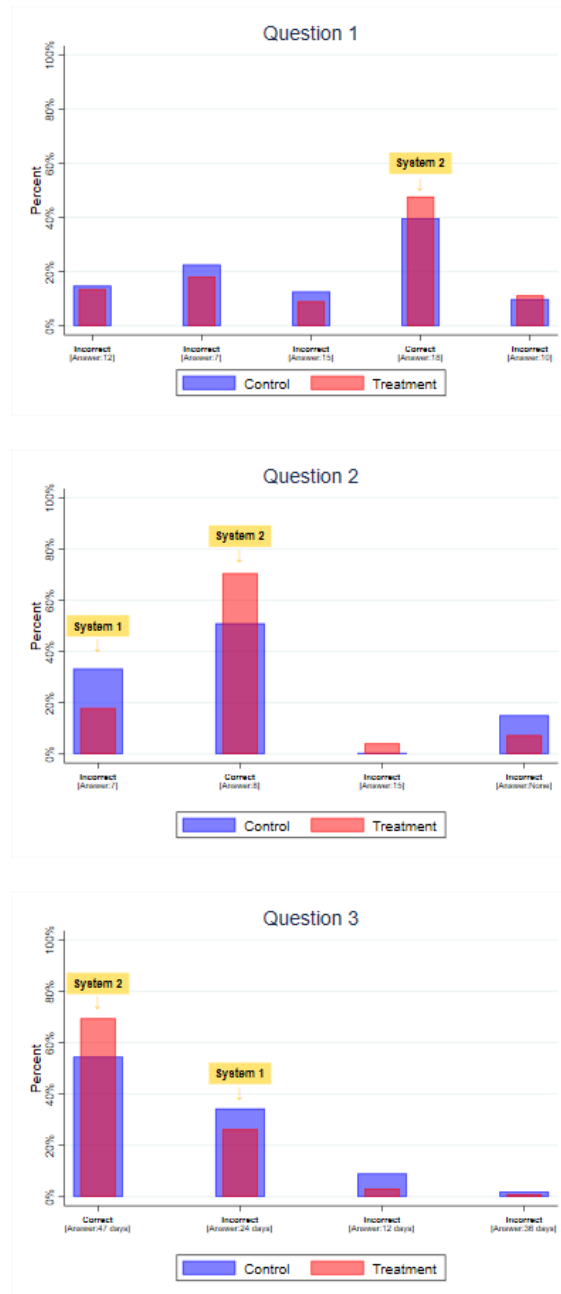
11. I am diligent (i.e., careful, active, and perform my duties with enthusiasm and precision).

- Very accurate
- Fairly accurate
- Somewhat accurate
- Slightly accurate
- Not at all accurate

Appendix C

Cognitive Reflection Questions: Thinking Systems

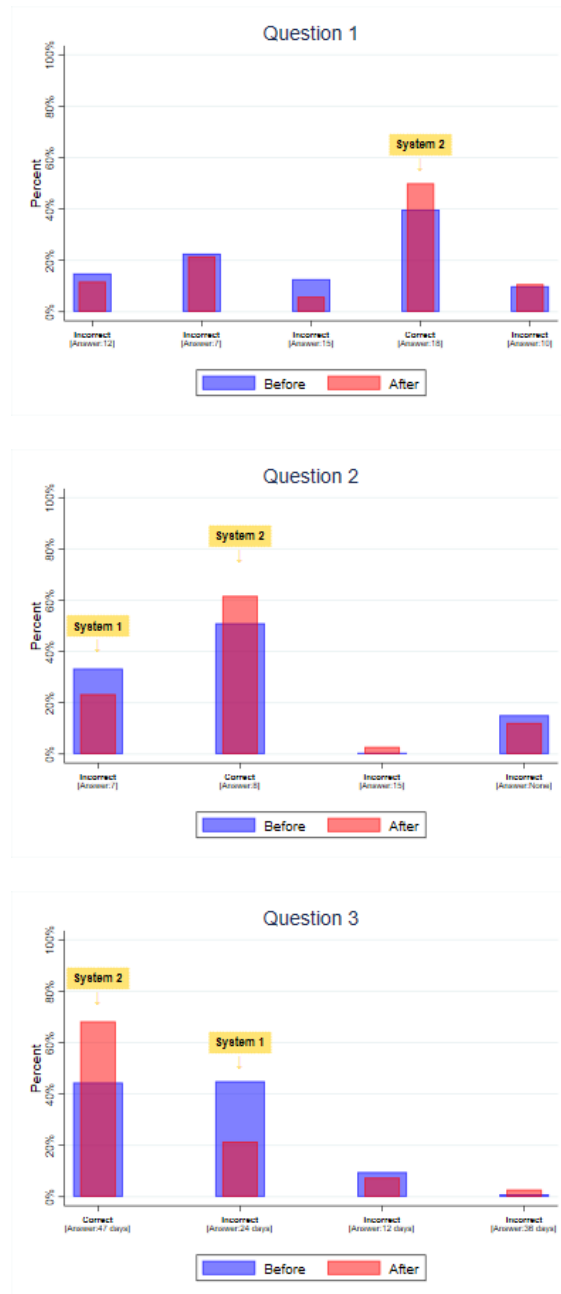
Figure A1: Correct and incorrect answers per question



Appendix D

Cognitive Reflection Questions: Thinking Systems - Control Group Before and After

Figure A2: Correct and incorrect answers per question



Appendix E

Course Learning Guide

The course website link in English is:

<https://indesvirtual.iadb.org/enrol/index.php?id=1960> The full course learning guide is also provided below.



