

Salience of co-benefits from energy efficiency and the response to energy conservation nudges

Pre-Analysis Plan

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Fieldwork dates: May 2022 to January 2023

Abstract

Green electricity contracts, where electricity is produced through renewable sources or where emissions are compensated, are becoming widespread. Utilities often offer this type of contract as a default for new customers. However, customers are not always fully aware of this characteristic. We aim to investigate whether disclosing or recalling customers the green component of their contract has a rebound effect on their electricity usage. Customers may react to such information by increasing consumption levels, as the moral cost of consuming a resource that produces little negative environmental externalities may drop. We also investigate a way to counteract a possible boomerang effect. In particular, we leverage the salience of the current energy crisis and the importance of energy transition. For the sample of customers with non-green contracts, we instead investigate how leveraging salient topics contribute to increasing energy conservation. We collaborate with an Italian utility which adopted a social information program for electricity. We randomly modify the contents of the Home Energy Report that customers regularly receive, adding a treatment that discloses the benefits of green energy and /or a treatment that emphasizes the importance of energy independence and the ecologic transition.

This document outlines our pre-analysis plan for a field experiment on the impact of a behavioural nudge on the pro-environmental behaviour of customers of an electric utility. The document summarizes (i) our experimental design, (ii) our research questions and the plan of regressions, and (iii) power calculations.

At the time of writing this plan, we designed and launched the RCT. We accessed pre-experimental administrative data which we used to identify the study sample and randomize treatment assignment.

We intend to submit this Pre-Analysis Plan to the AEA RCT Registry.

1 Context, design, sample and randomization

1.1 Context

We collaborate with a multi-utility mainly active in the North of Italy. Since 2016, the company sends Home Energy Reports to its electricity and gas customers. The Report is similar to the one first proposed by Opower (Allcott, 2011) and includes the following features:¹

- *Static neighbor comparison*: comparison of one's own average consumption in the reporting period with that of two groups: "virtuous" and "average" customers. For the former, the utility computes the average consumption of the top 75% most efficient customers with the same household size in the customer base. For the latter, the average consumption of customers with the same household size is used. The customer is informed of the % difference with respect to the average customers
- *Injunctive feedback on relative consumption*: based on relative performance, the customer receives injunctive feedback, in the form of an emoticon.
- *Dynamic comparison with self*: comparison of own consumption over the months in the reporting period and the same months of the previous year; comparison of the rolling yearly consumption with that in the previous year
- An awareness section called "Make the difference", where the customers is provided information on the environmental impact of her virtuous actions, in terms of CO2 emission savings.
- *Saving tips*: tips on how to save electricity or gas, divided into categories (behavior change, small investment, large investment). Tips are season-specific.

¹ Figure 1 shows the full standard report.

This study focuses on the electricity report. The report is sent to customers by email monthly or bimonthly soon after the electricity bill delivery, following the billing cycle. The reference periods of the report and the bill are the same.

To be eligible for the study, customers need to have a residential electricity contract and to already receive the energy report. Contracts must have been active at least since May 1st 2022, i.e. at least two months before the launch of the experiment. If customers have more than one contract, we select the main one, in terms of higher usage and relation to the main residency. Our sample includes 156,065 customers, of which 74,337 (48%) have a smart meter, allowing for hourly measurement. Some customers have multiple contracts, due for example to multiple house properties. We select the contracts for the houses where the customers are residents. In case of multiple resident contracts, we select the one with higher levels of pre-treatment usage.

Of these customers, 99,968 (64%) have green contracts, while 56,097 are grey. A green contract either uses electricity from renewable sources or, when this is not possible, compensates the Co2 emissions generated by electricity consumption. Customers can opt into the green contract. In addition, since July 2021 all new customers get the green contract by default. It is therefore possible that this latter group may not be aware of having a green contract, since they did not actively choose to have it. In what follows, we refer to customers with the green contract as green customers, and to customers with standard contracts, whose electricity comes from non-renewable sources and emissions are not compensated, as grey customers.

