# Online Appendix
# Forget-me-not:
# The Persistent Effect of Information Provision for Adopting Climate-Friendly Goods

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## A Experimental instructions and questionnaires

### A.1 Experiment 1

#### A.1.1 Wave 1: The information wave

**Introduction page of the experimental screen**

Thank you for taking part of the survey. This survey concerns choices between difference lightbulbs. By completing the task, you will get ¥2.5 as participation fee. On top of this, we will give you ¥30 as the "shopping budget". Your final payment will depend on your choices on the lightbulbs. For example, if you choose a CFL lightbulb that sells at ¥8 over a LED lightbulb that sells at ¥16, then you will get the chosen CFL lightbulb, plus the left amount in your shopping budget which is ¥22 (=30-8) in this case; if you choose the LED lightbulb over the CFL lightbulb, then you will get the chosen LED lightbulb, plus the left amount in the "shopping budget", which is ¥14 (=30-16).

The lightbulb will be arranged for deliver today to your postal address without additional cost. The left amount in the "shopping budget" will be sent to your Sojump account.

At the end of the survey, we will need you to leave your postal address. If you do not want to leave your address, please shut this page down.

Your answer will be used for academic research only, with no business interest attached. At the end of the survey, we will select one of your choices on lightbulbs randomly, and send you the lightbulb chosen by yourself. Your choice will affect the amount left in the "shopping budget".

**Page 1 of the experimental screen: monetary benefits**

1. Consider the following information and make your choice. Between the two lightbulbs with the same luminosity, which one do you prefer?

[*Here we only show the M-AP/CC conditions. The other conditions are different in the order of presenting different pieces of information, as described in the main text of the paper.*]

| | 60-watt equivalent LED (7w) | 60-watt equivalent CFL (14w) |
|---|---|---|
| |   |   |
| Price | ￥16 | ￥8 |

[*with the order of the options randomized, same figure displayed for Q1 to Q6 except for prices*]

A. The LED lightbulb at ¥16.

B. The CFL lightbulb at ¥8.

[*if A is chosen in Q1*]

2. Now the price of the LED lightbulb is changed. Between the two lightbulbs with the same luminosity, which one do you prefer?

A. The LED lightbulb at ¥24.

B. The CFL lightbulb at ¥8.

[*if B is chosen in Q1*]

3. Now the price of the LED lightbulb is changed. Between the two lightbulbs with the same luminosity, which one do you prefer?

A. The LED lightbulb at ¥8.

B. The CFL lightbulb at ¥8.

[*if A is chosen in Q2*]

4. Now the price of the LED lightbulb is changed. Between the two lightbulbs with the same luminosity, which one do you prefer?

A. The LED lightbulb at ¥8.

B. The CFL lightbulb at ¥8.

[*if B is chosen in Q2*]

5. Now the price of the LED lightbulb is changed. Between the two lightbulbs with the same luminosity, which one do you prefer?

A. The LED lightbulb at ¥20.

B. The CFL lightbulb at ¥8.

[*if A is chosen in Q3*]

6. Now the price of the LED lightbulb is changed. Between the two lightbulbs with the same luminosity, which one do you prefer?

A. The LED lightbulb at ¥12.

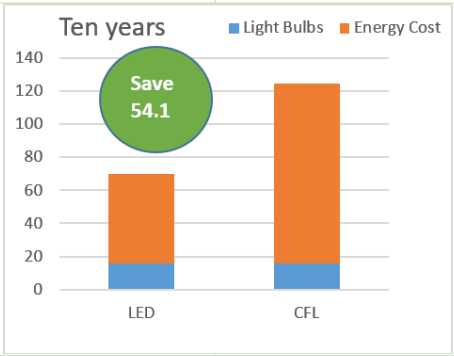
B. The CFL lightbulb at ¥8.

**Page 2 of the experimental screen**

**Treatment condition: monetary benefits**

In this page, we provide more information on the two types of lightbulbs.