BEHAVIORAL ECONOMICS FOR BETTER PUBLIC POLICIES

Learning Guide





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In recent years, an increasing number of governments and policymakers have come to realize that in order for public policies to be truly successful, they must consider how individuals behave and make decisions. Based on this premise, this course aims to teach you key concepts of behavioral economics and how they differ from the view of the standard economic model. The course also introduces tools that can help promote a better decision making and presents reviews cases from real interventions in which these nudges were used to improve public policies in Latin American countries and other parts of the world.

TARGETS AND OBJECTIVES

At the end of this course, you will be able to:

1. **Recognize** the key concepts and main characteristics of behavioral economics.
2. **Identify** cognitive biases and other behavioral barriers to the effectiveness of public policy in Latin America and the Caribbean.
3. **Recognize** behavioral economics tools that can be applied in overcoming barriers relevant to public policies in Latin America and the Caribbean.
4. **Identify** how the implementation of interventions using behavioral economics tools can complement the effectiveness of public policies based on the traditional economic model.

COURSE PACE AND METHODOLOGY

This is self-paced course. This means that you can take the course at your own pace and complete activities according to the schedule suggested for each one. Because it is self-guided, this course does not involve one-on-one interaction with instructors. However, in some activities you will have the opportunity to interact with other active participants.

The course is organized in 4 thematic modules, each with different educational resources, practical activities, and a learning assessment. A new theme will be covered each week, but all modules are interrelated and have been designed to be completed within a period of 3 to 4 hours each.

The course will focus on developing activities that allow students to be the protagonists of their own learning process. The teaching methodology consists of analyzing reference materials such as videos, interactive presentations, and readings, as well as carrying out activities and exercises using real case examples from Latin America and the Caribbean and other parts of the world. The activities proposed for each week may include simulations, reflection, analysis of problem situations or cases, and simulations for decision making, among others. Each teaching resource is applied according to the learning objectives of each module.



Module 1 (4 hours)

Module 2 (3 hours)

Module 3 (6 hours)

Module 4 (3 hours)

"NETIQUETTE" RULES FOR FORUM PARTICIPANTS

1. **Use appropriate language.** Try to avoid slangs (or local idioms) as much as possible. It helps us understand each other better. Also, do not write IN CAPITAL LETTERS! This can be interpreted as if you were shouting.
2. **Watch the tone of your interventions.** Since the written language lacks the support of facial expressions or voice tones, we can easily be misunderstood. We suggest that you read your texts aloud before posting them and avoid using words that may be offensive to others.
3. **Recognize and respect diversity.** Opinions can be different. If you need to express disagreement, do so in a respectful tone, acknowledging the valuable aspects of your fellow course participants. Accept that other people can also have their own perspective and different experiences in the topic.
4. **Be brief.** If your intervention is too long, your fellow participants probably will not have time to read everything you write.
5. **Explain, justify, and argue your opinion.** Avoid posting messages that contain only a few generic words or statements, such as "I agree with you", just for the sake of participating in the forum. Keep in mind that the idea is to contribute to the debate. Therefore, always justify your answers and do not allow them to be loosely interpreted.
6. **Make an inference.** Review the contributions of other participants. Someone else might share your opinion entirely or in part. Besides allowing you to take advantage of third-party contributions, it will also avoid repetition, hence establishing genuine dialogues. When referring to something previously written by another participant, mention the line of your comment, so that other participants will not need to go back in the forum thread to read it.



OBJECTIVES OF THE MODULES

Module 1 - Key concepts

- 1.1 **Compare** the principles of the traditional economic model with those of behavioral economics.
- 1.2 **Identify** the main terms of behavioral economics, such as the dual process theory and major cognitive biases.
- 1.3 **Recognize** the importance of behavioral economics in public policies.

Module 2 - Toolbox

- 2.1 **Review** the main applications of behavioral economics to public policies.
- 2.2 **Recognize** various tools of behavioral economics, with a view to overcoming biases and behavioral barriers and promoting better decision making.

Module 3 - Applied cases

- 3.1 **Identify** behavioral biases and the most relevant tools for the effectiveness of public policies in Latin America and the Caribbean, through cases applied to healthcare and tax compliance.

Module 4 - From theory to practice: an interactive game

- 4.1 **Review** the key concepts of behavioral economics.
- 4.2 **Recognize** how behavioral economics complements the effectiveness of policies based on conventional models.
- 4.3 **Identify** when the tools of behavioral economics can be used in public policies.