1.2 Design

The experiments consists in variations of the content of the report, aimed at making more salient the relationship between energy efficiency and relevant themes in current news. The treatments leverage these relationships to encourage energy conservation efforts and the shift to more sustainable consumption. In particular, we exploit the prominence in current news of two issues:

- Energy independence, defined as independence from energy sources produced abroad. In Italy, as in other countries, the energy crisis and war in Ukraine have made the issue of energy dependence from foreign, and in particular Russian, gas and oil a dramatic one. Soaring energy prices and uncertainty about future availability of gas are prominent themes in current news on a daily basis.
- Ecologic transition, defined as the movement away from non-renewable energy sources and towards renewable ones. The EU Green Deal sets the goal of reducing CO2 emissions by at least 55% by 2030, and conditions the disbursement of funds from the Next generation EU Recovery Plan to the

implementations of policies for the achievement of this goal. The government established in 2021 which was in place during the collection of the data, created a Ministry for the Ecologic Transition, specifically tasked with the achievement of the EU Green Deal targets.

A more efficient use of electricity, the adoption of energy-saving technologies and the shift to green energy and renewable sources are tightly linked to the achievement of energy independence and of the ecologic transition. Importantly, energy conservation is important also for green customers, since renewable energy is scarce and its efficient use would allow it to meet the demand of a broader set of consumers. However, existing research on rebound effects after the adoption of energy-efficient technologies suggests that green customers may not feel the need to control their consumption level (Günther et al., 2020; Jacobsen et al., 2012; Harding and Rapson, 2019).

Given the composition of our sample, we therefore aim to address separate **research questions** for grey and green customers.

- For grey customers, we ask what the impact of making salient the importance of energy conservation and sustainable energy usage for energy independence and the ecologic transition is on customers' engagement with the utility, electricity consumption and investments in energy efficiency and renewable energy.
- For green customers, we address the previous research question on salience but we are also interested in: (i) whether reminding them – or revealing to them – the implications of their contract on the environment, particularly that their electricity consumption generates no Co2 emissions (or that their CO2 emissions are compensated), causes a rebound effect in terms of electricity consumption, investment in energy efficiency and engagement; and (ii) whether making salient the importance of continued effort to save energy in order to help the ecologic transition and energy independence can offset any rebound effect.

This implies that we randomise grey customers into a *salience* and control treatment, where the salience treatment reminds them of the impact of their consumption on the ecologic transition and energy independence. Green customers instead are allocated to one of four conditions, resulting from the interaction of two treatment dimensions, in a factorial design. The first treatment dimension (T1) mirrors the one for grey customers, comparing a control and a salience condition. The second treatment dimension (T2) tests the effect of disclosing the benefits of green energy – the *green disclosure* condition – to a control condition. This 2x2 design for green customers results in 4 groups: control, T1 only, T2 only, both T1 and T2.

We implement the treatments by modifying the "Make a difference" and tip sections of the report as follows:²

- Grey and green customers, salience treatment (T1)
 - (i). We modify the encouragement to customers: 'Make a difference: your consumption significantly affects the environment', by adding 'and the ecologic transition/energy independence'. In addition, this section informs customers of the CO2 emissions associated with their consumption. We add to this statement a reminder that, in order to favor the ecologic transition/energy independence, the customer's effort is necessary. Control customers see the standard "Make a difference" section.
 - (ii). We include tips encouraging customers to learn more about the benefits of green energy and to invest in energy efficiency (e.g., LED lights or energy-efficient appliances) or in renewable energy (e.g., shift to the green contract or install solar panels). All tips refer to the importance of these behaviors for the ecologic transition/energy independence. Tips are similar for control customers, except that they make no reference to these issues.
- Green customers, green disclosure treatment (T2)
 - (i). We modify the "Make a difference" section by informing customers that, thanks to their green contract, they have compensated all the CO2 emissions generated by their electricity usage. Control customers receive the standard message, reporting just the CO2 emissions associated with the customer's level of energy savings.

Each customer is assigned to the same treatment for the entire duration of the study. Within subjects, we vary whether reports focus on energy independence or the ecologic transition. The first and the third report cycles, sent in July-August 2022 and November-December 2022³ are devoted to ecologic transition; and the second report cycle, sent in September-October 2022, focuses on the energy independence.