7. Consider the following information and make your choice. Between the two lightbulbs with the same luminosity, which one do you prefer?

| | 60-watt equivalent LED (7w) | 60-watt equivalent CFL (14w) |
|---|---|---|
| |   |   |
| Life duration | 10 years (4 hours/day) | 5 years (4 hours/day) |
| Energy Cost | ￥5.41/year | ￥10.82/year |
| Total Cost |   | |
| Price | ￥16 | ￥8 |

Electricity cost is calculated by 0.53 yuan/kwh.

[*with the order of the options randomized, same figure displayed for Q7 to Q12 except for prices and total cost*]

A. The LED lightbulb at ¥16.

B. The CFL lightbulb at ¥8.

[*if A is chosen in Q7*]

8. Now the price of the LED lightbulb is changed. Between the two lightbulbs with the same luminosity, which one do you prefer?

A. The LED lightbulb at ¥24.

B. The CFL lightbulb at ¥8.

[*if B is chosen in Q7*]

9. Now the price of the LED lightbulb is changed. Between the two lightbulbs with the same luminosity, which one do you prefer?

A. The LED lightbulb at ¥8.

B. The CFL lightbulb at ¥8.

[*if A is chosen in Q8*]

10. Now the price of the LED lightbulb is changed. Between the two lightbulbs with the same luminosity, which one do you prefer?

A. The LED lightbulb at ¥28.

B. The CFL lightbulb at ¥8.

[*if B is chosen in Q8*]

11. Now the price of the LED lightbulb is changed. Between the two lightbulbs with the same luminosity, which one do you prefer?

A. The LED lightbulb at ¥20.

B. The CFL lightbulb at ¥8.

[*if A is chosen in Q9*]

12. Now the price of the LED lightbulb is changed. Between the two lightbulbs with the same luminosity, which one do you prefer?

A. The LED lightbulb at ¥12.

B. The CFL lightbulb at ¥8.

**Page 3 of the experimental page**

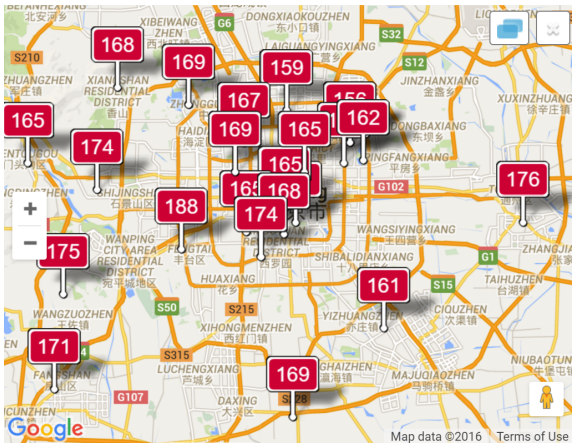
**Treatment condition: environmental benefits (air pollution)**

Please read the following information:

In China, electricity is mainly generated from coal. Burning coal is directly related to greenhouse gas emission and air pollutant emissions (e.g. pm2.5, pm10). Inhaling air pollutant leads to health problems such as heart or lung disease. Older adults and children are at greater risk from air pollution.

Your choices of lightbulbs affect air pollution. For the same amount of light (for instance, that of a 60-watt incandescent lightbulb), LED lightbulbs produce about **50% less air pollution** compared to CFL lightbulbs.

The following picture shows the pm2.5 level of Beijing in a day in June (in winter the condition is much worse).