ASSESSMENT

Your performance will be assessed on a continuous basis through questionnaires applied at the end of each module and upon completion of all proposed activities. All course activities are mandatory, insofar as each contributes to your learning process. However, while all activities are mandatory, some will not be reflected in your final score.

| Activity | Activity module | Weight in score |
|-----------------------------------|-----------------|-----------------|
| Learning assessment questionnaire | Module 1 | 20% |
| Learning assessment questionnaire | Module 2 | 20% |
| Learning assessment questionnaire | Module 3 | 30% |
| Learning assessment questionnaire | Module 4 | 30% |

PASS POLICY

The course passing score is at least 80 percent, and the final score will be calculated based on the weights assigned to each learning assessment questionnaire, as shown in the table above. Course grades are Passed/Not Passed, based on the total percentage achieved.

This course includes five learning assessments. Modules 1 and 2 weight 20%. Module 3 has two assessments, one for the tax compliance section and one for the health section, where each weight 15%. Module 4 learning assessment weights 30%. To pass each of these assessments you need to score at least 80 percent of the correct answers. The passing score for the course is at least 80 percent of the total score.

You will have two attempts to answer correctly each question of the learning assessments for Modules 1, 2 and 3 and three attempts to answer correctly each question of the final course assessment (Module 4). The correct answers will appear after you have completed your attempts. If you do not pass any of the assessments, you may move forward in the course modules. In other words, passing a learning assessment is not a prerequisite for advancing in the course.

Learning activities will not be assessed but are mandatory. To successfully complete the course, you must complete all learning activities.

If you do not pass the course you will need to re-enroll to take it again from the beginning, following the required enrollment instructions.



CERTIFICATION

Upon completion of the course, a **pass certificate** will be issued to those who meet the participation conditions, i.e., **a total performance score of at least 80 percent** .

No certificate will be issued to those with a total performance score of less than 80 percent.

DIGITAL BADGES

After completing and passing the course, you will also receive a digital badge that you can share on social media. This badge will be awarded at the end of the course, and instructions on how to access it will be sent to your registered email account.

COURSE POLICIES

As the person responsible for your training process, it is your duty to review and understand each of the policies governing this course. Therefore, we invite you to read the policies on which our courses are based at <https://indesvirtual.iadb.org/mod/page/view.php?id=66844&lang=es#>

WORK PLAN

The course is designed to be completed within a four-week time period. However, access to the course will be extended by an additional two weeks, to allow you enough time to complete all activities. We suggest that you follow the proposed work plan below, as it will help you organize your study time according to the course activities.

Because it is a self-paced course, you can set your own learning pace and advance in the contents and devote more - or less - hours a week to studying if you so wish. This means that you can complete a certain number of activities and/or modules within a shorter or longer period of time than the one suggested in the work plan. **However, you must complete all activities in one module before moving on to the next. Otherwise, the activities will not be visible for consultation.**

If you fail to complete any of the activities according to the suggested work plan, you will receive automatic notifications from the learning platform. Therefore, we suggest that you check your inbox frequently and make the necessary adjustments to prevent these notifications from going to spam.

Use the checklist below to organize yourself properly and avoid last-minute work.



| Welcome to the course (week 1) 4 hours | |
|--|----------------|
| Activity | Estimated time |
| <input type="checkbox"/> Activity 1: Read the welcome description and course objectives <input type="checkbox"/> Activity 2: Watch the course welcome video <input type="checkbox"/> Activity 3: Read the learning guide | 30 min |
| Module 1 - Key concepts | |
| <input type="checkbox"/> Activity 1: Watch the <i>“How good are we at making decisions? A brief introduction to behavioral economics”</i> video and answer the proposed questions. | 15 min |
| <input type="checkbox"/> Activity 2: Watch the <i>“What is behavioral science?”</i> video | 3 min |
| <input type="checkbox"/> Activity 3: Study the <i>“The behavioral economics field”</i> lesson | 30 min |
| <input type="checkbox"/> Activity 4: Study the <i>“Examples of non-standard preferences”</i> lesson | 20 min |
| <input type="checkbox"/> Activity 5: Study the <i>“Examples of non-standard beliefs”</i> lesson | 20 min |
| <input type="checkbox"/> Activity 6: Study the <i>“Factors that affect information processing”</i> lesson | 20 min |
| <input type="checkbox"/> Activity 7: Browse the <i>“Behavioral Economics: Main terms”</i> interactive glossary | 30 min |
| <input type="checkbox"/> Activity 8: Watch the <i>“How can governments use behavioral economics tools?”</i> video | 3 min |
| <input type="checkbox"/> Activity 9: Study the <i>“Behavioral economics and public policies”</i> lesson | 30 min |
| <input type="checkbox"/> Activity 10: Take the learning assessment for Module 1. | 30 min |
| Module 2 - Toolbox (Week 2) 3 hours | |
| <input type="checkbox"/> Activity 1: Watch the <i>“Introduction to the module”</i> video and answer the proposed questions. | 15 min |
| <input type="checkbox"/> Activity 2: Study the <i>“Examples of frequently used ‘nudges’</i> lesson | 60 min |
| <input type="checkbox"/> Activity 3: Participate in the <i>“Is opt-out a better form of consent?”</i> forum | 30 min |
| <input type="checkbox"/> Activity 4: Browse the <i>“Behavioral Economics: Toolbox”</i> interactive glossary | 30 min |
| <input type="checkbox"/> Activity 5: Study the <i>“To conclude, a methodological note”</i> lesson | 15 min |
| <input type="checkbox"/> Activity 6: Take the learning assessment for Module 2. | 30 min |