We consider the following outcome variables and distinguish between primary and secondary dimensions of interest:

- Engagement, measured as clicks on the links embedded in the tips. These links take customers to pages on the utility's portal describing the benefits of renewable energy, the ways to improve efficiency in the house, the meaning of the ecological transition and ways to contribute to it. Clicks on these pages are immediate measures of response to the messages included in the reports. This is a primary dimension of interest.

² Figures 2 and 3 report the original treatment and control text for each report.

³ Given the experience of lower response rate to the campaigns launched in Summer, the treatment is repeated twice.

- Electricity consumption: it is recorded monthly for customers with standard meters, and daily for those with second-generation smart-meters. This is a primary dimension of interest.
- Investments in energy efficiency and renewable energy, measured through take-up of the products offered by the utility, such as solar panels, energy-efficient air conditioners, or LED kits.⁴ These are secondary dimensions of interest.

Separately for green and grey customers, we apply a stratified individual level randomization, to maximize ex-ante balance across treatment and control group along a battery of important observable characteristics (Bruhn and McKenzie, 2009). Strata are obtained from the combination of the following variables:

- Having a gas contract
- Having a water contract
- Receiving at least another report, besides the electricity one
- Having a second-generation smart meter
- Having more than one electricity contract (although for the sake of the analysis only the main one is considered and monitored)

Within each of the 28 strata, we sort customer by pre-treatment electricity usage and assign adjacent customers to treatment and control group. In particular, for grey customers we assign every other customer to the control group (50% treatment and 50% control). For green customers, every customer is assigned, in turn, to one of the following conditions: treated salience-treated green disclosure; treated salience- control green disclosure; control salience-treated green disclosure; control salience-control green disclosure. Each group includes about 25% of the sample.

2 Research questions

The study addresses the following research questions. For each of them the specification, the test of hypothesis and the sample of analysis are indicated.

Research Question 1 *What is the impact of increasing the salience of the pro-environmental message by leveraging high-impact topics like the energy independence and energy transition?*

⁴ It should be noticed that the report cannot include any marketing content, nor can embed direct links to the utility market place where those products are sold.

We address the research question by estimating:

$$y_{it} = \beta \text{Salience}_i * \text{Post}_t + \delta \text{Post}_t + \gamma_i + \omega_t + \varepsilon_{it} \quad (1)$$

where y_{it} measures i. engagement; ii. electricity usage; iii. purchase of energy efficient items. *Salience* takes value one for customers assigned to receive the report with the salience treatment (T1) and zero otherwise. *Post_t* takes value one after the launch of the experiment, on July 2022 and zero before. The model includes both individual and time fixed effects. Standard errors are clustered at the level of customer. The sample includes all grey customers (N=56,097) and a sub-sample of green customers (Control and T1 only, N=49,954). The time window spans from May 2022 to January 2023.

Research Question 2 *Is there a rebound effect from disclosing/ reminding customers of the green features of green contracts?*

Research Question 3 *Can increased salience on current energy and environmental topics contrast the rebound?*

We address the research questions by exploiting the experimental factorial design on the sample of customers with green contracts (control, T1 only, T2 only and both T1 and T2, N=99,968) and estimate:

$$y_{it} = \beta_0 \text{Post}_t + \beta_1 \text{Salience}_i * \text{Post}_t + \beta_2 \text{GD}_i * \text{Post}_t + \gamma_i + \beta_3 \text{Salience}_i * \text{GD}_i * \text{Post}_t + \omega_t + \varepsilon_{it} \quad (2)$$

where *Salience* takes value one for customers assigned to receive the report with the salience treatment (T1) and zero otherwise; *GD_i* stands for Green Disclosure and takes value of one if the customers are informed that, thanks to their green contract, they have compensated all the CO2 emissions generated by their electricity usage (T2) and zero otherwise; the remaining parts are similar to the previous model. We test our hypothesis by looking at β_2 which gives the extent of the rebound effect (if any), controlling for whether the individual also received the salience treatment, while β_3 reveals the marginal impact of increasing the salience of energy topics on the top of disclosing the green contract features.

