

# Climate survey - France

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OECD/CAE

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## Motivation

Climate policies have been difficult to pass.

The design of climate policies needs to account for the political economy and public acceptability.

Resistance to climate policies arises largely from:

Legitimate concerns about distributional and lifestyle impacts

Misconceptions about the impacts of climate change and the effects of climate policies on the economy and the environment

Addressing concerns and misconceptions may be difficult, as they are influenced by personal attributes, country specificities and political views.

# Project objectives

**Overall goal:** contribute to construct country-specific advice on policies to deal with the transition to a low-carbon economy by understanding people's perceptions about climate change and preferences over available climate policies.

## Research questions:

How social attitudes, values, and perceptions drive support or opposition for climate policies across socio-economic groups?

How social preferences on climate change mitigation policies differ between countries?

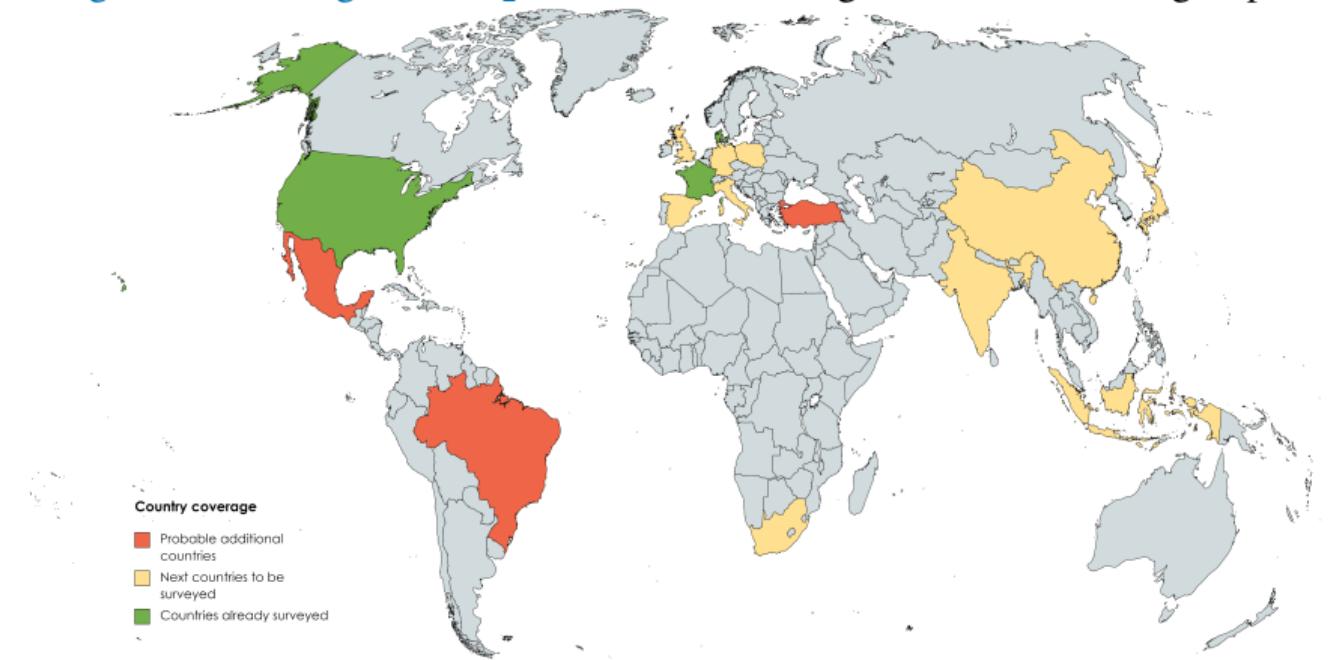
How perceptions may change after receiving new information on the effects of policies/climate change (in a video format) and how it translates into beliefs and support?

# An international survey

Large-scale cross-country survey to analyse attitudes on climate change and climate policies.

Wide country coverage:

16 countries in all world regions, low-income as well as high-income,  
covering two-thirds of global CO<sub>2</sub> emissions, including 16 out of the 21 largest polluters.



## **Method: Large-scale Social Economics Surveys and Experiments**

### **Surveys are a key tool:**

Some things can not be seen in other data, no matter how good it is: Perceptions, attitudes, knowledge, views.

Revealed preference with observational data has limits (data and assumptions required).

Unlike old-style surveys (that measure variables now better captured in admin data) or opinion polls (less rigorous, often partial, without randomized treatments).

New generation surveys: Customizable, controllable, interactive.

Here:  $\approx$  2,000 respondents per survey, broadly representative of the country, done through commercial survey companies.

## Improvements upon existing research

**Wide scope:** past surveys are typically limited to a single (developed) country, focus on carbon pricing, and existing international surveys include only very general questions.

For reviews of existing studies: Carattini et al. 2018, Drews and van den Bergh, 2016

**Cross-country comparability:** having an international questionnaire informs whether differences in people's attitudes are driven by survey characteristics (e.g. format and phrasing) or by true cross-country differences.

**Incentive compatibility:** we offer an incentive relying on an actual payment and propose tangible actions.

**Causal evidence:** we document effects of informational treatments in a video format, whereas cross-country evidence remains largely descriptive and national surveys use less effective treatments.

## Informational treatments

Treatments consist in one or two 2–5 min video either informing the respondent about **three main climate policies**, or detailing the **impacts of climate change in their country**.

**Goal:** understand **how perceptions may change after receiving new information** on the effects of policies/climate change (in a video format) and how it translates into policy support.

Will contribute to ongoing academic debate on importance of information for the acceptance of climate policies (e.g. Kahan, 2015; Sunstein et al., 2017):

What do people really learn when information is provided?

Do they accept the info or can it backfire?

How does the effect interact with political values, previous knowledge, socio-demographics, country?

# Questionnaire (for France)

# Questionnaire

## **Background of respondent:**

Socio-demographics, political views, energy use, consumption habits.

# Questionnaire

## Background of respondent:

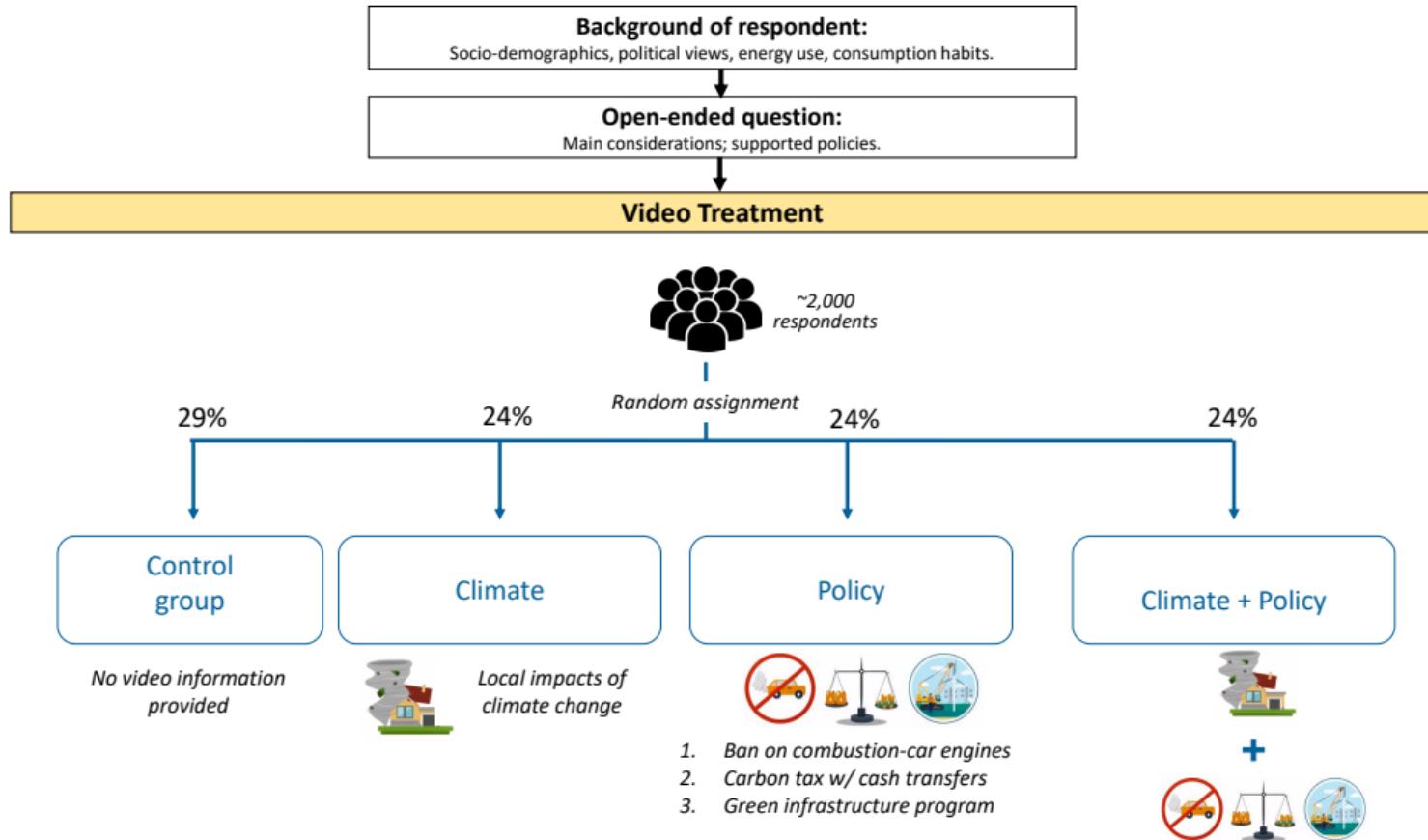
Socio-demographics, political views, energy use, consumption habits.