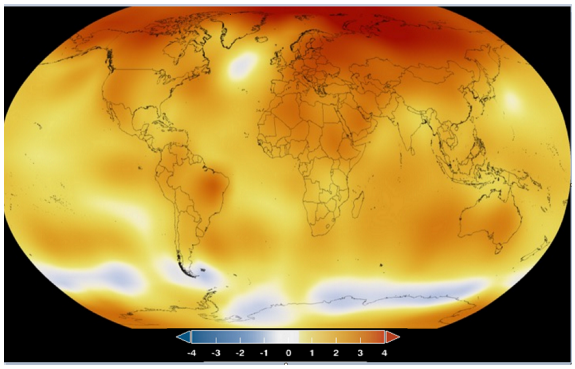

**Treatment condition: environmental benefits (climate change)**

Please read the following information:

In China, electricity is mainly generated from coal. Burning coal is directly related to greenhouse gas emission and air pollutant emissions. Global warming generated by greenhouse gas emissions leads to extreme weather which affects agriculture, ecosystems and health both in China and the rest of the world. Older adults and children are at greater risk from climate change.

Your choices of lightbulbs affect greenhouse gas emission. For the same amount of light (for instance, that of a 60-watt incandescent lightbulb), LED lightbulbs produce about **50% less greenhouse gas** compared to CFL lightbulbs.

The following picture shows the temperature change of world from 1840.




**Control condition: information on manufacturing**

China is the largest producer of lighting in the world. Its lighting products have been exported to over 200 countries.

World famous lighting companies such as PHILIPS, OSRAM, GE, and so on, have been stationed in China since the nineties.

There are over 10,000 lighting manufacturers in China. These manufactures are mainly distributed in Chinas southeastern coastal areas, including Guangdong, Fujian, Jiangsu, Zhejiang,

and Shanghai."

**Control condition: information on online sale**

Online sale is the new trend for lighting companies.

Some brands do not have very complete sales system, and are therefore, more willing to seek out opportunities online.

Many emerging enterprises are already favorably poised with respect to online sales. Market data shows that in 2014 its market size was an estimated CNY14.68 billion, accounting for 14.4% of all sales channels.

**Page 4 of the experimental page**

13. Consider the information in the previous page and make your choice. Between the two lightbulbs with the same luminosity, which one do you prefer?

| | 60-watt equivalent LED (7w) | 60-watt equivalent CFL (14w) |
|---|---|---|
| |   |   |
| Price | ￥16 | ￥8 |

[*with the order of the options randomized, same figure displayed for Q13 to Q18 except for prices*]

A. The LED lightbulb at ¥16.

B. The CFL lightbulb at ¥8.

[*if A is chosen in Q13*]

14. Now the price of the LED lightbulb is changed. Between the two lightbulbs with the same luminosity, which one do you prefer?

A. The LED lightbulb at ¥24.

B. The CFL lightbulb at ¥8.

[*if B is chosen in Q13*]

15. Now the price of the LED lightbulb is changed. Between the two lightbulbs with the same luminosity, which one do you prefer?

A. The LED lightbulb at ¥8.

B. The CFL lightbulb at ¥8.

[*if A is chosen in Q14*]

16. Now the price of the LED lightbulb is changed. Between the two lightbulbs with the same luminosity, which one do you prefer?

A. The LED lightbulb at ¥28.

B. The CFL lightbulb at ¥8.

[*if B is chosen in Q14*]

17. Now the price of the LED lightbulb is changed. Between the two lightbulbs with the same luminosity, which one do you prefer?

A. The LED lightbulb at ¥20.

B. The CFL lightbulb at ¥8.

[*if A is chosen in Q15*]

18. Now the price of the LED lightbulb is changed. Between the two lightbulbs with the same luminosity, which one do you prefer?

A. The LED lightbulb at ¥12.

B. The CFL lightbulb at ¥8.

**Page 5 of the experimental page**

Thank you for completing the choices between lightbulbs. The survey continues.

19. What kind of lightbulbs do you use at home?

A. Mostly (or all of them) are LED lightbulbs.

B. Mostly (or all of them) are CFL lightbulbs.

C. Mostly (or all of them) are incandescent lightbulbs.

D. I do not know.

20. Before participating the survey, did you know that a LED lightbulb saves more electricity than a CFL lightbulb?

A. I did not know at all.

B. I know a bit, but the saving is much larger than I thought.

C. I know a bit, but the saving is much smaller than I thought.

D. I know exactly how much LED saves me.

21. Before participating the survey, did you know that a LED lightbulb emits less air pollutant and greenhouse gas than a CFL lightbulb?