| Module 3 - Applied cases (week 3) 6 hours | |
|---|---------|
| <input type="checkbox"/> Activity 1: Read the “ <i>Tax Compliance</i> ” section | 10 min |
| <input type="checkbox"/> Activity 2: Study the “ <i>Beliefs, barriers, and examples of solutions</i> ” lesson | 35 min |
| <input type="checkbox"/> Activity 3: Study the “ <i>Preferences, barriers, and examples of solutions</i> ” lesson | 35 min |
| <input type="checkbox"/> Activity 4: Study the “ <i>Information processing, barriers and nudges</i> ” lesson | 30 min |
| <input type="checkbox"/> Activity 5: Participate in the “ <i>Should we shame tax evaders?</i> ” forum | 25 min |
| <input type="checkbox"/> Activity 6: Read “ <i>Conclusions</i> ” | 5 min |
| <input type="checkbox"/> Activity 7: Browse the “ <i>Takeaways for tax compliance</i> ” interactive summary | 15 min |
| <input type="checkbox"/> Activity 8: Take the learning assessment for the section on tax compliance | 25 min |
| <input type="checkbox"/> Activity 9: Read the “ <i>Health</i> ” section and watch the video | 15 min |
| <input type="checkbox"/> Activity 10: Study the “ <i>Frequent biases in a patient's decisions</i> ” lesson | 40 min |
| <input type="checkbox"/> Activity 11: Study the “ <i>Nudges to overcome the barriers presented</i> ” lesson | 40 min |
| <input type="checkbox"/> Activity 12: Study the “ <i>Behavioral Economics can help fight COVID-19</i> ” lesson | 15 min |
| <input type="checkbox"/> Activity 13: Participate in the “ <i>The ethics of health nudges - where is the limit?</i> ” forum | 25 min |
| <input type="checkbox"/> Activity 14: Read “ <i>Conclusions</i> ” | 5 min |
| <input type="checkbox"/> Activity 15: Browse the “ <i>Takeaways on patients’ decisions</i> ” interactive summary | 15 min |
| <input type="checkbox"/> Activity 16: Take the learning assessment for the section on health | 25 min |
| Module 4: From theory to practice: An interactive game (week 4) 3 hours | |
| <input type="checkbox"/> Activity 1: Watch the “ <i>Can behavioral economics help improve vaccination rates?</i> ” video | 5 min |
| <input type="checkbox"/> Activity 2: Participate in the interactive game | 120 min |
| <input type="checkbox"/> Activity 3: Take the learning assessment for Module 4 | 40 min |
| <input type="checkbox"/> Activity 4: Watch the “ <i>Course closing</i> ” video | 5 min |



CREDITS

This course was developed by IDB's Research Department and the Knowledge, Innovation and Communication Sector, under the coordination of its Behavioral Economics Group. The following IDB staff participated in the preparation of these contents:

- Carlos Scartascini, Nina Rapoport, Ana María Rojas y Cristina Parilli - Research Department
- Florencia Lopez Boo and Nicolás Ajzenman - Social Sector
- Carlos Gerardo Molina and Fernanda Camera - Knowledge, Innovation and Communication Sector

Appendix F - Modules Tests

The questions included on each module test are presented below

Module 1

1. Which of the following statements about behavioral economics are correct?
 - a. None of the options
 - b. It rejects the standard economic model
 - c. It shows that the standard economic model is redundant
 - d. It uses the standard economic model as a basis and integrates concepts from fields such as psychology and neuroscience**

2. Indicate whether the following statement is true or false: The homo-economicus is rational and selfish.
 - a. True**
 - b. False

3. According to Systems 1 and 2, select all the correct statements:
 - a. System 2, which is reflective, slow, and controlled, is more likely to be used when solving a math problem.**
 - b. System 1, which is automatic, fast, and often unconscious, is more likely to be used when solving a math problem.
 - c. System 1, which is automatic, fast, and often unconscious, is more likely to be used when watching TV.**
 - d. System 2, which requires effort, is slow and controlled, is more likely to be used when driving to work.
 - e. System 2, which is automatic, fast, and often unconscious, is more likely to be used when solving a math problem.

4. Select all the statements that correctly complete the following sentence:
Lisa's decision to participate in an individual savings program might be affected by: ____
 - a. Short-term bias, because she has trouble making current sacrifices to achieve the long-term benefits of saving.**
 - b. Short-term bias, because she has so many other things to worry about that she keeps forgetting her good intentions.
 - c. Status quo bias, because she has trouble making current sacrifices to achieve the long-term benefits of saving.
 - d. Status quo bias, because signing up for the program requires taking action.**
 - e. Reciprocity, because she has trouble making current sacrifices to achieve the long-term benefits of saving.