We commit to correcting for multiple hypothesis testing all primary outcome dimensions. We compute the sharpened two-stage q-values (FDR-adjusted q-values), following Benjamini et al. (2006). We consider the analysis of the secondary dimensions as exploratory.

2.1 Sample Balance at Baseline

For each variable available at the time of the randomization, we conduct balance tests across treatment groups. We denote these variables as y_{i0} and for each of them we estimate the following equations:

$$y_{i0} = \beta_0 + \beta_1 \text{Salienc}_i + \varepsilon_{i0} \quad (3)$$

for the sample of grey contracts and green contracts in the green disclosure treatment (Control and T1 only). β_1 provides the difference in variable y between customers assigned to the salience treatment (N=52,996) and those assigned to the control (N=53,055).

$$y_{i0} = \beta_0 + \beta_1 \text{Salienc}_i + \beta_2 \text{GD}_i + \beta_3 \text{Salienc}_i * \text{GD}_i + \varepsilon_{i0} \quad (4)$$

for the sample of customers with green contracts (Control, T1 only, T2 only, both T1 and T2; N=99,968). The β_k coefficients provide the difference of being in one of the three equally sized treatment groups with respect to the omitted category, represented by customers in the control group for both the salience and the green disclosure treatment.

Table 1 reports, for the variables employed in the construction of strata and other relevant dimensions, the means in the various experimental groups and the p-value of tests for mean equality. As expected, we do not detect any significant difference in observable characteristics across the various samples.

