A Work Project, presented as part of the requirements for the Award of a Master's degree in Economics from the Nova School of Business and Economics.

THE ROLE OF SALIENCE AND INFORMATION ON AGENTS' PREFERENCES: EVIDENCE FROM A QUASI-NATURAL EXPERIMENT IN PORTUGAL

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16/12/2022

Abstract[1]:

We perform a randomized control trial to evaluate the role of salience and information on individuals' preferences. Relying on a quasi-natural experiment, we ask individuals to evaluate two policies recently implemented by the Portuguese Government, both targeted at reducing fuel prices: a cash grant (more salient) and a tax reduction (less salient). We use a random treatment that provides information about the amount of money each surveyed household is saving through each policy. We do not find higher support for the more salient policy. However, we show that the treatment is highly significant in shifting individuals' preferences towards rational preferences. This result is important for policy makers and calls for clearer and more targeted communication on policy implications.

Keywords:

Salience, Information, Behavior Economics, Quasi-Natural Experiment, Randomized Control Trial.

This work used infrastructure and resources funded by Fundação para a Ciência e a Tecnologia (UID/ECO/00124/2013, UID/ECO/00124/2019 and Social Sciences DataLab, Project 22209), POR Lisboa (LISBOA-01-0145-FEDER-007722 and Social Sciences DataLab, Project 22209) and POR Norte (Social Sciences DataLab, Project 22209).

[1] I am extremely thankful for all the support, patient guidance and encouragement given by Prof. Ana Gouveia. I have been very lucky to have an advisor who cared so much about my work and who was always available to help me. I must also thank my friends and my mum for all the unconditional support.

1. Introduction

In order to do good economics, you have to keep in mind that people are human -- We are humans, not econs (Thaler, 2017*)*. Behavior economists have been discussing that agents do not act as purely economic agents ("econs") and do not make fully rational choices, as expected by the contemporary Neoclassical School (Thaler, 2017).

These findings have many implications for other fields of economics, namely for public finance. From the combination of the knowledge from behavioral economics and public finance, the discussion on salience was born. Public policies are not always fully perceived by the economic agents, in particular when they are not salient. We use the term "salient" to refer to the visibility of a given policy and how its presentation affects the economic agents' behavior (Chetty, 2008). Moreover, information also mediates how policies are perceived by the beneficiaries, impacting their decisions and their assessment of those policies (Saez, 2009).

There is a growing branch of literature exploring different forms of salience and information and their implications for agents.

In this work project we study the impact of salience and information on agents' preferences for two different subsidies policies, with the same goal. For that, we will base our analysis in two policies implemented by The Portuguese Government in response to the rising fuel prices – the *Autovoucher* (a direct subsidy to households) and the reduction in fuel taxes. Initially, the Portuguese Government introduced a cash transfer for fuel consumers – the *Autovoucher* program. This was a lump-sum, independent from the level of consumption. Consumers would pay the regular fuel price and would then receive a

fixed monthly lump sum in the bank account. This was a highly salient benefit, as consumers would see the cash credited in their bank account.

Subsequently, this policy was replaced by a temporary reduction on fuel taxes, that acts as a discount in the final price. This price reduction is not salient in the prices displayed nor in the invoice. Consumers see the final price inclusive of the discount. This makes them less aware of the government intervention.

The *Autovoucher* and the subsequent policy are a quasi-natural experiment that allow us to assess the impact of subsidy salience and information on the agents' evaluation of these policies. By conducting a survey on policy preferences, we assess whether agents rank the two policies in a rational way, given their consumption profile and the relative benefits of each policy for their personal case. Moreover, by running a randomized control experiment, we assess the impact of making the benefit of the second policy more salient to consumers on the ordering of policy preferences. If agents fully grasp the benefits derived from each policy, this information will not add to their information set and would thus have no impact on the ordering of those policies.

We collected 934 valid responses, and we find that individuals do not have higher preferences for the most salient policy (*Autovoucher*). Indeed, the majority of the respondents have higher preferences for the reduction in taxes (the less salient policy), even among those that benefit more from the *Autovoucher*.

Additionally, we also find that the treatment effect is highly significant. In other words, giving information about the amount of money each individual is saving through each policy is able to shift individuals' preferences towards more rational preferences.

For the respondents that benefit more from the *Autovoucher*, the treatment increases the preference for the *Autovoucher* policy by 30pp, from 44% (control group) to 74%

(treatment group). For the individuals that benefit more from the reduction in taxes, the preference for the tax reduction increases by 15pp, from 75% (control group) to 90% (treatment group).

We therefore contribute to the literature on behavioral economics, in particular to the empirical literature on salience, by showing the impact of information on individuals' preferences, using a quasi-natural experiment in Portugal. This study provides evidence that information plays a significant role in shifting individuals' preferences toward rational ones, being an important take away for policy makers. Our study shows that individuals are not able to fully understand the impact of the two policies, calling for better and targeted communication.

The rest of the paper is organized as follows: in Section 2, we describe the two policies and their main features (i.e. the *Autovoucher* and the reduction in fuel taxes); in Section 3, we describe our experiment, in Section 4, we review the existent literature, in Section 5, we describe the methods we use; in Section 6, we discuss the data; in Section 7, we present the results; in Section 8, we discuss the conclusions of our study, its limitation and future research avenues.

2. The two policies: the *Autovoucher* and the Reduction of Fuel Taxes.

This section presents the two policies covered in the study, elaborating on their main features.

Autovoucher

The *Autovoucher* was a highly salient subsidy program. From March 2022 and until April 2022, each consumer aged 16 or older benefited from 20€ per month (independently of

the fuel liters consumed)[2]. To get the benefit, agents had to register on the *IVAvoucher* online platform and do a purchase with their bank card at a registered gas station. In doing so, 20€ were automatically credited to the costumers' bank account.

One of the main advantages of the *Autovoucher* program was the possibility of maintaining the price signal for gasoline and diesel aiming to reduce fuel consumption– the government was subsidizing the consumption of fuel, but it was not reflected directly in the final prices. This is an advantage because the goal of this policy was not to incentivize the consumption of fuel.

Additionally, it was a highly salient program because consumers knew exactly how much they were receiving as a subsidy per month and could see it clearly in their bank records.

Moreover, as the benefit was a fixed amount, it was progressive, in the sense that, in relative terms, it represented a higher fraction of the budget of lower income households.[3]

As a disadvantage, this program was not an automatic discount – in order to benefit, customers had to register online in the *IVAvoucher* website. As a result, a person without internet access or no knowledge of the program would be excluded from it, a feature that could disproportionately exclude lower income households or the elderly. In any case, take up was high: according to the Portuguese Government, this program had a total of 3 114 491 registered citizens (34% of people aged 15 years and older in Portugal (Pordata, 2021)), corresponding to a government expenditure of 124 million euro (Portuguese Government, 2022).