## Open-ended question:

Main considerations; supported policies.

# Questionnaire



# Questionnaire

## Local climate impact



With the mix of more hurricanes, rising sea levels, more heatwaves, and lower agricultural output

## Ban on combustion-engine cars



so that only electric or hydrogen vehicles can be sold after 2030.

## Green infrastructure program



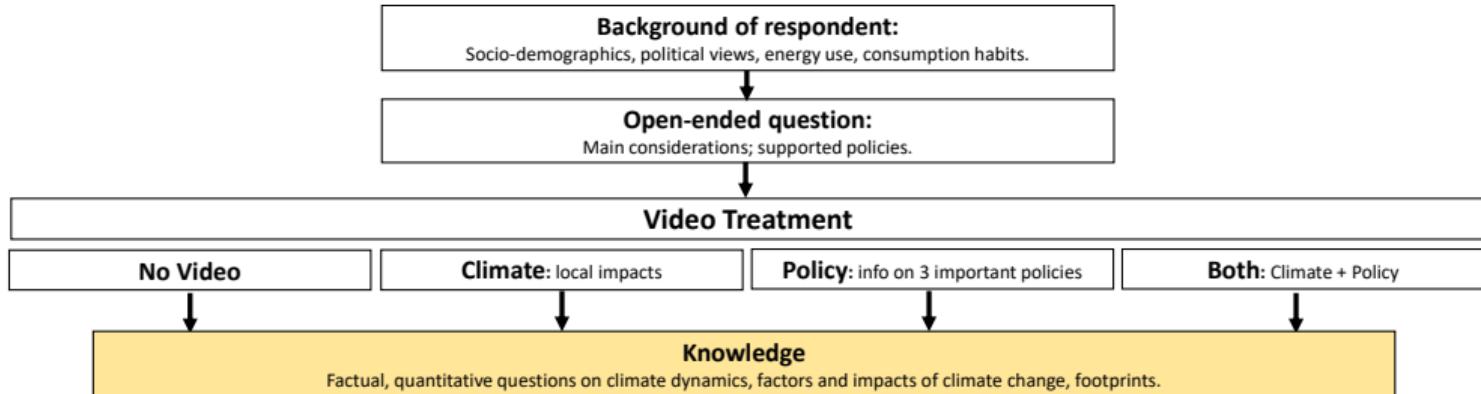
In the US, such a programme could create 4 million jobs in green sectors, such as public transportation, renewable power plants, buildings' insulation, or sustainable agriculture.

## Carbon tax with cash transfers



To compensate people for the higher prices, the revenues of the carbon tax would be redistributed to all households, regardless of their income.

# Questionnaire



What part of climate change do you think is due to human activity?

None

A little

Some

A lot

Most

Which source of electric energy emits the most greenhouse gases to provide power for a house?

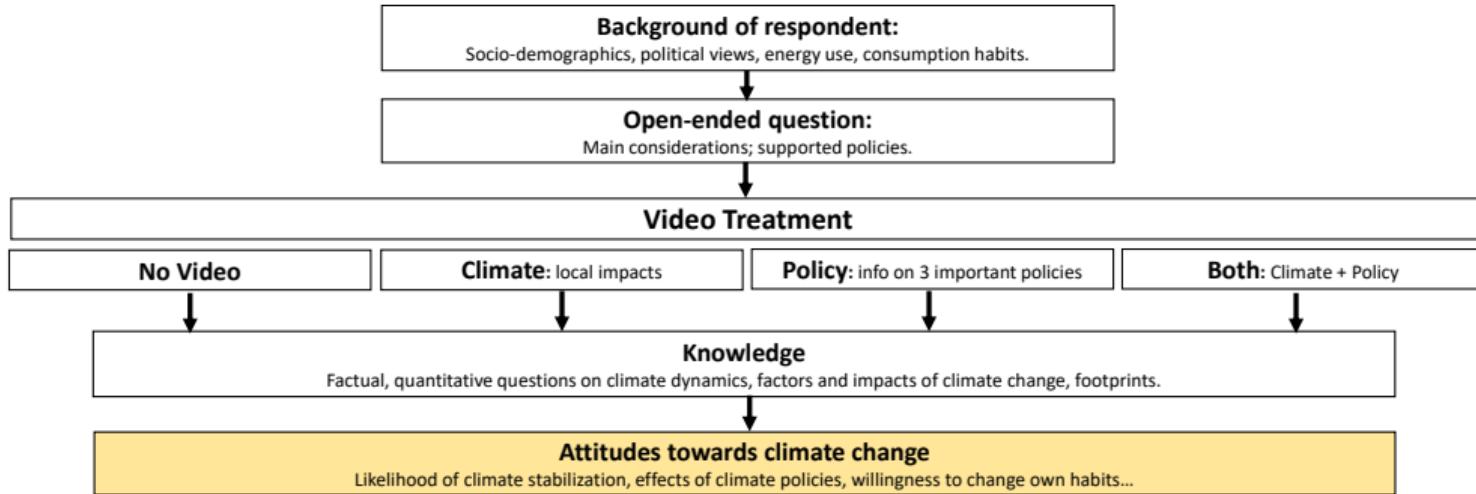
*Please rank the items from 1 (most) to 3 (least) (by clicking and dragging the items).*

Gas-fired power plant

Nuclear power plant

Coal-fired power station

# Questionnaire



Do you support or oppose a ban on combustion-engine cars where alternatives such as public transports are made available to people?