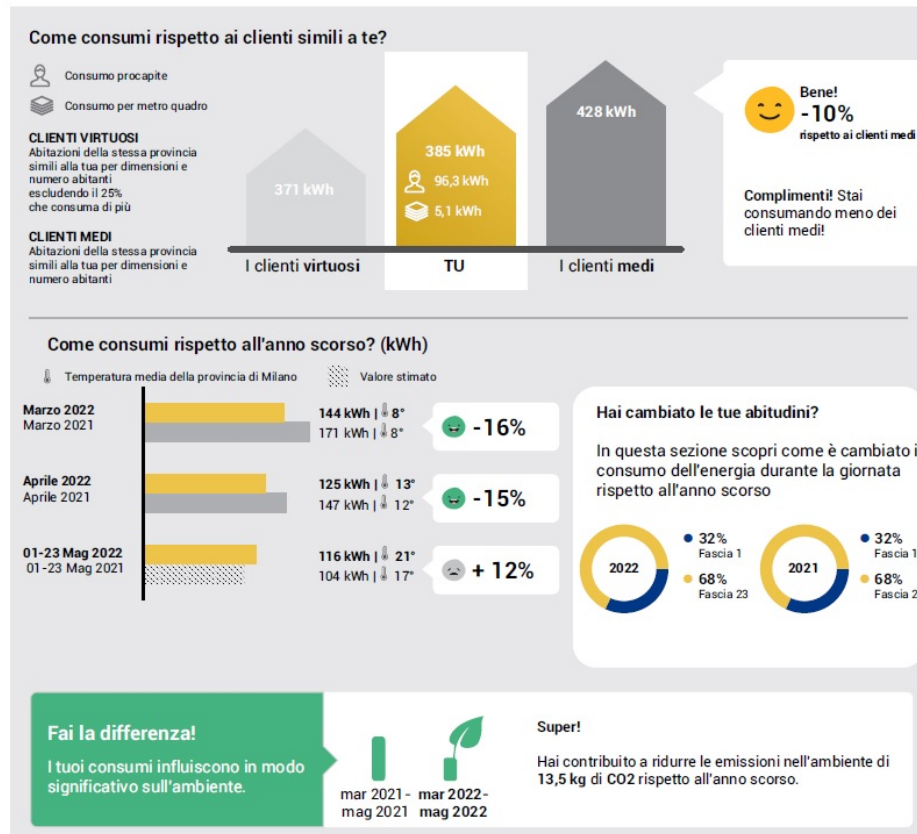
3 Power calculations

We run power calculations for the key outcome, i.e. electricity usage, separately for the three research questions. We follow the approach suggested by Burlig et al. (2020) and estimate MDEs using a standard panel fixed effects/difference-in-differences model with individual and time fixed effects, serially correlated errors, 80% power and 5% significance. At the time of this writing we can access a pilot extraction of pre-treatment monthly data for 77,877 customers (from Dec 1 2018 to January 2021) which we use to extrapolate key parameters. We use a model with two pre-treatment months (May-June 2022) and six post-treatment periods (July to December 2022). For RQ1, we use a sample of 106,051 customers and two treatment arms: we obtain an MDE of about 0.6%. For RQ2 and RQ3, we use a sample of 99,968 customers and four treatment arms: MDEs are 0.85%. Overall, the MDEs we find are commonly considered as small and are aligned with the magnitude of impacts of social information programs (DellaVigna and Linos, 2020).

References

- Allcott, H. (2011). Social norms and energy conservation. *Journal of Public Economics*, 95(9-10):1082–1095.
- Benjamini, Y., Krieger, A. M., and Yekutieli, D. (2006). Adaptive linear step-up procedures that control the false discovery rate. *Biometrika*, 93(3):491–507.
- Bruhn, M. and McKenzie, D. (2009). In Pursuit of Balance: Randomization in Practice in Development Field Experiments. *American Economic Journal: Applied Economics*, 1(4):200–232. Publisher: American Economic Association.
- Burlig, F., Preonas, L., and Woerman, M. (2020). Panel data and experimental design. *Journal of Development Economics*, 144:102458.
- DellaVigna, S. and Linos, E. (2020). RCTs to Scale: Comprehensive Evidence from Two Nudge Units. Working Paper 27594, National Bureau of Economic Research. Series: Working Paper Series.
- Günther, S. A., Staake, T., Schöb, S., and Tiefenbeck, V. (2020). The behavioral response to a corporate carbon offset program: A field experiment on adverse effects and mitigation strategies. *Global Environmental Change*, 64:102123.
- Harding, M. and Rapson, D. (2019). Does Absolution Promote Sin? A Conservationist’s Dilemma. *Environmental and Resource Economics*, 73(3):923–955.
- Jacobsen, G. D., Kotchen, M. J., and Vandenberg, M. P. (2012). The behavioral response to voluntary provision of an environmental public good: Evidence from residential electricity demand. *European Economic Review*, 56(5):946–960.

Tables and Figures



Se vuoi risparmiare, puoi!



Limita i consumi del condizionatore: non superare i 5°C di differenza con la temperatura esterna



Posiziona il condizionatore lontano da divani, tende o altri ostacoli che potrebbero limitare e la circolazione dell'aria

Figure 1: Standard electricity report

Table 1: Summary statistics and balance

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Sample 1 (N=106,051)			Sample 2 (N=99,968)			
	Saliency	Control	p-value	Saliency- No disclosure	No saliency- Disclosure	Saliency- Disclosure	p-value
Contract since more than 6 months	0.966	0.965	0.249	0.931	0.930	0.930	0.703
More than 1 electr contract	0.033	0.032	0.807	0.036	0.037	0.036	0.836
Smart meter	0.468	0.469	0.719	0.492	0.493	0.494	0.994
Has gas contract	0.832	0.833	0.746	0.838	0.838	0.839	0.990
Has water contract	0.407	0.407	0.892	0.399	0.398	0.398	0.940
Receive at least another report	0.684	0.685	0.675	0.721	0.721	0.721	0.998
Past yearly usage (KWh)	2273	2284	0.477	2273	2270	2270	0.800
Household size	1.005	1.005	0.422	1.006	1.005	1.005	0.995
Green contract	0.471	0.471	0.960				

Note: This table reports customer level means and sample balance. Columns 3 and 7 report the p-value of t-test for mean equality and for F-test of joint significance of the treatments. Sample 1 includes customers with grey contracts and with green contracts and in the control group of the green disclosure treatment. Sample 2 includes customers with green contracts.