5. Regarding the plastic bag case in Washington, D.C., presented in this module, which of the following statements about the results is true?
- The standard economic model would predict that a fine and a bonus of the same size would have the same impact on user behavior.**
 - The standard economic model can predict and explain these findings (that a fine and a bonus of the same size would have a different impact).
6. Could loss aversion explain the results of the plastic bag case in Washington, D.C.? Why or why not?
- Yes. Loss aversion implies that the pain of a 10-cent tax is greater than the happiness generated by a 10-cent bonus, which could explain why the tax was more effective than the bonus.**
 - No. Loss aversion only applies to objects.
 - No. Loss aversion would imply that people prefer not to lose the bonus rather than having to pay the tax, so they end up using reusable bags.
 - Yes. Loss aversion implies that incurring a loss, even with a 10-cent tax, is unpleasant, which could explain why the tax was more effective than the bonus.
7. Considering parents who must take their child for vaccination, which of the following statements best describes parents with "naive" inconsistent behavior over time?
- They decide not to go to the clinic today and create a reminder in their calendar to make sure they go tomorrow.
 - They decide not to go to the clinic today and are confident they will manage to go tomorrow.**
 - They know they tend to procrastinate, so they make an appointment in advance.
 - Since they know they tend to procrastinate, they believe they will not complete the required procedure.
8. In the case of the kindergartens in Haifa, presented in this module, why did the introduction of a fine for parents picking up their children late lead to more tardiness?
- The cost of the fine was too small to significantly affect behavior.
 - The fine had the effect of freeing parents from the social pressure they felt about being late.**
 - It added a financial cost to the social cost of being late.
 - Parents viewed the fines as donations and were happy to contribute.
 - Parents rebelled against the high cost imposed by the kindergarten.
9. A stock market crash has been recently covered by the media. As a result, when people were asked about the probability of a financial market crash, they overestimated its probability. This is an example of:
- Availability bias**
 - Cognitive overload
 - Optimism bias
 - Overconfidence

10. Select all the correct statements about social norms:

- a. "Prescriptive" norms establish people's behavior without judging it as good or bad.
- b. Descriptive norms establish people's behavior without judging it as good or bad.**
- c. "Most passengers on this bus give up their seat for elderly and disabled passengers" is a message containing a descriptive norm.**
- d. "Be respectful, give up your seat to elderly and disabled passengers" is a message containing a "prescriptive" norm.**
- e. Descriptive norms describe how people "should" behave, regardless of how they actually behave.
- f. "Prescriptive" norms describe how people "should" behave, regardless of how they actually behave.**
- g. As social beings, we are sensitive to both "prescriptive" and descriptive norms.**
- h. "Be respectful, give up your seat to elderly and disabled passengers" is a message containing a descriptive norm.

Module 2

1. What are commitment mechanisms? Select all correct statements.
 - a. **Choices made in the present to limit future options to those that align with their long-term goals.**
 - b. By leveraging our present bias, they can help address inertia and loss aversion.
 - c. **By leveraging our tendency towards inertia, they can help address temporal inconsistency and cognitive overload.**
 - d. **They serve as mechanisms to mitigate future impulsive behaviors.**
 - e. Choices made by policymakers to designate certain options as undesirable.

2. Which of the following is NOT an example of how default options are implemented in the public and private sectors?
 - a. Restaurants that automatically substitute sodas with juice and fries with fruits and vegetables in children's meals, unless a specific request is made.
 - b. **Requiring users to select privacy preferences when installing a new app.**
 - c. Car rental agencies that include insurance unless customers specifically decline it.
 - d. Automatically enrolling employees in a health insurance plan but allowing them the option to opt out if they wish.
 - e. Incorporating the Google search engine in the address bar of internet browsers.

3. In the example of fertilizer use, which of the following solutions yielded the best results in encouraging its use?
 - a. Offering farmers free delivery of fertilizers two months after the harvest, because the main reason farmers don't buy fertilizers is due to insufficient income.
 - b. **Visiting farmers right after the harvest (when they have money) and offering them a fertilizer voucher, because it eliminates the need to rely on self-control later in the season.**
 - c. Offering farmers a 50% subsidy on fertilizers two months after the harvest, because the main reason they don't buy fertilizers is due to insufficient income.
 - d. Visiting farmers right after the harvest (when they have money) and offering them to buy a fertilizer voucher, because it helps convince them of the importance of saving for fertilizer.
 - e. Offering farmers free delivery of fertilizers two months after the harvest, because the main reason they don't buy fertilizers is the distance they have to travel to purchase them.

4. In the intervention to reduce electricity consumption in households in the United States, social norm messages were used to encourage energy conservation among neighbors. What does the term "boomerang effect" refer to in this case, and how was it addressed?
 - a. It refers to the fact that households that were told their consumption was below average increased their energy consumption. This was addressed by providing them with a reward in addition to descriptive feedback.
 - b. It refers to the fact that households that were told their consumption was above average felt frustrated and increased their consumption even more. This was addressed by providing them

with a prescriptive norm (a sad face, to convey the message "Try harder!") in addition to the descriptive feedback.