Strongly  
oppose

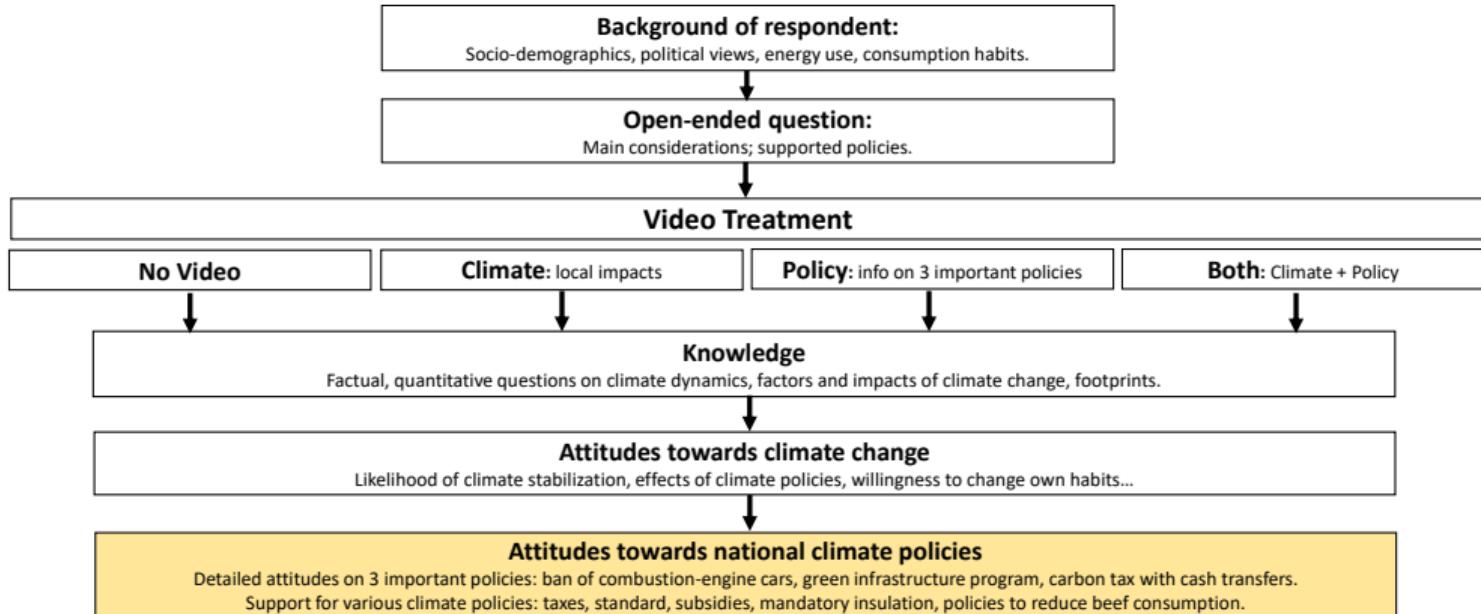
Somewhat  
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support nor  
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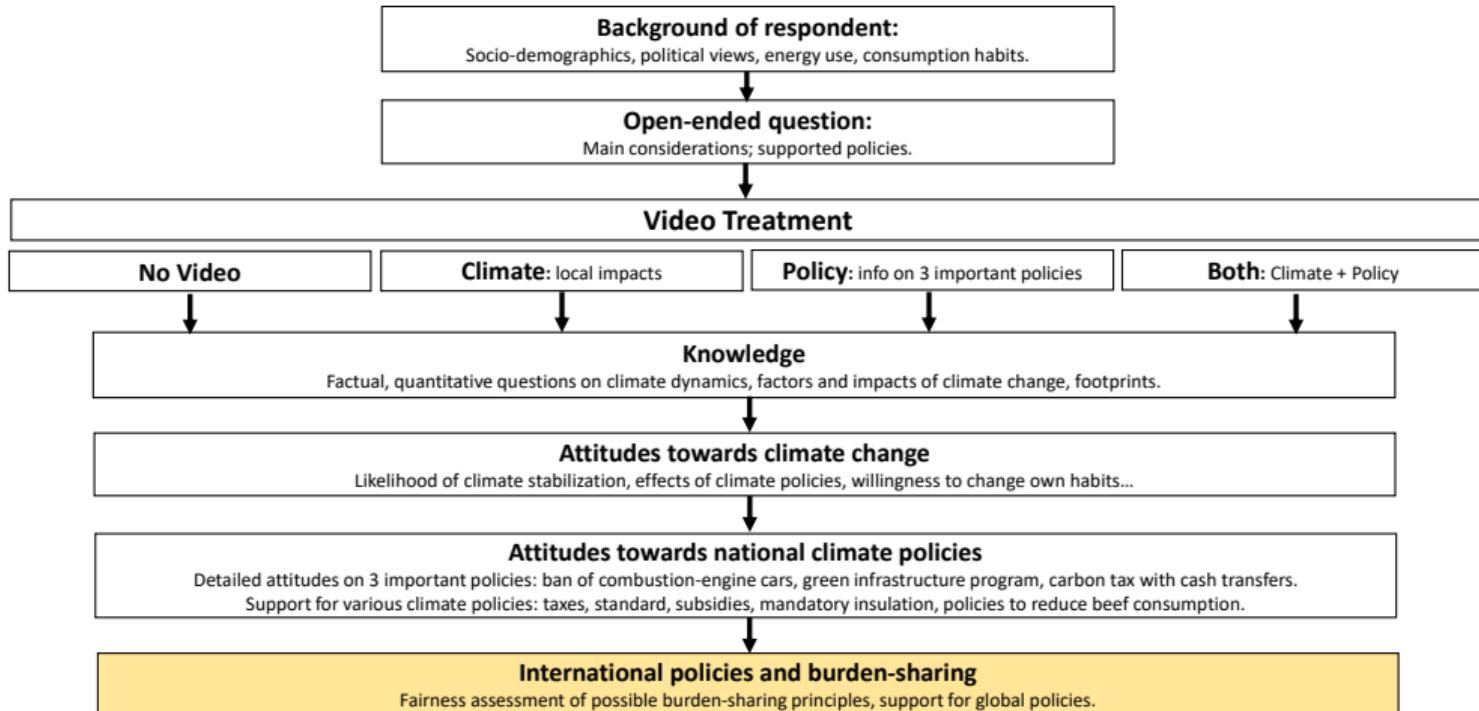
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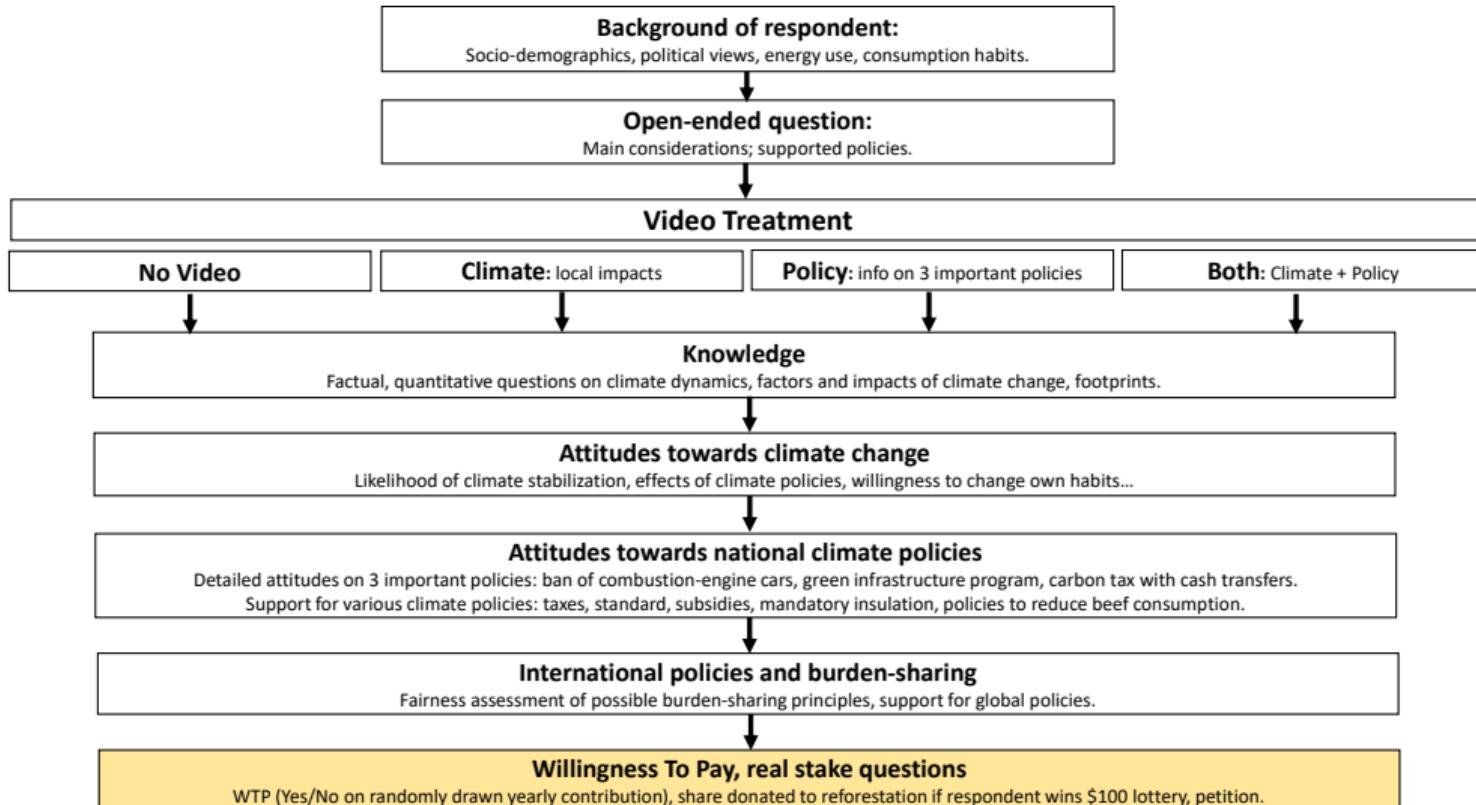