Reduction in Fuel Taxes

[2] From November 2021 and until February 2022, the *Autovoucher's* benefit was 5€ per month.
[3]Even if low-income households do not have a vehicle, they would still be able to benefit from *Autovoucher*. To benefit from the program, they only need to do a purchase with their bank card at a registered gas station.

In April 2022, the Portuguese Government decided to replace the *Autovoucher* program with a temporary reduction in fuel taxes. This reduction, still in place, is equivalent to a decrease in VAT from 23% to 13% and to a compensation for gains in VAT due to the rise in fuel prices (Portuguese Government, 2022). Therefore, the discount per liter of diesel and gasoline are not constant over time and varied according to the changes in fuel prices. At the time of this work project, the reduction in taxes corresponded to a discount of 0.28€ per liter for diesel and 0.26€ for gasoline (Portuguese Government, 2022).

Contrary to the *Autovoucher*, the temporary reduction in taxes is a non-salient subsidy because the amount that households are saving (i.e. the government support) is not visible. This may affect how the policy is perceived by agents, in comparison with the *Autovouche*r.

Additionally, if the decrease in taxes results in lower final prices compared with the counterfactual of no tax reduction (as it is intended to do), it could mitigate the price signal and stimulate demand, leading to even higher fuel prices. However, this can be considered a minor problem because we are in a context of high fuel prices. According to Eurostat (2022), on 14th March 2022, the price of 1 liter of Euro-super 95 was 2.021€, corresponding to the highest value since Weekly Oil Bulletin was first published in 1994.

Moreover, tax reductions also have the disadvantage of being an expensive policy since there is no limit to government intervention. In 2022, the Portuguese Government spent more than 1 000 M€ in this policy alone (0,5% of GDP) (Portuguese Government, 2022).

Furthermore, and unlike the *Autovoucher*, the temporary reduction in taxes is automatic – making it universal for fuel consumers - and benefits only diesel and gasoline customers, making it more targeted.

According to the 2015/2016 Household Expenditure Survey conducted by INE, households with higher incomes (i.e. in the highest quintiles of income) have higher access to cars. In Portugal, in 2016, 52% of households in the 1st income quintile had access to a car while in the 5th quintile (i.e. individuals with higher income) it was 91% (INE,2017). Therefore, we can expect higher income individuals to consume more fuel. In this case, the policy becomes regressive.

3. Experiment

This change in policies, from a highly salient subsidy to a non-salient one, provide good conditions to run an experiment aiming to test the importance of salience on agents' preferences and to test the effect of information in shaping these preferences.

By running a survey, we first assess whether the preferences over the two policies follows economic rationality, with agents favoring the policy with the largest benefit given their personal consumption patterns. We expect the respondents to understand better the more salient benefit and, thus, being able to better assess it in comparison with the less salient one.

Afterwards, we assess if the rational order of preferences for each policy is affected when we give the consumers information about the amount they are saving through each policy, making the two benefits equally salient.

To address this question, we conduct a randomized control trial, using a survey experiment in Portugal. We ask questions about the number of liters spent by month in gasoline and diesel at the agents' household. Based on the answers to this question, we create a treatment message which is randomly displayed for half of the sample. The treatment group is exposed to the treatment message containing information about the amount of money saved in the household through the *Autovoucher* program and comparing it to the benefits their household gets via the temporary reduction in fuel taxes. After that, the

agents are asked to evaluate both programs. The control group will also be asked to evaluate both policies but will not have access to the treatment message.

Based on this, we assess (i) if agents behave rationally in the face of two policies that differ in their salience; and (ii) whether the exposure to the treatment impacts the order of preferences. We control for some observable variables that may influence the agent's preferences.

4. Literature review

Our work is built on and relates to the literature on behavioral economics and public finance, in particular to the empirical literature on salience. This literature has been growing as a subfield of behavioral economics, contributing to the emerging literature on behavioral public finance.

This work project contributes to the existent evidence that individuals respond not only to economic incentives but also to the way they are presented. There is evidence that non-salient (i.e. non-visible) consumption taxes do not lead to changes in quantities demanded, as one would expect from standard economic theory. (Varela, 2016).

Chetty, Looney and Kroft (2007) conducted two empirical studies in this field. The first study uses an experiment in US grocery stores. In some supermarkets (control group), the sales tax was not displayed on the shelf and was only added at the register (this is the common practice for the sales tax in the US); while in the other group of supermarkets (treatment group) the price including taxes was displayed in the shelves. The results of the experiment showed that when the post-tax price was displayed on the shelf, the demand was lower. This indicated that when a tax was not salient, agents would not incorporate it in their decision-making process. The authors also noted that these results were not a consequence of agents' unawareness about the existence of the sale taxes.

In their second study, the authors examined the responses of consumers to alcohol excise taxes as opposed to sales taxes. The alcohol excise taxes were incorporated in the price tag while the sale tax was only incorporated at the register. Based on this, the authors found that the demand was more responsive to the tax included in the price tag.

Several other papers found results consistent with the results found by Chetty at. All (2007). Ott and Andrus (2000) found that consumers do not fully incorporate the vehicle personal property taxes when purchasing a vehicle because it is not paid at the moment of the purchase. Gallagher and Muehlegger (2008) examined the effects of sales-tax waivers opposed to income-tax credits when purchasing a hybrid vehicle and found that there was higher responsiveness to the sales-tax waiver since it was given at the moment of the purchasing. Finkelstein (2007) examined how drivers' behavior change in response to electronic tolls (i.e. less salient) opposed to manual tolls (i.e. highly salient). The authors concluded that the toll rates increased when electronic tolls were adopted. In another related study, Sexton (2015) found that the introduction of an automatic electricity bill payment decreases the salience of the charges which lead to an increase in the consumption of electricity.

In terms of corrective taxes (e.g. green taxes), the goal of the policy maker is to change certain consumers behaviors through a tax. However, if this tax is not salient, the agents will not be responsive to it, and the behaviors will not change. Therefore, the policy will be inefficient as it will not lead to the expected outcomes.

In what concerns subsidies, the discussion of salience is also highly relevant. Due to the limited budget of the government, subsidies should be allocated in the most efficient manner, assuring that they achieve the desired results. If the government implements a non-salient subsidy, the households will not perceive it, affecting their behavior and the political support to the government intervention.

Saez (2009) conducted a randomized experiment to examine how the presentation and information of a policy could affect the take-up of financial subsidies for voluntary retirement plan. Based on this experiment, Saez (2009) found that when a subsidy was presented as a match (i.e. more visible) instead of a cash rebate (cash back) participation increased by 4pp. In addition, when individuals were provided with a notification (i.e. phone call and a letter) prior of tax season, the effect of the match more than doubled. Therefore, this experiment provided evidence that taxpayers were more responsive to incentives when they were presented transparently. In other words, the way that information was presented had an impact on individuals' choices and on the efficacy of a policy, even for the same budgetary cost. Bertrand et al. (2005), for example, showed that changing the words of a loan offer have significant impacts on individuals' preferences

These studies show evidence that tax or benefits salience impacts agents' reactions to the tax / benefit.