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Wave	Green	Treat Salience	Treat GD	Section "Make the difference"	Title tip section	Tip
1-3 T	0	1	0	(Left): "Fai la differenza! I tuoi consumi influiscono in modo significativo sull'ambiente e sul successo della transizione ecologica ." (Right): "Hai contribuito ad aumentare/ diminuire le emissioni di XX kg di CO2 rispetto all'anno scorso. Per favorire la transizione ecologica , puoi fare ancora di più. Scopri come consumare meno e meglio attraverso i tuoi comportamenti e l'investimento in energia rinnovabile"	I nostri consigli per te. Contribuisci anche tu al successo della transizione ecologica !	L'uso delle rinnovabili è fondamentale per la transizione ecologica : scopri tutti i vantaggi di passare all' energia verde da fonti rinnovabili 'Per favorire la transizione ecologica e far fronte all'aumento dei costi dell'energia, è il momento di investire in efficienza energetica. Scopri cosa puoi fare per migliorare l'efficienza della tua casa attraverso il Relamping LED.
	0	0	0	(Left): "Fai la differenza! I tuoi consumi influiscono in modo significativo (Right): "Hai aumentato / diminuito le emissioni di XX kg di CO2 rispetto all'anno scorso. Scopri come consumare meno e meglio."	I nostri consigli per te.	Scopri tutti i vantaggi dell' energia verde da fonti rinnovabili 'Scopri cosa puoi fare per migliorare l'efficienza della tua casa attraverso il Relamping LED.
	1	1	0	(Left): "Fai la differenza! Le tue scelte di consumo hanno un impatto significativo sull'ambiente e sul successo della transizione ecologica (Right): "Hai aumentato / diminuito le emissioni di XX kg di CO2 rispetto all'anno scorso. Per favorire la transizione ecologica , è necessario il tuo contributo. Scopri come consumare meno e meglio aumentando la tua efficienza energetica.	I nostri consigli per te. Contribuisci anche tu al successo della transizione ecologica !	L'uso delle rinnovabili è fondamentale per la transizione ecologica : scopri tutti i vantaggi dell' energia verde da fonti rinnovabili 'Per favorire la transizione ecologica e far fronte all'aumento dei costi dell'energia, è il momento di investire in efficienza energetica. Scopri cosa puoi fare per migliorare l'efficienza della tua casa attraverso il Relamping LED.
	1	0	0	(Left): "Fai la differenza! I tuoi consumi influiscono in modo significativo (Right): "Hai aumentato / diminuito le emissioni di XX kg di CO2 rispetto all'anno scorso. Scopri come consumare meno e meglio."	I nostri consigli per te.	Scopri tutti i vantaggi dell'energia verde da fonti rinnovabili . 'Scopri cosa puoi fare per migliorare l'efficienza della tua casa attraverso il Relamping LED.