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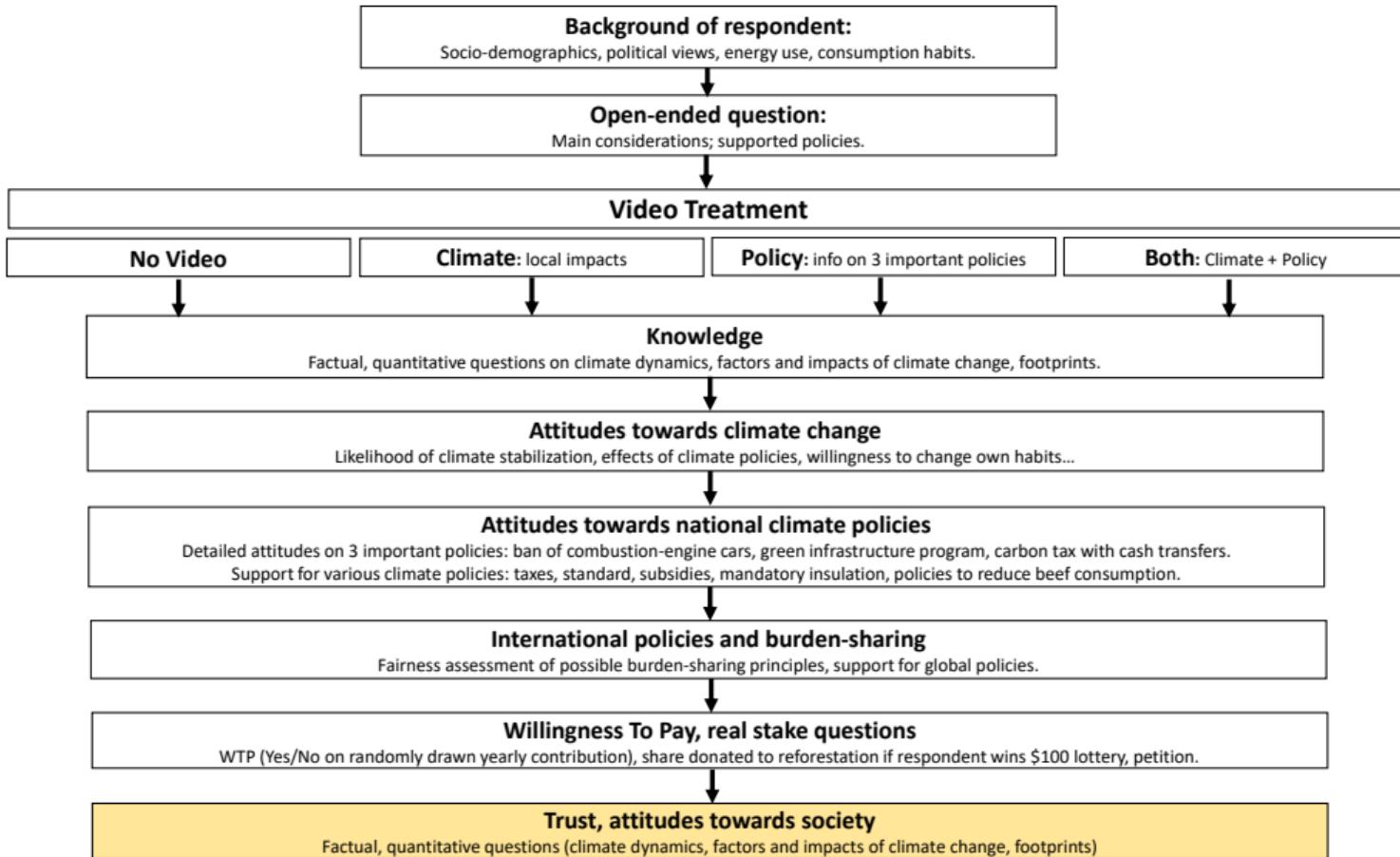
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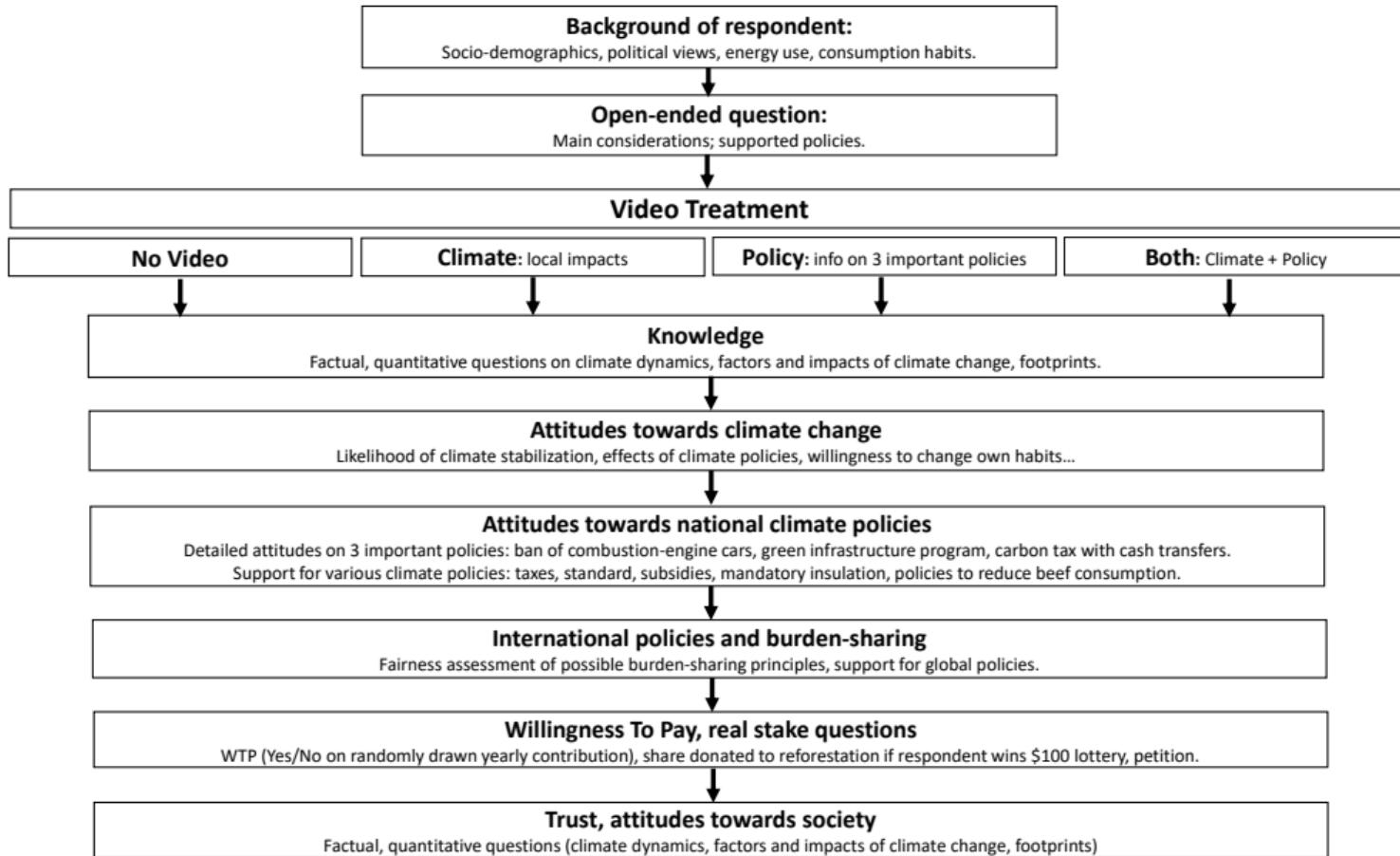
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# Video screenshots