5. Metodology

To collect the necessary data to evaluate the impact of benefit salience on agents' preferences, we run an online survey using the Qualtrics platform[4]. The survey contains 4 sections and a total of 28 questions. The 1st, 2nd, and 4th sections are equal for the treatment and the control group, while the 3rd section differs across groups, as it contains the treatment message. Besides the treatment message, the control and treatment groups are asked the same questions.

The 1st section investigates the number and characteristics of vehicles each respondent has in his/her household. This section also includes a question about the number of diesel and gasoline liters consumed by week in the household for each vehicle. The answer to

[4] The survey is available in the Appendix A.

this question is used later in the treatment message, as it allows us to compute the value of the fuel tax reduction for the respondent's household.

The 2nd section starts by explaining the *Autovoucher* program and aims to analyze how the respondents evaluated the program in general terms and for their specific case. For that, the respondents are asked to give a number from 1 to 6, in which 1 corresponds to a bad policy and 6 corresponds to a good policy.

The 3rd section is the only one that differs across groups. For the control group, the 3rd section starts by stating that in April 2022, the *Autovoucher* program was substituted by the reduction in fuel taxes. This message is followed by a question asking respondents to evaluate from 1 to 6, as in section 2, the reduction in fuel taxes for their specific case and in general terms. For the treatment group, after the information about the change in policy (common for the control group), we add a message informing the respondent about the amount of money he/she was saving by using the *Autovoucher* versus through the reduction in fuel taxes. The message of the treatment can be seen below:

From April 2022, the Autovoucher was substituted by a temporary reduction in taxes.

Based on the answers that you give us:

With the reduction in taxes, your household is saving, on average, X€[5] *monthly.*

With the Autovoucher, your household is saving Y€[6] *monthly.*

The goal of the treatment is to investigate if the evaluation of the policies changes when respondents receive information comparing the relative benefits of the two policies. If salience has an impact on agent preferences, we expect that the control group does not

[5] X = gasoline liters spent per week*4*0.26 + diesel liters spent per week*4*0.28 (At the time of this work project, the reduction in taxes in gas corresponded to a discount of 0.28€ per liter for diesel and 0.26€ for gasoline).
[6] Y = Number of elements in the respondent's household that benefit from *Autovoucher**20€

have fully rational preferences. In other words, if agents do not behave rationally, the most salient policy has a higher probability of being the preferred policy, even for agents that benefit less from it. Moreover, if agents lack information about the policies, we also expect the treatment to move agents closer to rational expectations. After being exposed to the treatment – having the benefit of both options equally salient - we expect agents to be more likely to prefer the policy that allows them to save more. In case agents are ex ante fully informed of the benefits of the two policies, the treatment will have no effect.

Finally, the 4th section inquiries about respondents' demographic and socio-economic characteristics. In this section, we include questions about income, age, gender, region of residence, political orientation, level of education, and current occupation. It is important to control for these variables to confirm randomization among treatment and control. Moreover, it allows us to explore heterogenous effects of the treatment among different groups of respondents.

After concluding the draft of the questionnaire, we tested it using 11 respondents. These respondents gave us feedback on the questions and overall survey, therefore improving the final version of the experiment.

The questionnaire was officially published on 15/10/2022 and was open for 4 weeks. It followed a snowball sampling technique - the survey was shared using social media networks such as Instagram, LinkedIn, WhatsApp groups, Facebook, and Twitter, and the individuals were asked to share it with their connections.

The respondents were not informed about the existence of treatment nor the goal of the study.

Empirical strategy

The treatment is assigned randomly using the features of Qualtrics, assuring that the treatment and the control group are comparable in terms of observables and unobservables.

The only difference between the treatment and the control group is whether they have access to the information about the amount of money the respondents would be saving for each policy. To test for the existence of imbalances between the control and the treatment group, we perform individual t-tests and Hotelling´s generalized means tests.

Given that the control group and the treatment group are comparable, we will be able to measure the treatment effect by comparing the outcomes of the relevant questions while controlling for the number of fuel liters spent.

To evaluate the treatment effect, we regress a dummy variable equal to 1 if agents have rational preferences on a treatment dummy, controlling for a vector of individuals-level characteristics (X_i)[7]. We assume that respondents have rational preferences when they consider that the best policy for them is the policy that benefits them the most.

Our first regression is represented in equation 1 and it is estimated using Ordinary Least Squares (OLS) with robust standard errors.

In order to account for the heterogeneity between individuals who benefit more from the reduction in taxes compared to those who benefit more from the *Autovoucher*, we run this regression in two distinct groups – the group of individuals who benefit more from the *Autovoucher* and the group of individuals who benefit more from the tax reduction.

[7] X_i is composed by the following variables: having a higher education, having an income equal or above 162% of the national median income (high_income), having an income equal or below 60% of the national median income (low_income), having 3 or more vehicles in the household, having a household with more than 3 elements, being female, age, political orientation (left/right), living in Lisbon or Oporto, being unemployed, being retired, average monthly income, being a student, having knowledge about the Autovoucher program.

$$Rational\ preferences\ in\ personal\ terms = c + \beta_1 Treatment_i + \beta_2 X_i + \mu_i \quad (1)$$

We expect β_1 to be positive, i.e. providing information about the exact amount of the benefit moves agents closer to what would be the outcome of rational expectations, as defined above.

Additionally, we add interactions (Z_i) to the treatment variable to explore possible heterogenous effects. Firstly, we interact the treatment with a dummy for higher education (1 if the respondent has higher education). One may expect individuals with higher education to have, on average, more access to information and are thus less likely to be impacted by the information provided in treatment message. Secondly, we do an interaction with a dummy for low income (1 if the average monthly income per person in the respondent's household is lower than 554€) as the impact of the treatment may be differentiated for respondents with different levels of income (for the same benefit, lower income individuals benefit relatively more; moreover, they may be less informed ex ante). Thirdly, we interact the treatment with the respondents' political orientation, using the variable political_preferences which equals 1 if the respondent positions himself/herself at the left of the political scale, i.e. 1 to 4 in a scale from 1 to 11, equals 2 if the respondent positions him/herself at the right , i.e. 8 to 11 in a scale from 1 to 11 and equals 3 if the respondent positions him/herself at the center, i.e. 5 to 7 in a scale from 1 to 11. This allows us to check if ideological policy preferences mediate the effect of information in a differentiated way for those at the left and at the right of the political spectrum. Fourthly, we interact the number of vehicles and the number of elements in a household (separately) with the treatment because it has a direct impact on the savings of each policy (i.e. the savings of the reduction in taxes increase with the number of liters consumed and the savings through the *Autovoucher* increase with the size of the household). When a larger amount is at stake, respondents' may be more likely to be affected by new information.