(a) Salience arms: ecologic transition

2-A	0	1	0	(Left): "Fai la differenza! I tuoi consumi influiscono in modo significativo sull'ambiente e sul raggiungimento dell' autonomia energetica " (Right): "Hai contribuito ad aumentare/ diminuire le emissioni di XX kg di CO2 rispetto all'anno scorso. Per favorire l' autonomia energetica , puoi fare ancora di più. Scopri come consumare meno e meglio attraverso i tuoi comportamenti e l'investimento in energia rinnovabile. "	I nostri consigli per te. Contribuisci anche tu al raggiungimento dell' autonomia energetica !	L'attuale instabilità del mercato dell'energia spinge a pensare a soluzioni per l'autonomia e la sicurezza energetica, come ad esempio l'installazione di pannelli fotovoltaici. Scopri come funziona e quanto puoi risparmiare con il fotovoltaico 'L'uso delle rinnovabili è fondamentale per diminuire la dipendenza dalle fonti energetiche estere: conosci tutti i vantaggi dell'energia verde da fonti rinnovabili?
	0	0	0	(Left): "Fai la differenza! I tuoi consumi influiscono in modo significativo sull'ambiente." (Right): "Hai aumentato / diminuito le emissioni di XX kg di CO2 rispetto all'anno scorso. Scopri come consumare meno e meglio."	I nostri consigli per te.	'L'installazione di pannelli fotovoltaici permette di produrre energia verde in autonomia. Scopri come funziona e quanto puoi risparmiare con il fotovoltaico ' Scopri tutti i vantaggi di passare all'energia verde da fonti rinnovabili
	1	1	0	(Left): "Fai la differenza! Le tue scelte di consumo hanno un impatto significativo sull'ambiente e sul raggiungimento dell' autonomia energetica ." (Right): "Hai contribuito ad aumentare/ diminuire le emissioni di XX kg di CO2 rispetto all'anno scorso. Scopri come consumare meno e meglio."	I nostri consigli per te. Contribuisci anche tu al raggiungimento dell' autonomia energetica !	L'attuale instabilità del mercato dell'energia spinge a pensare a soluzioni per l'autonomia e la sicurezza energetica, come ad esempio l'installazione di pannelli fotovoltaici. Scopri come funziona e quanto puoi risparmiare con il fotovoltaico 'L'uso delle rinnovabili è fondamentale per diminuire la dipendenza dalle fonti energetiche estere: scopri tutti i vantaggi dell'energia verde da fonti rinnovabili.
	1	0	0	(Left): "Fai la differenza! I tuoi consumi influiscono in modo significativo sull'ambiente." (Right): "Hai aumentato / diminuito le emissioni di XX kg di CO2 rispetto all'anno scorso. Scopri come consumare meno e meglio."	I nostri consigli per te.	'L'installazione di pannelli fotovoltaici permette di produrre energia verde in autonomia. Scopri come funziona e quanto puoi risparmiare con il fotovoltaico ' Scopri tutti i vantaggi dell'energia verde da fonti rinnovabili .

(b) Salience arms: energy independence

Figure 2: Salience treatments for RQ1

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Wave	Green	Treat Salience	Treat GD	Section "Make the difference"	Title tip section	Tip
1-3 T	1	1	1	<p><i>(Left):</i> "Fai la differenza! I tuoi consumi influiscono in modo significativo sull'ambiente e sul successo della transizione ecologica"</p> <p><i>(Right):</i> "Grazie al tuo contratto con energia verde hai compensato XX Kg di CO₂, azzerando il tuo impatto sull'ambiente.</p> <p>Per favorire la transizione ecologica, puoi fare ancora di più. Scopri come consumare meno e meglio aumentando la tua efficienza energetica.</p>	I nostri consigli per te. Contribuisci anche tu al successo della transizione ecologica!	L'uso delle rinnovabili è fondamentale per la transizione ecologica : scopri tutti i vantaggi dell' energia verde da fonti rinnovabili Per favorire la transizione ecologica e far fronte all'aumento dei costi dell'energia, è il momento di investire in efficienza energetica. Scopri cosa puoi fare per migliorare l'efficienza della tua casa attraverso il Relamping LED.
	1	0	1	<p><i>(Left):</i> "Fai la differenza! I tuoi consumi influiscono in modo significativo sull'ambiente."</p> <p><i>(Right):</i> "Grazie al tuo contratto con energia verde hai compensato XX Kg di CO₂, azzerando il tuo impatto sull'ambiente. Scopri come consumare meno e meglio."</p>	I nostri consigli per te.	Scopri tutti i vantaggi dell'energia verde da fonti rinnovabili . 'Scopri cosa puoi fare per migliorare l'efficienza della tua casa attraverso il Relamping LED.
	1	1	0	<p><i>(Left):</i> "Fai la differenza! Le tue scelte di consumo hanno un impatto significativo sull'ambiente e sul successo della transizione ecologica."</p> <p><i>(Right):</i> "Hai aumentato / diminuito le emissioni di XX kg di CO₂ rispetto all'anno scorso. Per favorire la transizione ecologica, è necessario il tuo contributo. Scopri come consumare meno e meglio aumentando la tua efficienza energetica.</p>	I nostri consigli per te. Contribuisci anche tu al successo della transizione ecologica!	L'uso delle rinnovabili è fondamentale per la transizione ecologica : scopri tutti i vantaggi dell' energia verde da fonti rinnovabili Per favorire la transizione ecologica e far fronte all'aumento dei costi dell'energia, è il momento di investire in efficienza energetica. Scopri cosa puoi fare per migliorare l'efficienza della tua casa attraverso il Relamping LED.
	1	0	0	<p><i>(Left):</i> "Fai la differenza! I tuoi consumi influiscono in modo significativo sull'ambiente."</p> <p><i>(Right):</i> "Hai aumentato / diminuito le emissioni di XX kg di CO₂ rispetto all'anno scorso. Scopri come consumare meno e meglio."</p>	I nostri consigli per te.	Scopri tutti i vantaggi dell'energia verde da fonti rinnovabili . 'Scopri cosa puoi fare per migliorare l'efficienza della tua casa attraverso il Relamping LED.