A. I did not know at all.

B. I know a bit, but the saving is much larger than I thought.

C. I know a bit, but the saving is much smaller than I thought.

D. I know exactly how much LED saves me.

22. When purchasing a lightbulb, how much do you care about the following aspects? (0 means not at all, 10 means very much)

Purchasing price

Life duration

Energy cost

Color of the light (warm, cold)

Contains mercury (for health concern)

Contains mercury (for garbage disposal)

23. Please think over what you read just now. Give your closest guess, what is the difference in energy cost over 10 years between LED and CFL (in CNY)?

[*Here we provide a drop-down list ranging from 0 to 150, with no default value inserted.*]

**Page 6 of the experimental page: attitudes towards climate change**

The survey continues.

[*The questions in this page are the Global Warmings Six Americas survey created by Yale program on climate change communication.*]

24. Please think about global warming for a moment. On a scale of 1 to 6, where one means it is a very bad thing and six means it is a very good thing, how would you rate global warming?

25. How convinced are you that global warming is happening – would you say you are – completely convinced, mostly convinced, not so convinced, or not at all convinced?

26. Which comes closer to your own view – [ROTATED]: most scientists think global warming is happening, (or most scientists think global warming is not happening, or there is a lot of disagreement among scientists about whether or not global warming is happening, or do you not know enough to say?

27. If global warming is happening, do you think it is – [ROTATED]: caused mostly by human activities, (or) caused mostly by natural changes in the environment?

28. How much do you personally worry about global warming – a great deal, a fair amount, only a little, or not at all?

29. When do you think global warming will start to have dangerous impacts on people around the world – is it having dangerous impacts now, will it have dangerous impacts in 10 years, in 25 years, in 50 years, in 100 years, or will it never have dangerous impacts?

30. How serious of a threat is global warming to – [ITEMS READ IN ORDER] – very serious, somewhat serious, not very serious, or not at all serious?

You and your family

Your local community

People in China

People in other countries

Plants and animals

31. Do you strongly agree, somewhat agree, somewhat disagree or strongly disagree with the following statement? Life on earth will continue without major disruptions only if we take immediate and drastic action to reduce global warming.

32. As you may know, global warming is said to be partly caused by the emission of carbon dioxide from the burning of gasoline, oil, coal, and natural gas in cars, homes, and electric power plants. Do you favor or oppose each of the following as a way for the central or local governments to reduce both carbon dioxide emissions and global warming? How about – [RANDOM ORDER]? Do you [favor/oppose] strongly or only moderately?

Requiring that any newly constructed home, residential, or commercial building meet higher energy efficiency standards

Requiring automakers to increase the fuel efficiency of cars, trucks, and SUVs to 6.7L per kilometer, even if it meant a new car would cost up to ¥3500 more to buy

Requiring electric utilities to produce at least 20% of their electricity from wind, solar, or other renewable energy sources, even if it cost the average household an extra ¥300 a year

Agreeing to an international treaty that "China promises to peak the emissions of carbon dioxide, and increase the non-fossil fuel share of consumption by up to 20 percent by the year 2030"

Increasing taxes on gasoline so people either drive less or buy cars that use less gas

Increasing taxes on electricity so people use less of it

33. How likely are you to do each of the following because of your concerns about global warming – very likely, somewhat likely, somewhat unlikely, or very unlikely? How about – [RANDOM ORDER]?

Buy energy-efficient household appliances

Buy energy-efficient lightbulbs

Buy a more fuel-efficient car, SUV, or truck

Bike, ride public transit, or car pool one more time a week

Contact politicians to express your views on global warming

34. Do you strongly agree, somewhat agree, somewhat disagree, or strongly disagree with each of the following statements – [ITEMS READ IN ORDER]? You can take actions that will help reduce global warming. China can take actions that will help reduce global warming. The actions of a single person wont make any difference in reducing global warming. The actions of a single country like China wont make any difference in reducing global warming.