## Local climate impact



With the mix of more hurricanes, rising sea levels, more heatwaves, and lower agricultural output

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## Green infrastructure program



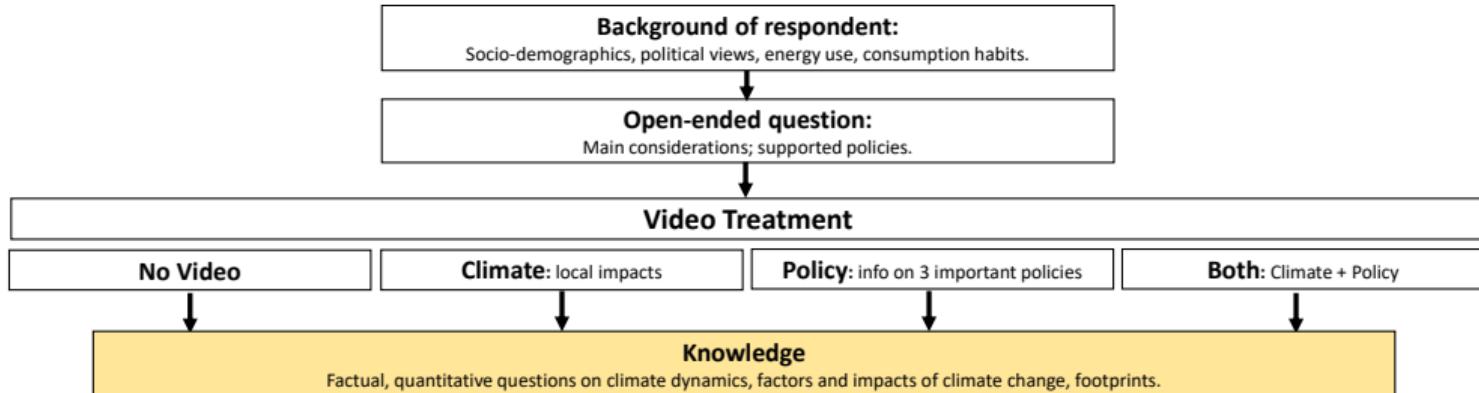
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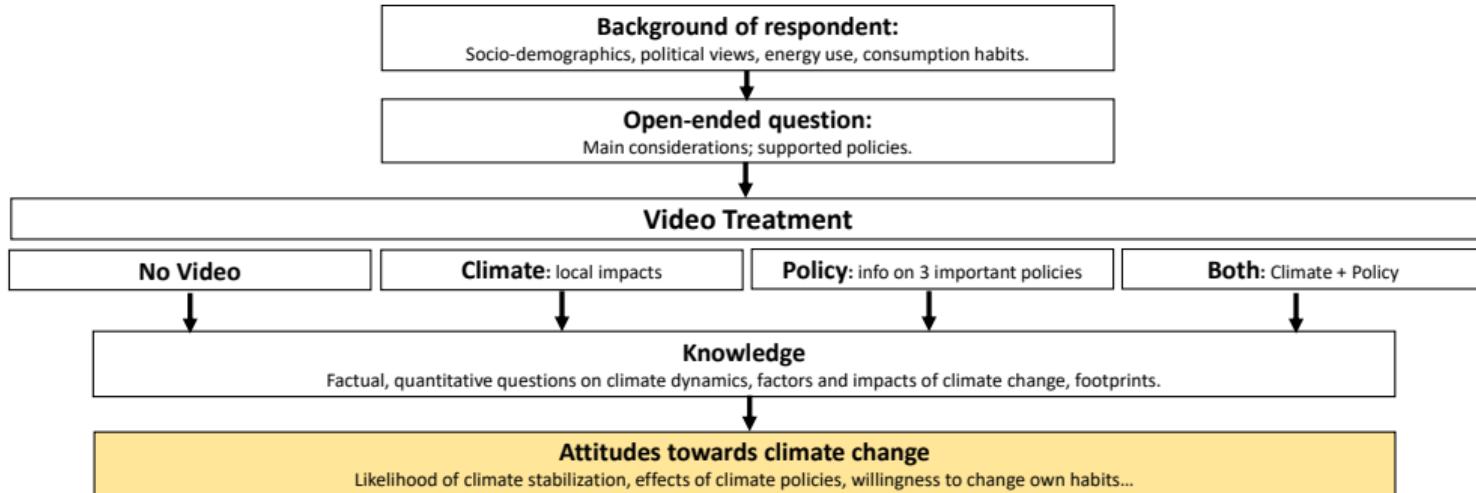
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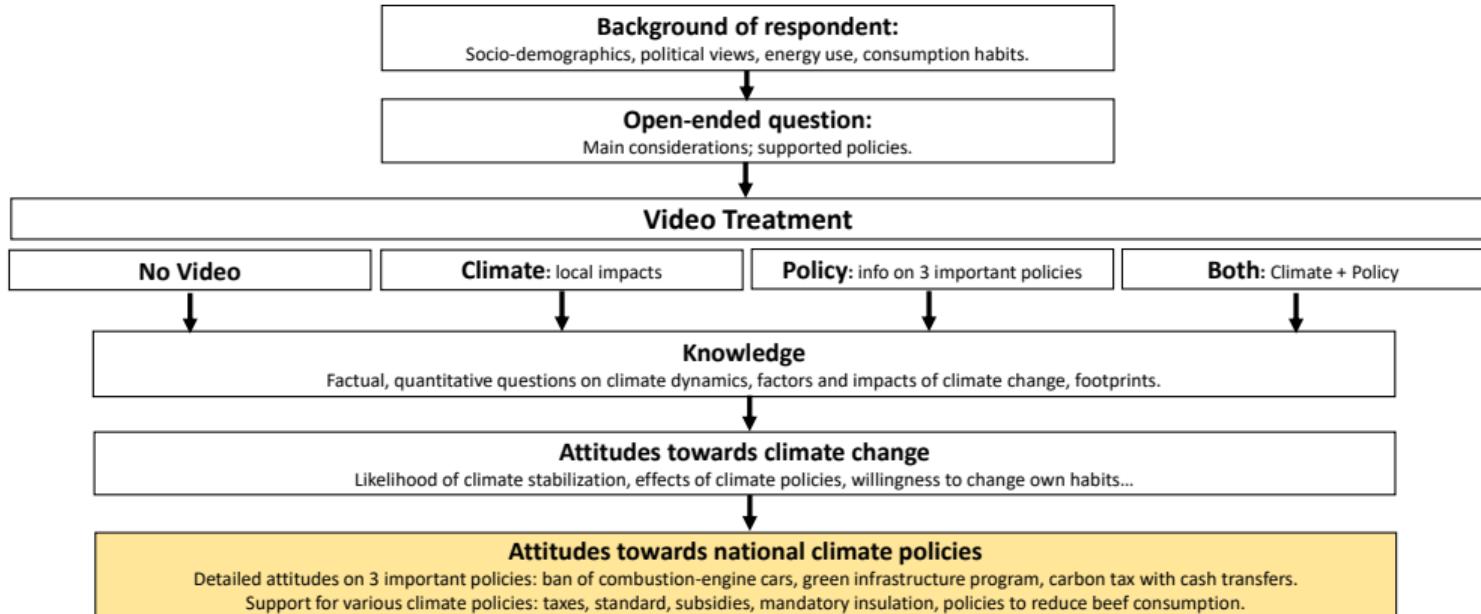