To analyze these interactions, we use equation 2, where Zi corresponds to each of the variables just described.

$$Rational\ preferences\ in\ personal\ terms = c + \beta_1 Treatment_i \# Z_i + \beta_2 X_i + \mu_i \quad (2)$$

6. Descriptive statistics

The survey was conducted through Qualtrics, an online platform. It was open during 4 weeks from 15/10/2022 to 13/11/2022 and had 1405 responses. The total sample size includes 934 observations, after dropping incomplete observations. The treatment group includes 467 observations while the control group includes 467.

Based on the results from the Hoteling test[8] and from the analysis of Table 1, we conclude that treatment and the control group are comparable and there are no significant differences across them. This ensures the internal validity of our study.

Regarding the demographic's characteristics of our sample, as shown in Table 1, 47 % are female and the average age of respondents is 36 years. Additionally, 69% of the respondents live in Lisbon or Oporto and the majority are working (66%) or studying (25%). In terms of education, 78% of the respondents have higher education – 29% have a master's degree, 5% have a PhD and 44% have a bachelor's degree. In terms of income, the average monthly net income per person in our sample is 1121€ with 29% of the respondents earning more than 1500€[9] per and 22% earning less than 554€[10]. In terms of political preferences, and considering the left-right divide, 18% of the respondents are politically located on the right, 33% are on the left and 49% are on the center.[11] In

[8] The results of the hoteling test are available in the Appendix B.2
[9] 1500€ corresponds to 162% of the national median income in Portugal for 2020.
[10] 554€ corresponds to 60% of the national median income in Portugal for 2020.
[11] On a scale from 0 to 10, right corresponds to values above or equal to 7 while left corresponds to values bellow or equal to 3.

addition, 90% of the respondents knew the *Autovoucher* program before answering the survey.

Table 1 - Descriptive statistics

VARIABLES	Description	Control		Treatment		Whole sample	
		N	mean	N	mean	N	mean
vehicles	Number of vehicles in the respondent's household.	467	2.051	467	2.084	934	2.067
Autovoucher_knowledge	1 if the respondent knew the Autovoucher program before answering the survey.	467	0.906	467	0.904	934	0.905
age	Age of the respondent	467	35.88	467	36.76	934	36.32
household	Number of elements in the respondent's household.	467	3.131	467	3.096	934	3.113
politics	It corresponds to a political scale from 1 to 11, in which 1 corresponds to left and 11 corresponds to right.	467	5.375	467	5.418	934	5.396
female	1 if the respondent is female.	467	0.475	467	0.460	934	0.468
Lisbon_Oporto	1 if the respondent lives in Lisbon or Oporto.	467	0.694	467	0.677	934	0.686
income_pp	Average monthly income per person in the respondent's household.	467	1,122	467	1,118	934	1,120
low_income	1 if the average monthly income per person in the respondent's household is lower than 554€.	467	0.227	467	0.212	934	0.219
high_income	1 if the average monthly income per person in the respondent's household is higher than 1500€.	467	0.298	467	0.276	934	0.287
right	1 if the respondent positions himself/herself at the right of the political scale (8 to 11).	467	0.171	467	0.171	934	0.171
left	1 if the respondent positions himself/herself at the right of the political scale (1 to 4).	467	0.340	467	0.330	934	0.335
student	1 if the respondent is a student.	467	0.261	467	0.238	934	0.249
university	1 if the respondent has higher education.	467	0.792	467	0.756	934	0.774
Phd	1 if the respondent has a Phd	467	0.0428	467	0.0600	934	0.0513
unemployed	1 if the respondent is unemployed.	467	0.0128	467	0.0321	934	0.0224
retired	1 if the respondent is retired	467	0.0236	467	0.0300	934	0.0268
master	1 if the respondent has a master's degree.	467	0.287	467	0.289	934	0.288
vehicles_3	1 if the respondent's household has 3 or more vehicles	467	0.298	467	0.281	934	0.289
household_4	1 if the respondent's household has 4 or more elements.	467	0.433	467	0.377	934	0.405

Table 2- Summary statistics socio-demographic variables for the population vs sample. Source: INE and Censos 2021

VARIABLES	Population	Sample
Age	45	36
Female	52%	47%
Higher education	17%	77%
Student	3%	25%
Unemployed	3%	2%
Retired	42%	3%
Average monthly income per person	1093€	1120€

Based on the analysis of the descriptive statistics displayed in Table 2, we verify that our sample is highly biased towards higher education, and it is on average younger than the whole population. Moreover, the percentage of students in our sample is consistently higher, while the percentage of retirees is significantly lower than in the population. As for income, according to Statistics Portugal, in 2020, the average monthly income per person in the population was 1093€ while in our sample it is 1119.87€ which, in this case, is not a significantly difference.

Thus, while the internal validity of the experiment is assured, through successful randomization, we lack external validity. This means that we can infer the impact of the treatment (the object of our study) but we cannot extrapolate policy preferences for the entire population (outside the scope of our work).

Table 3 - Summary statistics socio-demographic variables for individuals who benefit more from the reduction in taxes v. Autovoucher

	Individuals that benefit more from the reduction in taxes		Individuals that benefit more from Autovoucher	
VARIABLES	N	mean	N	mean
vehicles	533	2.268	339	1.973
Autovoucher_knowledge	533	0.869	339	0.994
age	533	36.20	339	37
household	533	3.272	339	2.961
politics	533	5.602	339	5.153
female	533	0.454	339	0.472
Lisbon_Oporto	533	0.666	339	0.696
income_pp	533	1,128	339	1,098
low_income	533	0.208	339	0.212
high_income	533	0.271	339	0.298
right	533	0.197	339	0.133
left	533	0.295	339	0.386
student	533	0.268	339	0.218
university	533	0.767	339	0.793
phd	533	0.0450	339	0.0531
unemployed	533	0.0131	339	0.0384
retired	533	0.0131	339	0.0354
master	533	0.291	339	0.283
vehicles_3	533	0.341	339	0.242
household_4	533	0.473	339	0.330

In our data, 57% of the respondents benefit more from the tax reduction than from the *Autovoucher*. Based on Table 3, we can compare the characteristics of the respondents that benefit more from the *Autovoucher* with the respondents that benefit more from the

reduction in taxes. The individuals that benefit more from the reduction in taxes have, on average, a slightly larger household, detain more vehicles, are less unemployed, have less knowledge about the *Autovoucher* program and are more on the right in terms of political compass.

7. Results

What are the relative preferences for the two policies for those in the control group (i.e. not subject to the treatment)?

Table 4 - Preferences for Autovoucher

	Control			Treatment			Whole sample		
VARIABLES	N	mean	sd	N	mean	sd	N	mean	sd
bestpolicy_personal[12]	467	0.323	0.468	467	0.323	0.468	934	0.323	0.468

According to Table 4, the majority prefers the temporary reduction in taxes compared to the *Autovoucher*: 68% of the respondents prefer the reduction in taxes for their personal case. Thus, while being a less salient benefit, it displays higher support. Indeed, as shown in the previous section, the majority of respondents benefit more from the tax reduction than from the *Autovoucher*. The share of support is even higher than what one would expect from rational preferences (57% v. 68%).