35. Do you strongly agree, somewhat agree, somewhat disagree or strongly disagree with the following statements [RANDOM ORDER]

Government regulation of business usually does more harm than good.

The world would be a more peaceful place if its wealth were divided more equally among nations.

We have gone too far in pushing equal rights.

People are poor because they are lazy or lack will power.

## Page 7 of the experimental page

This is the last page of the survey.

36. What is your household income per year?

37. What is your age? (Under 18, 18-25, 26-30, 31-40, 41-50, 51-60, Above 60)

38. What is your gender?

39. What is the highest level of education you have completed? (1: under high school; 2: high school; 3: 3-year college; 4: 4-year university; 5: master; 6: phD)

40. Please leave the postal address so you can receive the lightbulb.

## A.2 Experiment 2: information screens

| | LED lightbulb | CFL lightbulb |
|---|---|---|
| |  |  |
| Duration (4 hours/day) | 10 years | 5 years |
| Energy cost per light (0.54 yuan/kwh) | **5.41 yuan**/year | **10.82 yuan**/year |
| Energy cost comparison | 4 LED lightbulbs save 216.4 yuan in 10 years | |

Monetary information

| | LED lightbulb | CFL lightbulb |
|---|---|---|
| |  |  |
| Duration (4 hours/day) | 10 years | 5 years |
| $CO_2$ emission per light (0.624 kg/kwh) | **6.38 kg**/year | **12.76 kg**/year |
| $CO_2$ emission comparison | 4 LED lightbulbs emit 255.2 kg $CO_2$ fewer in 10 years | |

Environmental information

# B Balance tables

## B.1 Experiment 1: Balance between treatment and control conditions

P-values are calculated using t tests or proportion tests. Socioeconomic characteristics are balanced except for gender.

| | Total | **Treatment** | **Control** | p-values |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Baseline WTP | 19.50 | 19.67 | 18.63 | 0.1565 |
| | (9.45) | (9.39) | (9.73) | |
| Income (000 CNY) | 169.5 | 169.2 | 170.9 | 0.8151 |
| | (110.7) | (114.1) | (92.2) | |
| University degree | 0.76 | 0.76 | 0.76 | 0.9081 |
| Male | 0.52 | 0.51 | 0.62 | 0.0029 |
| Age: | | | | |
| 18 to 30 | 0.40 | 0.41 | 0.36 | 0.2093 |
| 31 to 40 | 0.42 | 0.43 | 0.38 | 0.1886 |
| 41 to 50 | 0.14 | 0.13 | 0.17 | 0.1775 |
| 51 to 60 | 0.04 | 0.03 | 0.08 | 0.0002 |
| over 60 | 0.002 | 0.001 | 0.01 | 0.1188 |
| Climate change skeptics | 0.05 | 0.05 | 0.07 | 0.1828 |
| Own mostly CFLs | 0.56 | 0.57 | 0.52 | 0.2226 |
| N | 1268 | 1058 | 210 | |

*Note:* Standard deviation below mean values for continuous variables.

## B.2 Experiment 2: Balance between treatment and control conditions

P-values are calculated using one-way anova tests.

| | Total | **Monetary** | **Environmental** | **Control** | p-values |
|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) |
| Baseline WTP | 40.29 | 40.88 | 39.49 | 40.52 | 0.613 |
| | (22.07) | (21.84) | (22.21) | (22.18) | |
| Income (000 CNY) | 100.6 | 107.9 | 93.19 | 100.7 | 0.171 |
| | (118.1) | (141.5) | (91.69) | (115.8) | |
| University degree | 0.48 | 0.48 | 0.48 | 0.49 | 0.953 |
| Male | 0.49 | 0.49 | 0.49 | 0.51 | 0.655 |
| Age: | | | | | |
| | 35.6 | 35.8 | 35.1 | 35.8 | 0.474 |
| | (9.59) | (10.16) | (8.35) | (10.16) | |
| Climate change skeptics | 0.09 | 0.1 | 0.08 | 0.09 | 0.599 |
| Own mostly CFLs | 0.34 | 0.34 | 0.34 | 0.35 | 0.793 |
| N | 1358 | 451 | 457 | 450 | |

*Note:* Standard deviation below mean values for continuous variables.