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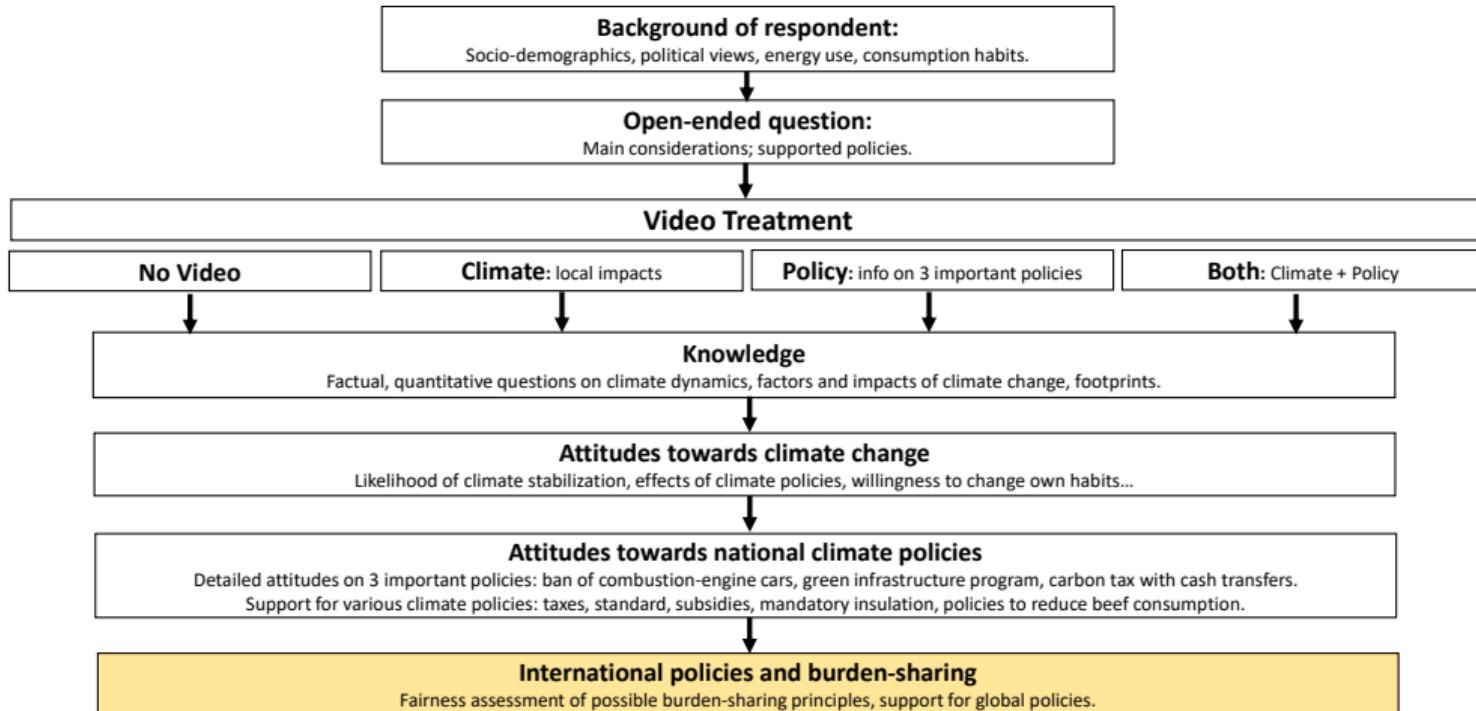
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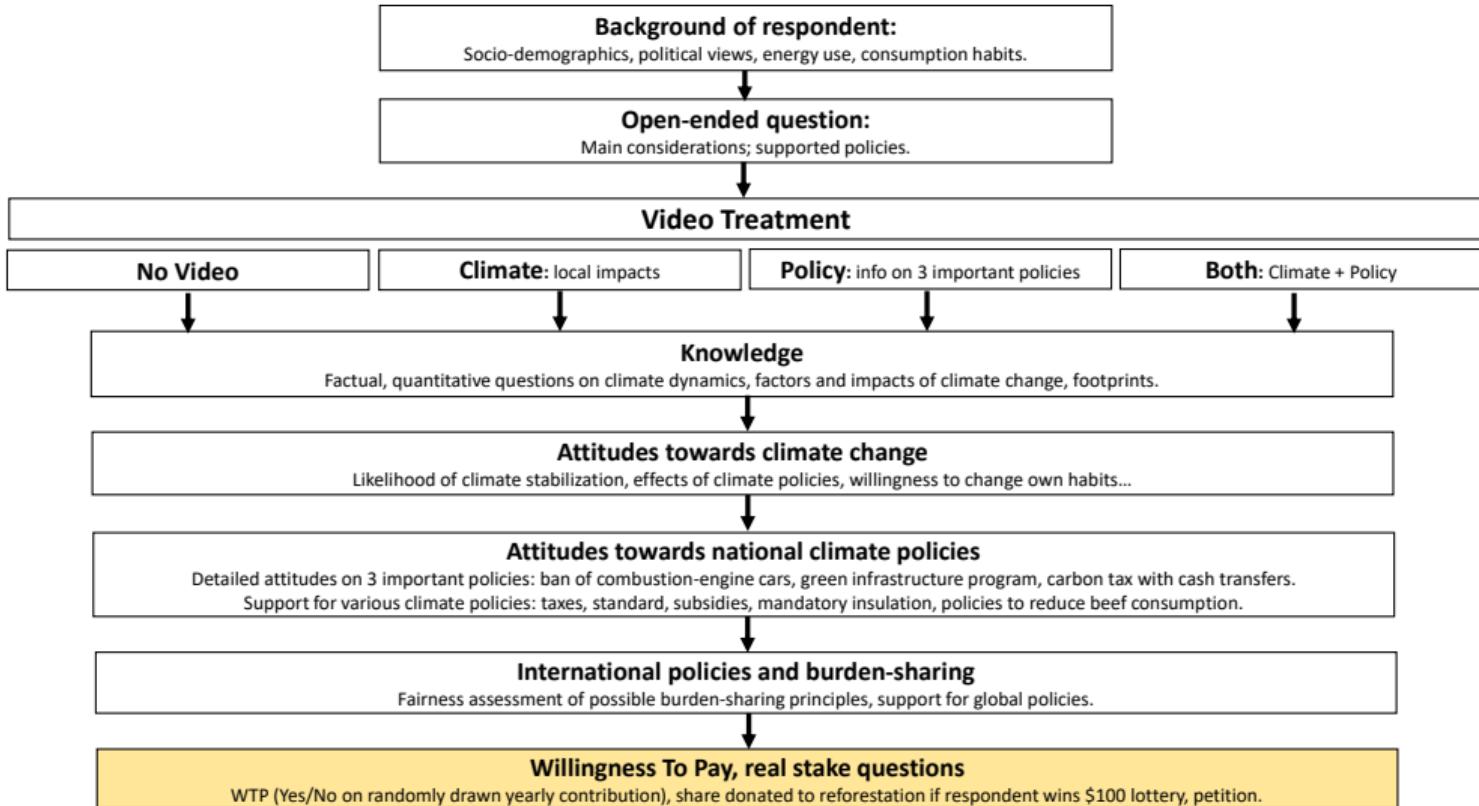
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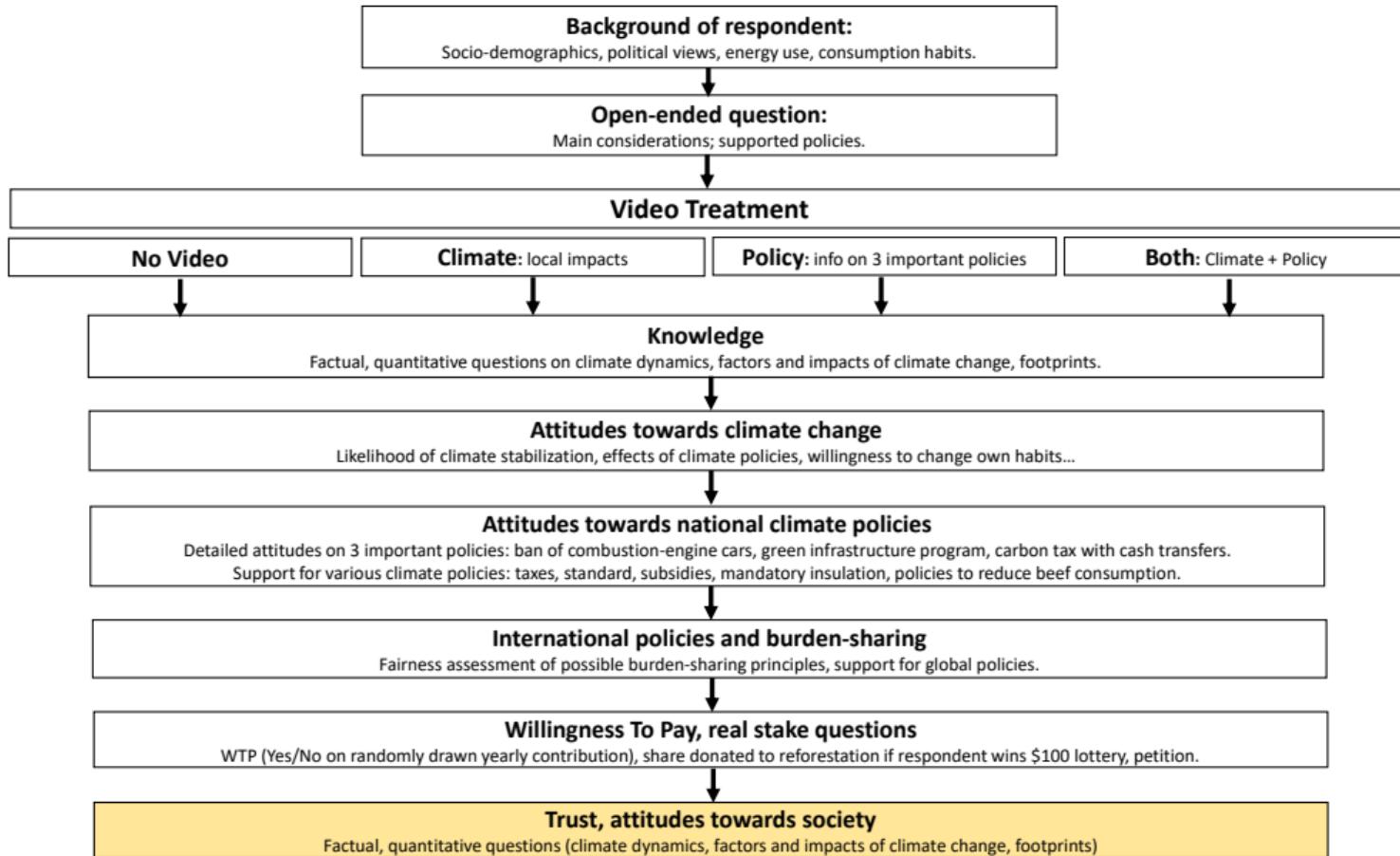
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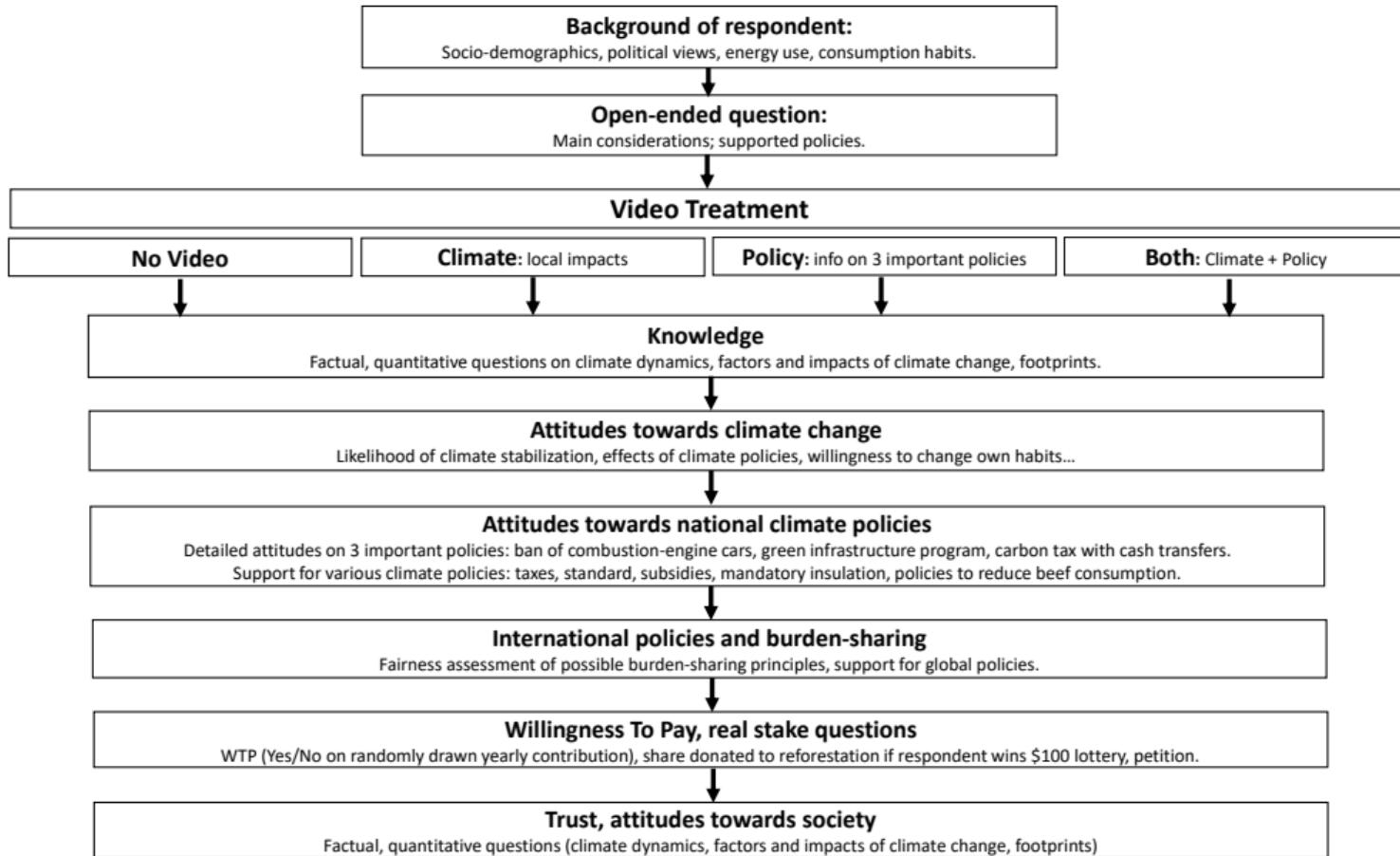
# Questionnaire