It is thus interesting to understand if this support varies according to the actual individual benefit. Focusing again on the control group, and for the individuals that benefit more from the *Autovoucher*, only 44% prefer the *Autovoucher* for their personal case. For those who benefit more from the reduction in taxes, support for the reduction in taxes reaches 75%. We thus find that:

[12] It equals to 1 if the respondent considers that the *Autovoucher* is the best policy in personal terms.

1. The tax reduction, even being a less salient benefit, is always the preferred policy, even among those that benefit more from the *Autovoucher*;

2. Support for the tax reduction is higher for those respondents that benefit more from that policy in comparison with those that benefit more from the *Autovoucher*.

Does being exposed to information on the benefit impacts this assessment? Will information bring agents closer to what rational expectations would predict?

According to Table 5, the answer is positive: individuals that are exposed to the treatment have stronger preferences for the policy that benefits them the most.

Table 5 - Rational Preferences

	Individuals that benefit more from the reduction in taxes				Individuals that benefit more from Autovoucher			
	Control		Treatment		Control		Treatment	
VARIABLES	N	mean	N	mean	N	mean	N	mean
Rational in personal terms	249	0.75	284	0.90	182	0.44	157	0.74

For the individuals that are exposed to the treatment and benefit more from *Autovoucher*, 74% consider that the *Autovoucher* is the best policy for their specific case, opposed to 44% in the control group. Regarding the individuals that benefit more from the reduction in taxes, 90% consider that the reduction in taxes is the best policy, opposed to 75% in the control group.

The impact of the treatment is very substantial, increasing rational preferences by 30pp in the case of individuals that benefit more from the *Autovouche*r and almost 15pp in the case of individuals that benefit more from the reduction in taxes. The higher effect in the first case may relate to the lower initial support (44% v. 75%). The small initial support indicates that, if not exposed to treatment, the majority of respondents are most likely not aware about the specifications and the amount they could save through *Autovoucher*, and its relative importance in comparison with the new benefit (fuel tax reduction). These

results are corroborated by the regression analysis presented in Table 6, that shows that the treatment effect is significant at 1%.

Table 6 – Treatment Effects on Rational Preferences

	Whole sample	Individuals thath benefit more from Autovoucher	Individuals that benefit more from the reduction in taxes
VARIABLES	Rational in personal terms	Rational in personal terms	Rational in personal terms
treat	0.223***	0.300***	0.152***
	(0.0296)	(0.0512)	(0.0316)
vehicles_3	0.0162	-0.00848	-0.0560
	(0.0353)	(0.0687)	(0.0361)
household_4	-0.00518	-0.0673	-0.0423
	(0.0364)	(0.0654)	(0.0389)
Lisbon_Oporto	0.0123	0.130**	-0.0182
	(0.0324)	(0.0575)	(0.0338)
university	0.00712	0.0600	-0.0222
	(0.0369)	(0.0631)	(0.0402)
student	0.0716	0.127*	0.0215
	(0.0442)	(0.0753)	(0.0501)
unemployed	0.159**	0.210*	0.155***
	(0.0794)	(0.111)	(0.0321)
retired	0.0933	0.206	0.0618
	(0.0889)	(0.143)	(0.0496)
high_income	-0.0744	-0.0462	-0.0581
	(0.0521)	(0.0866)	(0.0555)
low_income	-0.0682	0.0759	-0.135***
	(0.0429)	(0.0704)	(0.0510)
age	0.00217	-0.00107	0.00268*
	(0.00140)	(0.00244)	(0.00143)
female	-0.0194	0.0362	-0.0247
	(0.0306)	(0.0526)	(0.0329)
right	0.0528	-0.145*	0.114***
	(0.0390)	(0.0767)	(0.0326)
Autovoucher_knowledge	-0.0233	0.0513	-0.0776*
	(0.0515)	(0.343)	(0.0426)
income_pp	5.39e-05*	6.31e-05	3.07e-05
	(2.98e-05)	(4.60e-05)	(3.29e-05)
Constant	0.450***	0.201	0.778***
	(0.0989)	(0.367)	(0.102)
Observations	934	339	533
R-squared	0.083	0.152	0.118

*** p<0.01, ** p<0.05, * p<0.1

Is the effectiveness of the treatment affected by the socio-economic characteristics of the respondents?

In Table 7 and focusing first on individuals who benefit more from the *Autovoucher*, we show that the treatment effect is higher when the individuals do not have higher education. For respondents with higher education, the treatment effect corresponds to 24pp, while

for the respondents without higher education it is, on average 54pp. This may relate to a lower knowledge on the relative benefits of the two policies among those without higher education.

Table 7 – Interactions with the treatment variable

	Respondents that benefit more from Autovoucher	Respondents that benefit more from the reduction in taxes
	Rational Personal	Rational Personal
Treated x 1.vehicles_3	0.249**	0.213***
Treated x 0.vehicles_3	0.319*	0.119***
Difference	-0.736	0.093
Treated x 1.household_4	0.386***	0.200***
Treated x 0.household_4	0.257***	0.107**
Difference	0.129	0.093
Treated x 1.university	0.240***	0.139***
Treated x 0.university	0.539***	0.195***
Difference	-0.299***	-0.557
Treated x 1.high_income	0.192**	0.076
Treated x 0.high_income	0.344***	0.180***
Difference	-0.152	-0.104
Treated x 1.low_income	0.288***	0.320***
Treated x 0.low_income	0.304***	0.107***
Difference	-0.015	0.213**
Treated x right.political_preferences	0.259*	0.072
Treated x left.political_preferences	0.223**	0.215***
Difference	0.029	-0.143*
Obs.	339	533

Note: The estimates displayed in this table correspond to the difference between the treatment effect when the dummy variable that interacts with the treatment is 1 and when it is equal to 0.

*** p<0.01, ** p<0.05, * p<0.1

For the respondents that benefit more from the reduction in taxes, the treatment effect is higher when individuals have low income (i.e. have a monthly income per person below 554€) or are politically situated on the left (compared to individuals on the right). For the individuals with low income, the treatment increases the likelihood of the individuals having rational preferences by, on average, 32pp, compared to 11pp for individuals without low income. This can be related to lower ex ante information on the benefit or the fact that, for the same benefit, lower income individuals have relatively higher savings

comparing to their monthly income. In terms of political preferences, when individuals are politically situated on the left, the treatment effect is higher (22pp) comparing to individuals on the right (not statistically significant different from 0). Individuals on the right may have a higher prior knowledge on relative benefits than individuals on the left.