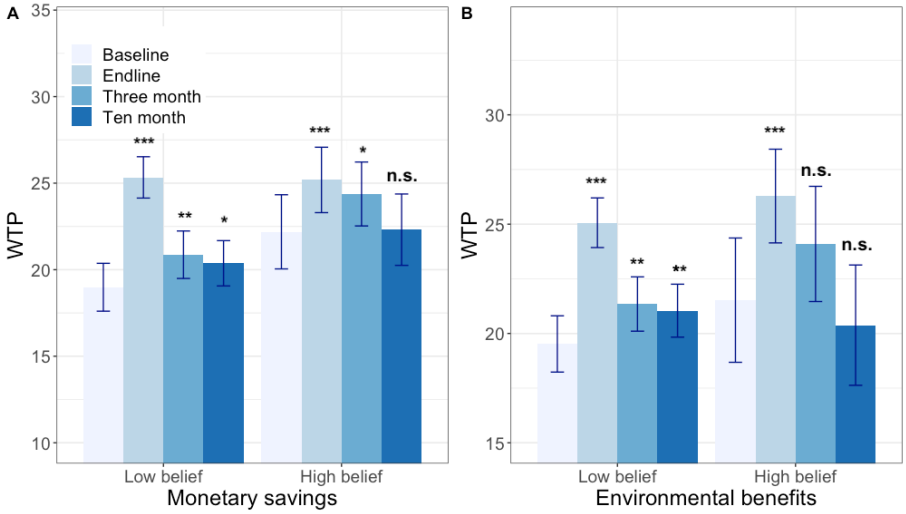
# C Response bias: logit regression

The table reports the results of a Logit regression of the complete response indicator on observable characteristics.

| Variable | Estimate | Standard Error |
|---|---|---|
| (Intercept) | −15.29 | (427.90) |
| Baseline WTP | −0.01 | (0.01) |
| Updated WTP | 0.02 | (0.01) |
| Endline WTP | −0.01 | (0.01) |
| Log(Income) | −0.06 | (0.11) |
| Age | | |
| under 30 | −0.53*** | (0.15) |
| above 60 | 14.75 | (882.74) |
| Male | −0.03 | (0.14) |
| Climate change skeptics | 0.14 | (0.35) |
| Mostly own LEDs | −0.07 | (0.32) |
| Mostly own CFLs | 0.06 | (0.30) |
| High baseline beliefs | | |
| on monetary savings | 0.17 | (0.18) |
| on environmental benefits | 0.33 | (0.20) |
| Left address | 0.76*** | (0.16) |
| Education | | |
| High school or below | 13.20 | (427.90) |
| Associate degree | 13.78 | (427.90) |
| Bachelor's degree | 13.80 | (427.90) |
| Master degree | 14.05 | (427.90) |
| PhD | 14.54 | (427.90) |
| Information treatments | | |
| CC-M | −0.17 | (0.21) |
| M-AP | 0.59*** | (0.20) |
| M-CC | 0.32 | (0.20) |

*Note:*Significance: $< 0.1$: *; $< 0.05$: **; $<0.01$: ***; Baseline, updated and endline WTP indicate the WTP before any information treatments, after the first and second information screen, respectively. M-AP, M-CC, AP-M, and CC-M represent that the consumers were assigned to monetary saving and air pollution condition, monetary saving and climate change condition, air pollution and monetary saving condition, and climate change and monetary saving condition, respectively.