# Questionnaire



# Questionnaire



## Sample quality – France

## Ensuring data quality

2,006 respondents selected through quotas that ensure representativeness along:  
gender, age, income, region, diploma, urban/rural.

All results are re-weighted along quota variables (except rural/urban) to increase representativeness even further.

Screening question in the middle of the survey.

Appeal to people's social responsibility.

Warn that “incoherent and rushed responses” (< 11 min) are dismissed and disqualified for monetary compensation.

Record of time spent on separate questions & overall survey (median: 27 min).

Ask for feedback post survey, whether felt survey was biased (78% find it unbiased).

# Representativeness of the Survey Sample

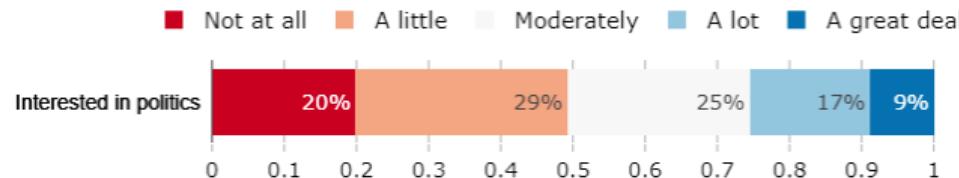
	Raw Sample	Weighted Sample	Population
Sample size	2,006	2,006	
Male	0.44	0.49	0.48
18-24 years old	0.10	0.12	0.12
25-34 years old	0.15	0.15	0.15
35-49 years old	0.25	0.24	0.24
50-54 years old	0.25	0.24	0.24
More than 65 years old	0.25	0.25	0.25
Income Q1	0.31	0.26	0.25
Income Q2	0.31	0.26	0.25
Income Q3	0.23	0.25	0.25
Income Q4	0.14	0.23	0.25
Île de France	0.19	0.19	0.19
Nord-Ouest	0.22	0.20	0.20
Nord-Est	0.24	0.22	0.22
Sud-Ouest	0.15	0.14	0.14
Sud-Est	0.20	0.25	0.25
Grand Pôle Urbain	0.59	0.59	0.60
Couronne Grand Pôle Urbain	0.20	0.20	0.18
Autre	0.21	0.21	0.22
Diplômé du supérieur	0.37	0.30	0.29
Bac	0.23	0.17	0.17
CAP ou BEP	0.29	0.25	0.25
Brevet ou Non diplômé	0.11	0.27	0.30

# Descriptive statistics on the control group

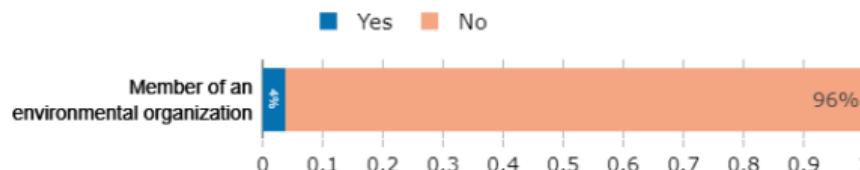
# Households characteristics

# Little interest for politics

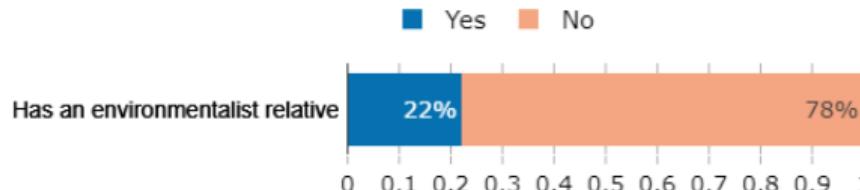
To what extent are you interested in politics?



Are you member of an environmental organization?

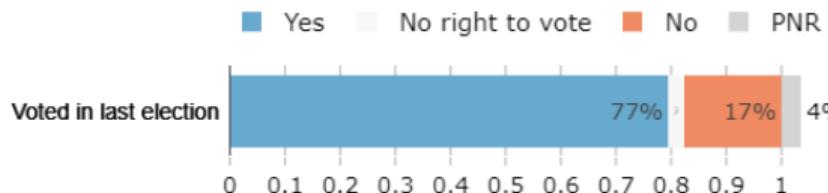


Do you have any relatives who are environmentalists?

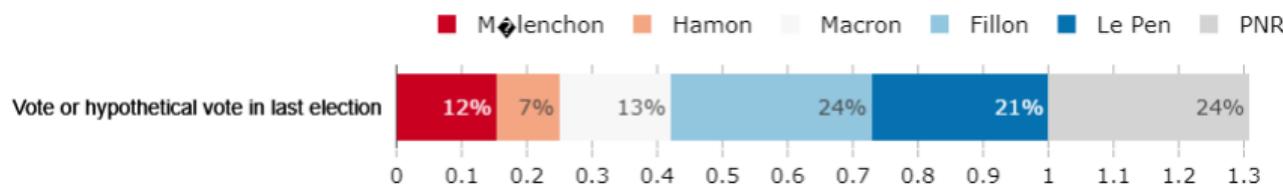


# Broadly representative political leaning

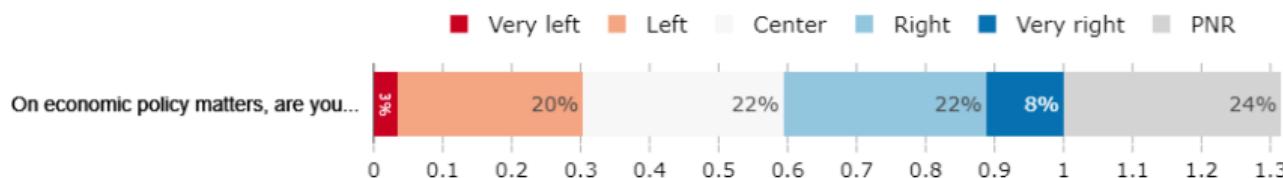
Did you vote in the 2017 French presidential election?



Which candidate did you vote / would you have voted for in the last presidential election?

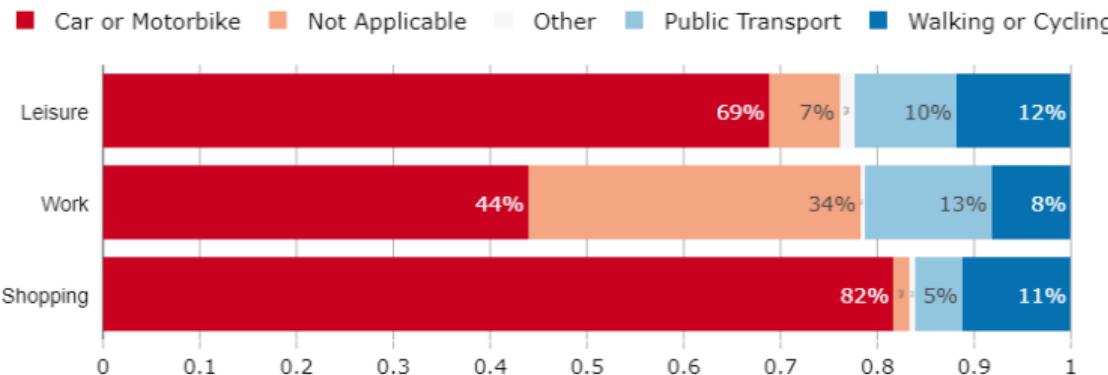


On economic policy matters, where do you see yourself on the left/right spectrum?

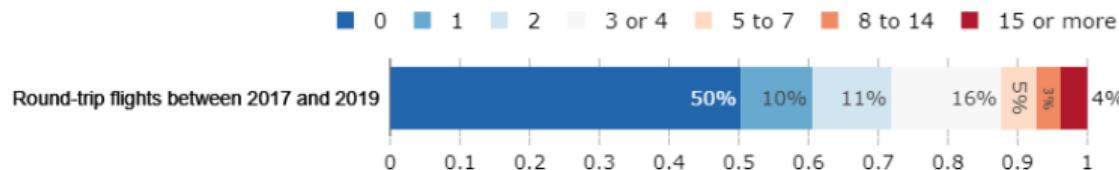


# Drivers more than fliers

Which mode of transport did you mainly use for each of the following trips in 2019?



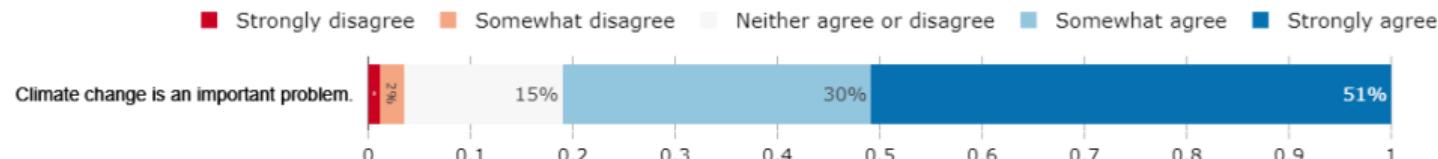
How many round-trip flights did you take between 2017 and 2019?