8. Conclusion

The aim of this study is to understand the role of salience and information on individuals' preferences. We base our analysis in a quasi-natural experiment based in two policies with different levels of salience implemented by the Portuguese Government in 2022 to respond to the increase in fuel prices – the *Autovoucher* (i.e. more salient) and the reduction in taxes (i.e. less salient). We conduct a randomized control trial (RCT) to assess how the individuals evaluate each policy and how information (the treatment) impact these preferences. Our sample contains more than 900 valid observations which allow us to have a successful randomization between the control and the treatment group and to estimate unbiased estimates.

We show that the majority of individuals have higher preferences for the reduction in taxes, even if this benefit is less salient and if it is not the policy that benefits them the most. Contrary to the results of prior literature on salience, in this experiment, we do not find evidence that respondents have higher preferences for the most salient policy. However, our results are in line with the results of Saez (2009), as we find that information significantly impacts individuals' preferences, making them closer to what economic rationality would predict. Therefore, we show that not only are individuals unable to correctly assess the benefits of the two policies, but they are also impacted by this new information when provided with it. Indeed, based on the results of our RCT, we conclude that giving information about a policy to individuals have a high impact on their preferences and evaluations.

We show that the majority of individuals in the control group have higher preferences for the reduction in taxes, irrespectively of the policy that benefits them more. However, when individuals are exposed to the treatment, there is a shift in preferences towards the policy that is more beneficial for them.

Thus, we conclude that giving information to individuals can shift individual's preferences towards more rational preferences.

Additionally, we show that the treatment effect can vary with some individual based characteristics, such as education, income, political orientation, factors that are likely to be related with prior knowledge on the relative benefits: the treatment is expected to be less effective in respondents that were more aware of the information it conveys.

This work has important policy implications as it shows the lack of prior knowledge on these policies and the effect that information campaigns or a clearer communication of individual benefits can have on overall support for the enacted policies.

Although randomization was successful, and thus internal validity holds – allowing us to derive causal implication on the effect of the treatment – external validity is not present, as our sample is not representative of the Portuguese population. There is an overrepresentation of higher educated and younger respondents. Consequently, the data cannot be used to infer preferences for the overall population. For instance, while in our data 57% of respondents benefit more from the fuel tax, we cannot argue that this holds for the overall population.

Moreover, given the way the survey was conducted, we cannot assess attrition bias effects. We received 471 incomplete answers, and it would be important to understand if there was self-selection into the experiment, with a non-random group of respondents opting out of the study.

Further research could thus improve on the survey methodology, with additional financial means, allowing not only for a representative sample but also a better control over self-selection and attrition bias.

Finally, further research is needed to better understand our results, in particular by collecting additional data on actual prior knowledge of the two policies and on the underlying reasons for the expressed preferences.

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APPENDIX

Appendix A – Survey

1. How many vehicles do you have in your household? (Please insert a number)
2. How many vehicles do your household have for each type? (Please insert a number)
    a. Number of diesel vehicles
    b. Number of gasoline vehicles
    c. Number of GPL vehicles
    d. Number of electric vehicles
3. On average, how many liters of diesel your vehicles consume per week? (Insert a number)
    a. Diesel vehicle 1
    b. Diesel vehicle 2
    c. Diesel vehicle 3
    d. (…)

4. On average, how many liters of gasoline do your vehicles consume per week? (Insert a number)
    a. Gasoline vehicle 1
    b. Gasoline vehicle 2
    c. Gasoline vehicle 3
    d. (…)
5. How often do your household use each vehicle?
    a. Every day
    b. 2-4 times a week
    c. Once a week
    d. Rarely
    e. Never
6. How do you classify your vehicles?
    a. City car/micro
    b. Familiar car
    c. Sportive car
    d. Moto
    e. Other

Autovoucher

To respond to the increase in fuel prices, the Portuguese Government implemented the *Autovoucher* program. Since March 2022, each consumer benefited from 20€ per month (independently on the amount of fuel liters consumed). To benefit from this program, the consumer had to be registered at the *IVAvoucher* platform and had to make a purchase at an adherent gas station. At the payment, if the consumer used his/her bank card, the discount was automatically credited in the bank account.

7. Did you know the Autovoucher program?

   a.Yes

   b.No

8. Did your household benefit from *Autovoucher*?

   a. Yes

   b. No

   c. I do not know

9. How many elements did benefit from the *Autovoucher* program? (Please insert a number).

10.

11. How do you evaluate the *Autovoucher* program for your personal case? Select a number from 1 to 6, in which 1 corresponds to an extremely bad policy and 6 to an extremely good policy.

    a. 1

    b. 2

    c. 3

    d. 4

    e. 5

    f. 6

12. How do you evaluate the *Autovoucher* program in general terms? Select a number from 1 to 6, in which 1 corresponds to an extremely bad policy and 6 to an extremely good policy.

    a. 1

    b. 2

    c. 3

    d. 4

    e. 5

    f. 6

Control - From April 2022, the *Autovoucher* program was substituted by the reduction in fuel taxes.

Treatment - From April 2022, the *Autovoucher* program was substituted by the reduction in fuel taxes.

Based on the information you give us,

With the reduction in taxes, your household is saving X € monthly.

With the *Autovoucher*, your household is saving Y€ monthly.

13. How do you evaluate the reduction in taxes for your personal case? Select a number from 1 to 6, in which 1 corresponds to an extremely bad policy and 6 to an extremely good policy.

    a. 1

b. 2

c. 3

d. 4

e. 5

f. 6

14. How do you evaluate the reduction in taxes in general terms? Select a number from 1 to 6, in which 1 corresponds to an extremely bad policy and 6 to an extremely good policy.

a. 1

b. 2

c. 3

d. 4

e. 5

f. 6

15. Select the policy that you consider the best in general terms.

a. *Autovoucher*

b. Reduction in taxes

16. Select the policy that you consider the best for your personal case.

a. Autovoucher

b. Reduction in taxes

17. Gender:

a. Female

b. Male

c. Other

18. How old are you? (Please insert a number).

19. What is your highest level of education concluded?

a. Third cycle (9^{th} grade)

b. Secondary Education (12^{th} grade)

c. Degree

d. Master

e. Phd

20. What is your current occupation?

a. Student

b. Employed

c. Unemployed

d. Retired

e. Other

21. How many elements do you have in your household? (Please insert a number).

22. What is the net monthly income of your household?

a. Less than 1000€
b. Between 1000€ and 1999€
c. Between 2000€ and 3999€
d. Between 4000€ and 6999€
e. More than 7000€

23. Select your district of residence

1. Aveiro; 2. Beja; 3. Braga; 4. Bragança; 5. Castelo Branco; 6. Coimbra; 7. Évora; 8. Faro; 9. Guarda; 10. Leiria; 11. Lisboa; 12. Portalegre; 13. Porto; 14. Santarém; 15. Setúbal; 16. Viana do Castelo; 17. Vila Real; 18. Viseu; 19. Região Autónoma da Madeira. 20. Região Autónoma dos Açores.