- c. It refers to the fact that households told their consumption was below average increased their energy consumption. This was addressed by providing them with a prescriptive norm (a smiling face, to convey the message "Good job!") in addition to the descriptive feedback.**
 - d. It refers to the fact that households told their consumption was above average reduced their energy consumption but experienced a decrease in life satisfaction. This was addressed by providing them with a prescriptive norm (a smiling face, to convey the message "Keep it up!") in addition to the descriptive feedback.
5. How does the "opt-out" mechanism work?
 - a. The person will be included in the chosen option by default if they have opted for it.
 - b. The person will not be included in the chosen option by default unless they opt out.
 - c. The person will be included in the chosen option by default unless they opt out.**
 - d. The person will be included in the chosen option by default, regardless of what they do.
6. Which of the following is NOT a "nudge" to reduce water consumption?
 - a. Comparing personal water usage with the city's average.
 - b. Conducting training to show practices and technologies that reduce water consumption.
 - c. Providing a basic timer to use in the shower so people can track how long they leave the water running while bathing.
 - d. Creating a tiered pricing scheme that charges families more as their water consumption increases.**
7. Which of the following are distinguishing characteristics of a "nudge"?
 - a. They are easy to implement.**
 - b. They are low-cost.**
 - c. They are designed so that individuals are unaware of their existence.
 - d. Their goal is to correct systematic deviations from "rational" behavior.**
8. In the example that took place in Washington, D.C., we discussed policies involving a 5-cent tax on disposable bags and a 5-cent bonus for bringing reusable bags from home. Can these be considered "nudges"?
 - a. Yes, because although they are monetary incentives, they are very small and should not have a significant impact on behavior according to the standard model.**
 - b. No, because their impact depends on the customers' socio-economic situation.
 - c. No, they are monetary incentives, and anything involving money is always classified as a "traditional" economic tool.
 - d. Yes, because they push customers to make environmentally-friendly decisions.

9. Remember the methodological guide for designing behavioral interventions for public policy. Which of the following activities is NOT part of the intervention design process?
- a. Identifying barriers or biases that prevent the desired behavior from occurring.
 - b. Adjusting and improving treatments based on the results of small pilot tests.
 - c. Replicating the same treatments performed in other contexts without making adjustments.**
 - d. Defining the desired behavior.
 - e. Consulting the existing literature on the topic.
10. What stages are recommended in the methodological guide, and what is their proper order?
- a. Define, diagnose, design, evaluate.**
 - b. Understand, design, implement.
 - c. Diagnose, define, design, evaluate.
 - d. Define, design, diagnose, evaluate.
 - e. Diagnose, implement, evaluate, improve.

Module 3

Part I

1. Based on the tax compliance case, which of the following factors is not a relevant behavioral component in tax evasion?
 - a. **Socioeconomic status**
 - b. How information is presented
 - c. Subjective probabilities of being detected
 - d. The effect of social norms

2. Which of the following is a behavioral strategy to increase tax compliance?
 - a. Lowering tax rates.
 - b. **Simplifying information sent to taxpayers with outstanding debts.**
 - c. Introducing a differentiated tax rate based on household income.
 - e. Increasing fines.

3. In the example of sidewalks in Santa Fe, Argentina, which of the following statements about its positive impact on tax compliance is false? Reminder: the reward was the construction of a new sidewalk in front of the winners' houses.
 - a. Sidewalks are a public good, so when citizens see construction taking place, it creates a positive view of the municipality and its use of tax revenue.
 - b. Sidewalks are visible and durable, providing a signal to citizens that their neighbors are complying with tax obligations.
 - c. **Sidewalks are a private good, so the prospect of winning the lottery increases intrinsic motivation for tax compliance.**
 - d. The expectation of winning the lottery for a new sidewalk increases extrinsic motivation for tax compliance.

4. Based on the tax-related cases and information presented in this module, which of the following was NOT a nudge used or suggested?
 - a. **The use of fines or penalties for those who failed to pay taxes on time.**
 - b. The use of personalized methods to reach delinquent taxpayers.
 - c. Simplification of tax forms and payments.
 - d. The use of small rewards as recognition for good taxpayers.
 - e. Social comparison with those who paid taxes on time.

5. Which of the following factors affect how citizens estimate the intensity of monitoring, the probability of detection, and the severity of sanctions in tax compliance?
 - a. Temporal inconsistency
 - b. **Optimism bias**
 - c. **Availability heuristic**

- d. **Prominence**
 - e. Endowment effect
6. According to Ortega and Scartascini (2015), which of the following strategies is the most cost-effective to increase tax payments from delinquent individuals?
 - a. Sending letters
 - b. Home visits
 - c. All of the above
 - d. **Sending emails**
 7. According to the intervention by Brockmeyer et al. (2019) in Costa Rica, which of the following strategies is most effective in mitigating the over-optimism of businesses regarding the probability that their tax filing will be audited?
 - a. Offering discounts on future payments.
 - b. **Sending messages with past income data from other sources to show monitoring capacity.**
 - c. Sending messages stating that most businesses file taxes correctly to promote social comparison.
 - d. None of the above.
 8. Which scenario is it most effective to mention descriptive norms (i.e., what most people do) when trying to encourage tax payment?
 - a. When the minority pays taxes on time.
 - b. Only when 100% of the population pays taxes on time.
 - c. **When the majority pays taxes on time.**
 - d. It is not relevant to communicate what proportion of the population pays taxes on time.