(a) Salience arms: ecologic transition

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Wave	Green	Treat Salience	Treat GD	Section "Make the difference"	Title tip section	Tip
2-A	1	1	1	<p><i>(Left):</i> "Fai la differenza! I tuoi consumi influiscono in modo significativo sull'ambiente e sul raggiungimento dell'autonomia energetica."</p> <p><i>(Right):</i> "Grazie al tuo contratto con energia verde hai compensato XX Kg di CO₂, azzerando il tuo impatto sull'ambiente. Per favorire l'autonomia energetica, puoi fare ancora di più. Scopri come consumare meno e meglio attraverso i tuoi comportamenti e l'investimento in energia rinnovabile"</p>	I nostri consigli per te. Contribuisci anche tu al raggiungimento dell' autonomia energetica!	L'attuale instabilità del mercato dell'energia spinge a pensare a soluzioni per l'autonomia e la sicurezza energetica, come ad esempio l'installazione di pannelli fotovoltaici. Scopri come funziona e quanto puoi risparmiare con il fotovoltaico L'uso delle rinnovabili è fondamentale per diminuire la dipendenza dalle fonti energetiche estere: scopri tutti i vantaggi dell'energia verde da fonti rinnovabili.
	1	0	1	<p><i>(Left):</i> "Fai la differenza! I tuoi consumi influiscono in modo significativo sull'ambiente."</p> <p><i>(Right):</i> "Grazie al tuo contratto con energia verde hai compensato XX Kg di CO₂, azzerando il tuo impatto sull'ambiente. Scopri come consumare meno e meglio."</p>	I nostri consigli per te.	L'installazione di pannelli fotovoltaici permette di produrre energia verde in autonomia. Scopri come funziona e quanto puoi risparmiare con il fotovoltaico 'Scopri tutti i vantaggi dell'energia verde da fonti rinnovabili.
	1	1	0	<p><i>(Left):</i> "Fai la differenza! Le tue scelte di consumo hanno un impatto significativo sull'ambiente e sul raggiungimento dell'autonomia energetica."</p> <p><i>(Right):</i> "Hai contribuito ad aumentare/ diminuire le emissioni di XX kg di CO₂ rispetto all'anno scorso. Scopri come consumare meno e meglio."</p>	I nostri consigli per te. Contribuisci anche tu al raggiungimento dell' autonomia energetica!	L'attuale instabilità del mercato dell'energia spinge a pensare a soluzioni per l'autonomia e la sicurezza energetica, come ad esempio l'installazione di pannelli fotovoltaici. Scopri come funziona e quanto puoi risparmiare con il fotovoltaico L'uso delle rinnovabili è fondamentale per diminuire la dipendenza dalle fonti energetiche estere: scopri tutti i vantaggi dell'energia verde da fonti rinnovabili.
	1	0	0	<p><i>(Left):</i> "Fai la differenza! I tuoi consumi influiscono in modo significativo sull'ambiente."</p> <p><i>(Right):</i> "Hai aumentato / diminuito le emissioni di XX kg di CO₂ rispetto all'anno scorso. Scopri come consumare meno e meglio."</p>	I nostri consigli per te.	L'installazione di pannelli fotovoltaici permette di produrre energia verde in autonomia. Scopri come funziona e quanto puoi risparmiare con il fotovoltaico 'Scopri tutti i vantaggi dell'energia verde da fonti rinnovabili.

(b) Salience arms: energy independence

Figure 3: Green disclosure and salience treatments for RQ2-RQ3