23. What is your municipality of residence?

24. How would you politically position yourself on a scale from 0 to 10, where 0 represents the most left-wing position and 10 the most right-wing

position?

0;1; 2; 3; 4; 5; 6; 7; 8; 9; 10

Appendix B – Tables

Appendix B.1 Rational Preferences in General Terms

VARIABLES	Whole sample Rational in general terms	Individuals that benefit more from Autovoucher Rational in general terms	Individuals that benefit more from the reduction in taxes Rational in general terms
treat	0.145***	0.183***	0.0584*
	(0.0316)	(0.0517)	(0.0312)
vehicles_3	0.00189	-0.0408	-0.0742*
	(0.0382)	(0.0636)	(0.0382)
household_4	0.0190	-0.0922	-0.0453
	(0.0394)	(0.0617)	(0.0390)
Lisbon_Oporto	-0.0172	0.0674	-0.0139
	(0.0343)	(0.0560)	(0.0340)
university	0.0425	0.117*	0.0221
	(0.0404)	(0.0622)	(0.0410)
student	0.0340	0.0651	0.00797
	(0.0479)	(0.0771)	(0.0494)
unemployed	-0.185*	-0.217*	0.0119
	(0.108)	(0.122)	(0.127)
retired	0.0755	0.145	0.0827*
	(0.101)	(0.166)	(0.0486)
high_income	-0.0570	-0.00303	-0.0583
	(0.0577)	(0.0874)	(0.0534)
low_income	-0.0638	0.0236	-0.0888*
	(0.0467)	(0.0711)	(0.0517)
age	0.00321**	0.00401	0.00185
	(0.00150)	(0.00259)	(0.00138)
female	0.0116	0.114**	-0.0108
	(0.0325)	(0.0527)	(0.0325)
right	0.0921**	-0.119*	0.132***
	(0.0417)	(0.0700)	(0.0309)
Autovoucher_knowledge	-0.124**	0.296***	-0.0957**
	(0.0519)	(0.0889)	(0.0383)
income_pp	1.73e-05	-9.48e-05**	4.00e-05
	(3.82e-05)	(4.71e-05)	(3.06e-05)
Constant	0.482***	-0.231	0.829***
	(0.103)	(0.163)	(0.0912)
Observations	934	339	533
R-squared	0.051	0.105	0.079

*** p<0.01, ** p<0.05, * p<0.1

Appendix B.2 Hotelling Test

	Control		Treatment	
VARIABLES	N	mean	N	mean
vehicles	467	2.051	467	2.084
Autovoucher_knowledge	467	0.906	467	0.904
age	467	35.88	467	36.76
household	467	3.131	467	3.096
politics	467	5.375	467	5.418
female	467	0.475	467	0.460
Lisbon_Oporto	467	0.694	467	0.677
income_pp	467	1,122	467	1,118
low_income	467	0.227	467	0.212
high_income	467	0.298	467	0.276
right	467	0.171	467	0.171
left	467	0.340	467	0.330
student	467	0.261	467	0.238
university	467	0.792	467	0.756
phd	467	0.0428	467	0.0600
unemployed	467	0.0128	467	0.0321
retired	467	0.0236	467	0.0300
master	467	0.287	467	0.289
vehicles_3	467	0.298	467	0.281
household_4	467	0.433	467	0.377

2-group Hotelling's T-squared = 22.235459
F test statistic: ((934-23-1)/(934-2)(23)) x 22.235459 = .94393859
H0: Vectors of means are equal for the two groups
F(23,910) = 0.9439
Prob > F(22,521) = **0.5383**

Appendix B.3 Table of full results with the interaction of treatment with *vehicles_3*

VARIABLES	Individuals that benefit more from Autovoucher Rational preferences	Individuals that benefit more from the reduction in taxes Rational Preferences
0b.treat#0b.vehicles_3	0	0
	(0)	(0)
0b.treat#1.vehicles_3	0.0276	-0.103*
	(0.0926)	(0.0577)
1.treat#0b.vehicles_3	0.319***	0.119***
	(0.0583)	(0.0381)
1.treat#1.vehicles_3	0.272***	0.110**
	(0.0921)	(0.0466)
household_4	-0.0696	-0.0478
	(0.0654)	(0.0391)
Lisbon_Oporto	0.129**	-0.0173
	(0.0576)	(0.0337)
university	0.0599	-0.0194
	(0.0632)	(0.0402)
student	0.125*	0.0283
	(0.0757)	(0.0508)
unemployed	0.204*	0.155***
	(0.113)	(0.0325)
retired	0.198	0.0536
	(0.143)	(0.0481)
high_income	-0.0428	-0.0570
	(0.0867)	(0.0553)
low_income	0.0768	-0.133***
	(0.0703)	(0.0511)
age	-0.00104	0.00279*
	(0.00245)	(0.00142)
female	0.0347	-0.0255
	(0.0526)	(0.0329)
right	-0.146*	0.120***
	(0.0768)	(0.0322)
Autovoucher_knowledge	0.0687	-0.0821*
	(0.350)	(0.0431)
income_pp	6.11e-05	2.91e-05
	(4.62e-05)	(3.25e-05)
Constant	0.178	0.794***
	(0.374)	(0.102)
Observations	339	533
R-squared	0.153	0.121

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Appendix B.4 Table of full results with the interaction of treatment with *household_4*

VARIABLES	Individuals that benefit more from Autovoucher Rational preferences	Individuals that benefit more from the reduction in taxes Rational preferences
0b.treat#0b.household_4	0	0
	(0)	(0)
0b.treat#1.household_4	-0.125	-0.0912
	(0.0842)	(0.0583)
1.treat#0b.household_4	0.257***	0.107**
	(0.0631)	(0.0422)
1.treat#1.household_4	0.261***	0.109**
	(0.0866)	(0.0517)
Lisbon_Oporto	0.133**	-0.0188
	(0.0575)	(0.0337)
high_income	-0.0497	-0.0610
	(0.0866)	(0.0556)
vehicles_3	-0.00484	-0.0585
	(0.0687)	(0.0362)
university	0.0544	-0.0233
	(0.0635)	(0.0399)
student	0.126*	0.0218
	(0.0754)	(0.0501)
unemployed	0.213*	0.154***
	(0.110)	(0.0344)
retired	0.220	0.0518
	(0.143)	(0.0481)
low_income	0.0766	-0.133***
	(0.0707)	(0.0508)
age	-0.00121	0.00282**
	(0.00245)	(0.00143)
female	0.0388	-0.0229
	(0.0525)	(0.0329)
right	-0.140*	0.114***
	(0.0782)	(0.0325)
Autovoucher_knowledge	0.0598	-0.0806*
	(0.312)	(0.0426)
income_pp	6.46e-05	3.09e-05
	(4.60e-05)	(3.25e-05)
Constant	0.218	0.802***
	(0.339)	(0.102)
Observations	339	533
R-squared	0.155	0.122