Part II

1. Based on the health case, answer the following questions: Juan leads a sedentary lifestyle and has a family history of heart disease. Which of the following barriers does NOT affect the likelihood that he will seek preventive medical help?
 - a. **Loss aversion**
 - b. Over-optimism
 - c. Cognitive overload
 - d. Lack of prominence
2. If you were designing communication materials to encourage people to seek help, which tools from Module 2 do you think could be useful to design messages that increase the likelihood of Juan seeking preventive care and discussing his situation with a healthcare professional?
 - a. **Framing**
 - b. Micro-incentives

- c. Reminders
 - d. Commitment mechanisms
3. Juan has decided to take action and make an appointment with a doctor to discuss his situation. Which of the following factors is most likely to get in his way and reduce the likelihood of him actually attending the appointment?
- a. Overconfidence
 - b. Social norms
 - c. Lack of prominence
 - d. Hassle factors**
4. Juan successfully attended his doctor's appointment and received detailed instructions on how to reduce his risk of heart disease. He needs to exercise twice a week, reduce his intake of sugar and salt, and return for a follow-up evaluation every 3 months. He has all the information he needs and is highly motivated to improve his health. What factors are most likely to get in his way and make it difficult for him to follow through with his good intentions?
- a. Small hassle factors and reciprocity
 - b. Cognitive overload and temporal inconsistency**
 - c. Loss aversion and reciprocity
 - d. Lack of prominence and social comparison
 - e. Social norms and framing
5. If you were designing a program to help individuals like Juan maintain their good resolutions, which of the following tools would be appropriate to use in this case?
- a. Weekly text message reminders reinforcing his goals.
 - b. Micro-incentives tied to follow-up evaluations, such as a voucher for a medical massage at the same clinic.
 - c. A letter serving as a planning tool, confirming the appointment and encouraging Juan to make concrete plans on how to attend.
 - d. Commitment mechanisms – a savings account that Juan sets aside money in each month and would lose if he doesn't follow through with his exercise routine.
 - e. All of the above.**
6. In the example by Bank et al. (2015) on incentives for women to attend mammograms, which framing strategy was most effective in motivating them to attend?
- a. Loss framing, mentioning the risks of not having a mammogram.**
 - b. Gain framing, mentioning the risks of not having a mammogram.
 - c. Gain framing, mentioning the benefits of having a mammogram.
 - d. It's repetitive to use framing in this scenario, as women already know the risks and benefits of mammograms.
 - e. Loss framing, mentioning the benefits of having a mammogram.

7. To motivate people to attend their appointments or vaccination sessions on the scheduled day and time, and reduce the gap between intention and action, which elements should an effective planning tool include?
 - a. Pharmacies near the clinic.
 - b. Date and time of the appointment.**
 - c. Clinic location.**
 - d. Possible transportation options.**
 - e. List of things they could be doing instead of attending the appointment.
 - f. Average number of people attending per day.

8. Which of the following biases prevent people from following hygiene recommendations to reduce the spread of coronavirus?
 - a. Optimism bias, as it makes it difficult for people to change their handwashing habits or work/study from home.
 - b. Overconfidence, as it may affect young people's judgment about their probability of becoming sick or dying.**
 - c. Status quo bias, as it increases the prominence of the losses associated with being infected with coronavirus.
 - d. Small hassle factors, as they may cause people to forget simple tasks like washing hands or coughing into their elbow.

Module 4

1. Which of the following options illustrates how loss aversion influences behavior?
 - a. A customer who chooses a small plate at a buffet.
 - b. Using money from their retirement account to go on vacation.
 - c. People refusing to work for nominally lower wages, even when their productivity has decreased.**
 - d. Buying something for their business that they don't need because they fear the inventory is running out.**
2. Imagine you work for a company that manages cafeterias in schools. Students know they should eat healthier food but don't want to. They also want to maintain their freedom to choose what they eat. Which of the following options could increase the consumption of healthier food among students?
 - a. Increase the size of salad bar portions and decrease the size of pizza slices (keeping the price per gram the same).**
 - b. Require students to order their lunch in advance in the morning.**
 - c. Move the salad bar to a less prominent spot in the cafeteria and move snacks to a more prominent area.
 - d. Reduce the portion size of desserts (keeping the price per gram the same).**
3. Which of the following interventions are examples of "nudges"?
 - a. Imposing fines on residents who do not recycle.
 - b. Automatically enrolling employees in a retirement savings plan with an opt-out option.**
 - c. Organizing the cafeteria so that the pizza is at the back, requiring customers to walk further to get it.**
 - d. Banning the sale of large-size sodas.
4. Your government has hired an advertising company to create a campaign aimed at students aged 14 to 18. The goal is to increase school attendance and reduce the number of students skipping classes. Which of the following is likely to be the most effective message?
 - a. "Every day, most students attend school. Going to school can help you build a better future."
 - b. "Every day, thousands of students skip school. Going to school can help you build a better future."
 - c. "Every day, most students attend school. Skipping school destroys your future and everything you've invested in."**
 - d. "Every day, thousands of students skip school. Skipping school destroys your future and everything you've invested in."
5. Which of the following options is NOT an example of how reciprocity can affect decision-making?
 - a. Companies offering a reward to potential customers before they make a purchase.
 - b. Asking your friends to donate money to charity instead of giving gifts this year.**
 - c. Refusing to pay your speeding ticket because you believe it is unfair.**