# D Main results excluding subjects who did not leave their postal address in Experiment 1




Baseline beliefs and WTP

Note. Error bars indicate 95% confidence intervals. Panel A and B show the WTP of consumers categorized according to their baseline beliefs about the monetary savings and the emission reductions that can be attained by using LEDs, respectively. Each panel contains two sets of bars. In each set, the first, second, third and the fourth bar demonstrate the baseline (pre-information) WTP in Wave 1, endline (post-information) WTP in Wave 1, WTP in Wave 2, and WTP in Wave 3, respectively. The stars above bars show significance of t-tests (within-subject comparison) between the corresponding WTP and the baseline WTP in Wave 1. Significance: $< .1$: *; $< .05$: **; $< .01$: ***. n.s.: not significant at 0.1 level.

# E Baseline WTP

## E.1 Experiment 1: Baseline WTP and socio-demographics

| | OLS |
|---|---|
| (Intercept) | 12.68*** |
| | (1.54) |
| Log(income) | 0.73** |
| | (0.43) |
| University degree | −0.44 |
| | (0.65) |
| Male | 1.22** |
| | (0.54) |
| Age | 0.51* |
| | (0.29) |
| Own mostly LEDs | 5.83*** |
| | (0.58) |
| High belief: Monetary | 2.87*** |
| | (0.69) |
| Hight belief: Environmental | 0.39 |
| | (0.80) |

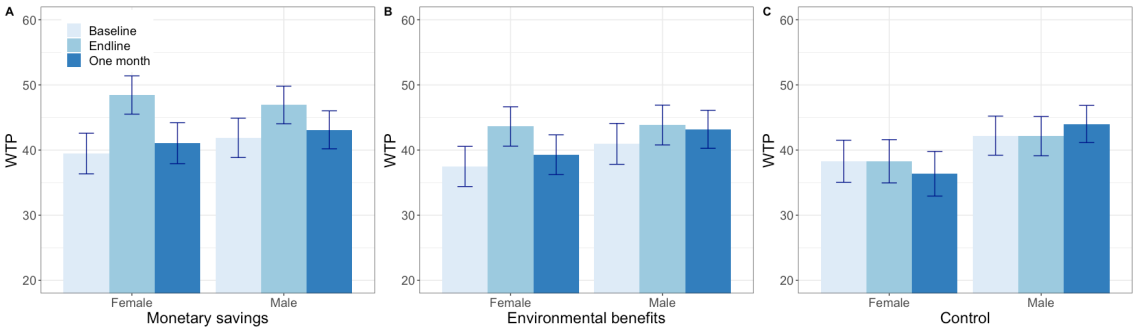
*Note:* Significance: <0.1: *; <0.05: **; <0.01: ***.

## E.2 Experiment 2: Baseline WTP and socio-demographics

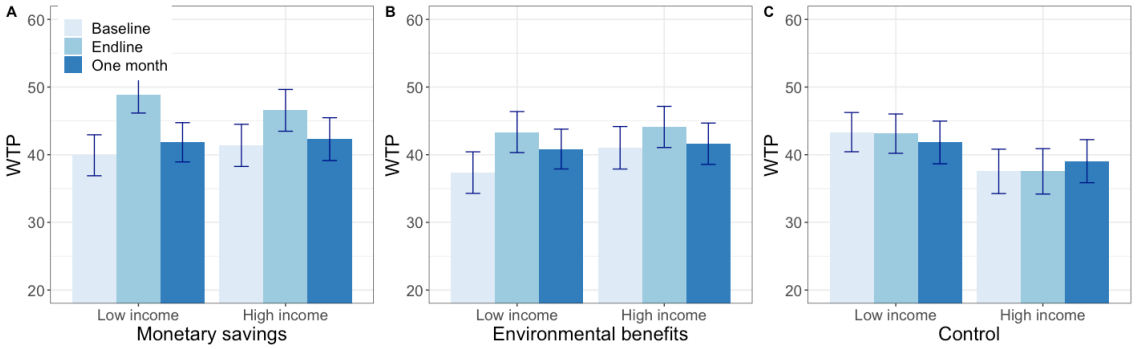
| | OLS |
|---|---|
| (Intercept) | 19.69*** |
| | (2.62) |
| Log(income) | 0.24 |
| | (0.58) |
| University degree | −2.16 |
| | (2.11) |
| Male | 0.50 |
| | (1.10) |
| Age | 0.03 |
| | (0.06) |
| Own mostly LEDs | 13.69*** |
| | (1.18) |
| High belief: Monetary | 12.55*** |
| | (1.20) |
| Hight belief: Environmental | 8.63 |
| | (1.19) |