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Appendix B.5 Table of full results with the interaction of treatment with *university*

VARIABLES	Individuals that benefit more from the Autovoucher Rational preferences	Individuals that benefit more from the reduction in taxes Rational preferences
0b.treat#0b.university	0	0
	(0)	(0)
0b.treat#1.university	0.225**	0.00668
	(0.0951)	(0.0657)
1.treat#0b.university	0.539***	0.195***
	(0.103)	(0.0664)
1.treat#1.university	0.465***	0.145**
	(0.0945)	(0.0619)
high_income	-0.0537	-0.0560
	(0.0864)	(0.0558)
vehicles_3	-0.0188	-0.0563
	(0.0680)	(0.0362)
household_4	-0.0602	-0.0405
	(0.0651)	(0.0389)
Lisbon_Oporto	0.109*	-0.0183
	(0.0574)	(0.0338)
student	0.135*	0.0184
	(0.0732)	(0.0500)
unemployed	0.223**	0.153***
	(0.108)	(0.0325)
retired	0.193	0.0648
	(0.140)	(0.0501)
low_income	0.0706	-0.137***
	(0.0691)	(0.0512)
age	-0.00136	0.00265*
	(0.00243)	(0.00143)
female	0.0386	-0.0243
	(0.0521)	(0.0329)
right	-0.139*	0.111***
	(0.0764)	(0.0331)
Autovoucher_knowledge	0.126	-0.0786*
	(0.312)	(0.0427)
income_pp	6.34e-05	2.94e-05
	(4.62e-05)	(3.32e-05)
Constant	0.0130	0.759***
	(0.343)	(0.108)
Observations	339	533
R-squared	0.165	0.119

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Appendix B.6 Tables of full results with the interaction of treatment with *high_income*

	Individuals that benefit more from Autovoucher	Individuals that benefit more from the reduction in taxes
VARIABLES	Rational preferences	Rational preferences
0b.treat#0b.high_income	0	0
	(0)	(0)
0b.treat#1.high_income	0.0200	-0.00154
	(0.0999)	(0.0667)
1.treat#0b.high_income	0.344***	0.180***
	(0.0606)	(0.0388)
1.treat#1.high_income	0.212*	0.0748
	(0.109)	(0.0634)
vehicles_3	-0.00703	-0.0576
	(0.0682)	(0.0362)
household_4	-0.0632	-0.0386
	(0.0653)	(0.0392)
Lisbon_Oporto	0.128**	-0.0189
	(0.0573)	(0.0337)
university	0.0558	-0.0197
	(0.0632)	(0.0401)
student	0.127*	0.0251
	(0.0752)	(0.0502)
unemployed	0.210*	0.151***
	(0.113)	(0.0332)
retired	0.219	0.0586
	(0.143)	(0.0463)
low_income	0.0758	-0.133***
	(0.0708)	(0.0507)
age	-0.00101	0.00281*
	(0.00244)	(0.00144)
female	0.0414	-0.0267
	(0.0523)	(0.0328)
right	-0.137*	0.113***
	(0.0771)	(0.0326)
Autovoucher_knowledge	0.0539	-0.0811*
	(0.324)	(0.0429)
income_pp	6.54e-05	3.05e-05
	(4.68e-05)	(3.18e-05)
Constant	0.172	0.758***
	(0.351)	(0.105)
Observations	339	533
R-squared	0.156	0.122

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Appendix B.7 Tables of full results with the interaction of treatment with *low_income*

	Individuals that benefit more from Autovoucher	Individuals that benefit more from the reduction in taxes
VARIABLES	Rational preferences	Rational preferences
0b.treat#0b.low_income	0	0
	(0)	(0)
0b.treat#1.low_income	0.0834	-0.246***
	(0.0979)	(0.0787)
1.treat#0b.low_income	0.304***	0.107***
	(0.0578)	(0.0333)
1.treat#1.low_income	0.372***	0.0738
	(0.0878)	(0.0600)
vehicles_3	-0.00801	-0.0543
	(0.0687)	(0.0358)
household_4	-0.0675	-0.0365
	(0.0655)	(0.0388)
Lisbon_Oporto	0.131**	-0.0200
	(0.0581)	(0.0336)
university	0.0599	-0.0170
	(0.0633)	(0.0401)
student	0.126*	0.0182
	(0.0754)	(0.0500)
unemployed	0.209*	0.134***
	(0.112)	(0.0295)
retired	0.205	0.0549
	(0.143)	(0.0467)
high_income	-0.0459	-0.0548
	(0.0868)	(0.0547)
age	-0.00108	0.00266*
	(0.00245)	(0.00141)
female	0.0363	-0.0277
	(0.0527)	(0.0329)
right	-0.146*	0.102***
	(0.0768)	(0.0328)
Autovoucher_knowledge	0.0475	-0.0848**
	(0.346)	(0.0423)
income_pp	6.30e-05	2.87e-05
	(4.61e-05)	(3.16e-05)
Constant	0.203	0.809***
	(0.369)	(0.102)
Observations	339	533
R-squared	0.152	0.131

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Appendix B.8 Tables of full results with the interaction of treatment with *Political_preferences*

	Individuals that benefit more from Autovoucher	Individuals that benefit more from the reduction in taxes
VARIABLES	Rational preferences	Rational preferences
0b.treat#left.political_preferences	0	0
	(0)	(0)
0b.treat#right. political_preferences	-0.263**	0.246***
	(0.120)	(0.0694)
0b.treat#center. political_preferences	-0.261***	0.129*
	(0.0794)	(0.0666)
1.treat#left. political_preferences	0.223***	0.215***
	(0.0796)	(0.0668)
1.treat#right. political_preferences	-0.0141	0.318***
	(0.116)	(0.0626)
1.treat#center. political_preferences	0.108	0.270***
	(0.0826)	(0.0589)
vehicles_3	-0.0105	-0.0649*
	(0.0687)	(0.0363)
household_4	-0.0661	-0.0384
	(0.0632)	(0.0387)
Lisbon_Oporto	0.125**	-0.0138
	(0.0568)	(0.0341)
university	0.0591	-0.0209
	(0.0632)	(0.0406)
student	0.131*	0.0109
	(0.0739)	(0.0503)
unemployed	0.167	0.165***
	(0.103)	(0.0374)
retired	0.186	0.0740
	(0.140)	(0.0520)
high_income	-0.0583	-0.0527
	(0.0840)	(0.0537)
low_income	0.0791	-0.127**
	(0.0698)	(0.0507)
age	-0.00146	0.00223
	(0.00246)	(0.00143)
female	0.0132	-0.0147
	(0.0530)	(0.0331)
Autovoucher_knowledge	-0.0231	-0.0802*
	(0.329)	(0.0424)
income_pp	7.20e-05	3.10e-05
	(4.81e-05)	(3.12e-05)
Constant	0.445	0.697***
	(0.361)	(0.111)
Observations	339	533
R-squared	0.189	0.133

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1