- d. Students not paying their membership fees to the student association because they are disappointed with its performance.
 - e. A municipality reminding its citizens of their annual achievements before reminding them to pay their taxes on time.
6. Which of the following statements about behavioral economics is incorrect?
- a. It uses the standard economic model as a base and integrates concepts from fields such as psychology and neuroscience.
 - b. It provides a toolkit that can be applied to solve any problem, regardless of context.**
 - c. Its lessons allow for the development of tools that can be highly cost-effective.
 - d. It rejects the standard economic model.
 - e. None of the above**
7. Indicate whether the following statement is true or false: Homo-economicus is irrational and social.
- a. False**
 - b. True
8. What is the "dual-process theory"?
- a. A theory that describes the process by which our future self and present self are in conflict when we have to make sacrifices to secure long-term well-being.
 - b. A theory that describes the existence of two thinking systems: one fast and automatic, and the other deliberate and slow.**
 - c. None of the above
 - d. A theory about the duality that exists between our own well-being and the well-being of others in many decisions we make.
 - e. A theory arguing that our decision-making is the result of a conflict between the heart and the mind.
9. Select all the statements that do not correctly complete the following sentence: Lisa's decision to participate in an individual savings program is affected by:
- a. Short-term bias, because she has so many other things to worry about and procrastinates her good intentions.
 - b. Status quo bias, because registering for the program requires taking action.
 - c. Status quo bias, because she has difficulty making the necessary current sacrifices to achieve the long-term benefits of saving.
 - d. Short-term bias, because she has difficulty making the necessary current sacrifices to achieve the long-term benefits of saving.
 - e. Reciprocity, because she has difficulty making the necessary current sacrifices to achieve the long-term benefits of saving.**

10. Select the incorrect statements (all that apply) about social norms.
- a. **"Most passengers on this bus give up their seat for elderly and disabled passengers" is a message containing a prescriptive norm.**
 - b. "Be respectful, give up your seat for elderly and disabled passengers" is a message containing a prescriptive norm.
 - c. Descriptive norms establish the behavior of people without judging it as good or bad.
 - d. **Prescriptive norms establish the behavior of people, without judging it as good or bad.**
 - e. "Most passengers on this bus give up their seat for elderly and disabled passengers" is a message containing a descriptive norm.
 - f. Prescriptive norms describe how people "should" behave, regardless of how they actually behave.
 - g. As social beings, we are sensitive to both prescriptive and descriptive norms.
 - h. **Descriptive norms describe how people "should" behave, regardless of how they actually behave.**
 - i. **"Be respectful, give up your seat for elderly and disabled passengers" is a message containing a descriptive norm.**
11. The 'opt-out' mechanism works in the following way:
- a. An individual will not be included in the default option unless they take action to opt out.
 - b. **An individual will be included in the default option unless they take action to opt out.**
 - c. An individual will only be included in the default option if they choose to do so.
 - d. An individual will be included in the selected default option, regardless of their actions.
12. Which of the following is NOT a distinguishing feature of a "nudge"?
- a. They are easy to implement.
 - b. They are low cost.
 - c. **They are designed so that individuals are not aware of their existence.**
 - d. Their goal is to correct systematic deviations from "rational" behavior.
13. Select all the steps that are part of the design of behavioral economics interventions within the context of public policy.
- a. **Determine the barriers or biases that are preventing the desired behavior.**
 - b. **Consult existing literature on the topic.**
 - c. **Define the desired behavior.**
 - d. Replicate the treatments used in other contexts without making adjustments.
 - e. **Design an evaluation strategy.**
 - f. **Adjust and improve treatments based on the results of small pilot tests.**
14. Which of the following factors are relevant behavioral components in tax evasion?
- a. Socioeconomic status
 - b. **The user's experience with how information is presented to them.**
 - c. All of the options.

- d. Subjective probabilities of being detected.**
 - e. The effect of peer behavior.**
15. If you were designing a program to help individuals quit smoking, which of the following tools would be appropriate nudges you could use?
- a. All of the options
 - b. Fines for smoking in public spaces.
 - c. Weekly text message reminders to reinforce their goals and actions to achieve them.**
 - d. Planning tools to encourage individuals to think about what to do when they feel the urge to smoke.**
 - e. Commitment mechanisms – a fund where money is deposited every month, and they lose it if they don't quit smoking.**
 - f. Provide information on the health risks if they continue smoking.**