*Note:* Significance: <0.1: *; <0.05: **; <0.01: ***.

# F Placebo tests




Note. Error bars indicate 95% confidence intervals. Panels A, B and C show the WTP of consumers categorized according to their gender. Each panel contains two sets of bars. In each set, the first, second, and third bar demonstrate the baseline (pre-information) WTP in Wave 1, endline (post-information) WTP in Wave 1, and WTP in Wave 2, respectively.




Note. Error bars indicate 95% confidence intervals. Panels A, B and C show the WTP of consumers categorized according to their income level compared to the median. Each panel contains two sets of bars. In each set, the first, second, and third bar demonstrate the baseline (pre-information) WTP in Wave 1, endline (post-information) WTP in Wave 1, and WTP in Wave 2, respectively.

# G The magnitude of potential demand effect

We provide additional evidence indicating that, even immediately after the information intervention, treated groups do not have more positive attitudes towards environmentally-friendly acts in general compared to the control groups (Wilcoxon one-sided tests).
Subjects answered the following questions at the end of the first wave.

Q32. As you may know, global warming is said to be partly caused by the emission of carbon dioxide from the burning of gasoline, oil, coal, and natural gas in cars, homes, and electric power plants. Do you favor [1: strongly; 2: moderately] or oppose [3: moderately; 4: strongly] each of the following as a way for the central or local governments to reduce both carbon dioxide emissions and global warming?

| | Treated groups | Control groups | p-values |
|---|---|---|---|
| **R**equiring that any newly constructed home, residential, or commercial building meet higher energy efficiency standards | 1.58 | 1.57 | 0.5381 |
| **R**equiring automakers to increase the fuel efficiency of cars, trucks, and SUVs to 6.7L per kilometer, even if it meant a new car would cost up to ¥3500 more to buy | 1.66 | 1.62 | 0.802 |
| **R**equiring electric utilities to produce at least 20% of their electricity from wind, solar, or other renewable energy sources, even if it cost the average household an extra ¥300 a year | 1.74 | 1.62 | 0.9921 |
| **A**greeing to an international treaty that "China promises to peak the emissions of carbon dioxide, and increase the non-fossil fuel share of consumption by up to 20 percent by the year 2030" | 1.63 | 1.61 | 0.7164 |
| **I**ncreasing taxes on gasoline so people either drive less or buy cars that use less gas | 1.80 | 1.76 | 0.8116 |
| **I**ncreasing taxes on electricity so people use less of it | 2.06 | 2.08 | 0.3774 |

Q33. How likely are you to do each of the following because of your concerns about global warming – [1: very likely, 2: somewhat likely, 3: somewhat unlikely, or 4: very unlikely]?

| | Treated groups | Control groups | p-values |
|---|---|---|---|
| **B**uy energy-efficient household appliances | 1.52 | 1.45 | 0.9399 |
| **B**uy a more fuel-efficient car, SUV, or truck | 1.69 | 1.71 | 0.3882 |
| **B**ike, ride public transit, or car pool one more time a week | 1.58 | 1.44 | 0.9989 |
| **C**ontact politicians to express your views on global warming | 2.05 | 2.03 | 0.6738 |