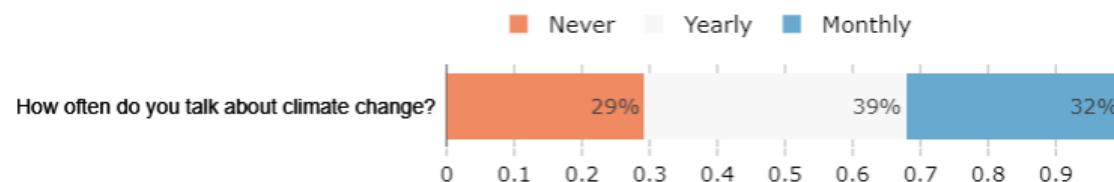
# Climate Knowledge

# Climate change acknowledged as serious problem but overlooked

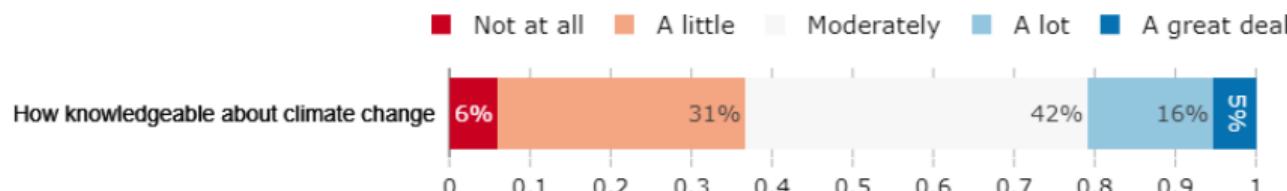
Do you agree or disagree with the following statement: "Climate change is an important problem."



How often do you think or talk with people about climate change?

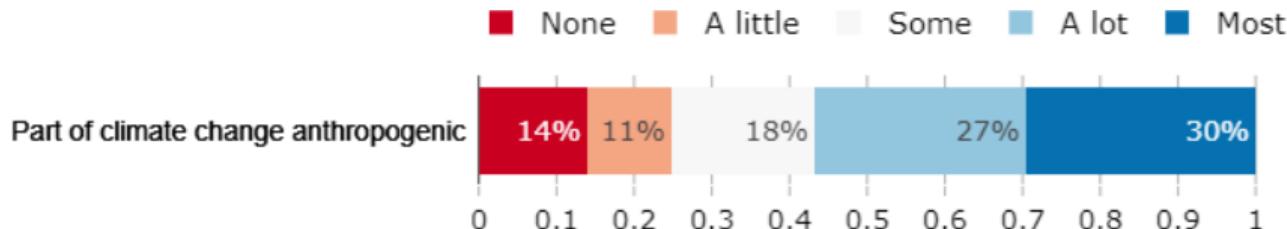


How knowledgeable do you consider yourself about climate change?

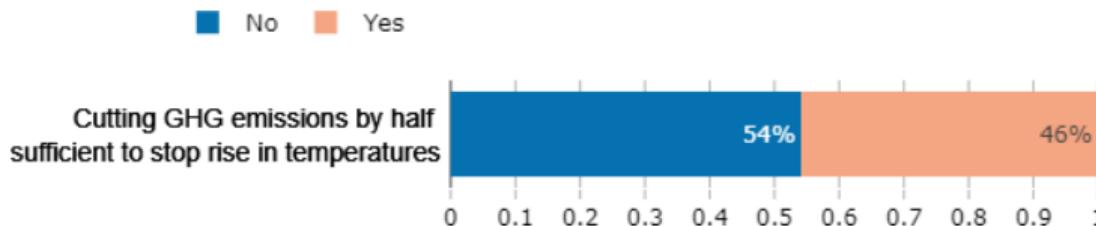


# Limited understanding of climate science

What part of climate change do you think is due to human activity? *Right answer: Most*



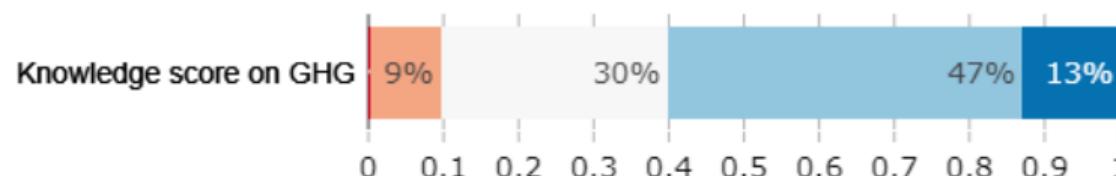
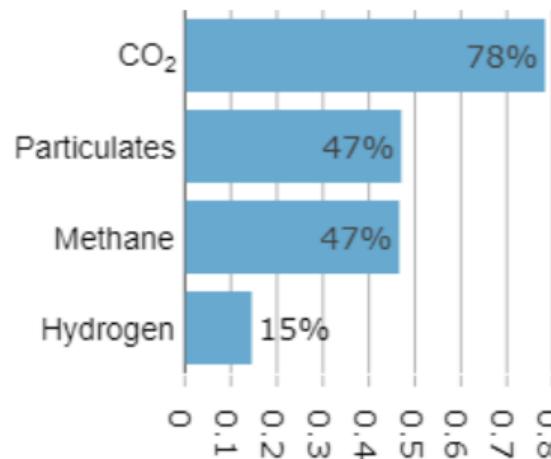
Do you think that cutting global greenhouse gas emissions by half would be sufficient to eventually stop temperatures from rising? *Right answer: No*



## Some mistakes on the factors of climate change

Which of the following elements contribute to climate change? (Multiple answers are possible)

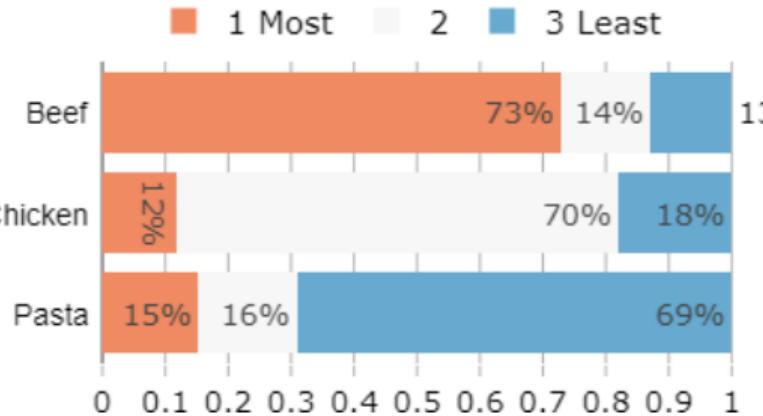
Right answer: *CO<sub>2</sub>; Methane*



*Score on GHG = CO<sub>2</sub> + methane + not hydrogen + not particulates*

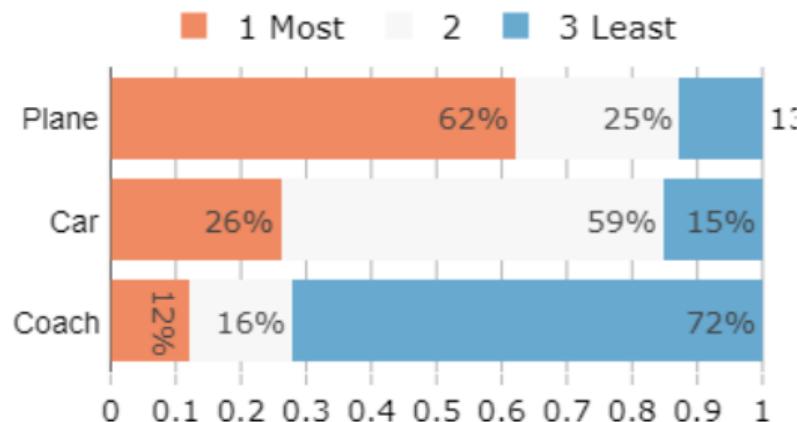
Which dish emits the most greenhouse gases? We consider that each dish weighs half a pound. Please rank the items from 1 (most) to 3 (least).

*Right answer: Beef (1), Chicken (2), Pasta (3)*



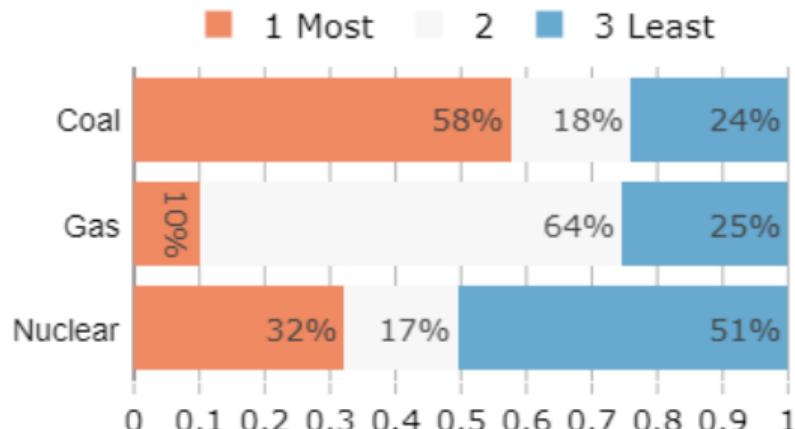
If a family of 4 travels 800 km from Bordeaux to Nice, with which mode of transportation do they emit the most greenhouse gases? Please rank the items from 1 (most) to 3 (least).

*Right answer: Plane (1), Car (2), Coach (3)*



Which source of electric energy emits the most greenhouse gases to provide power for a house?

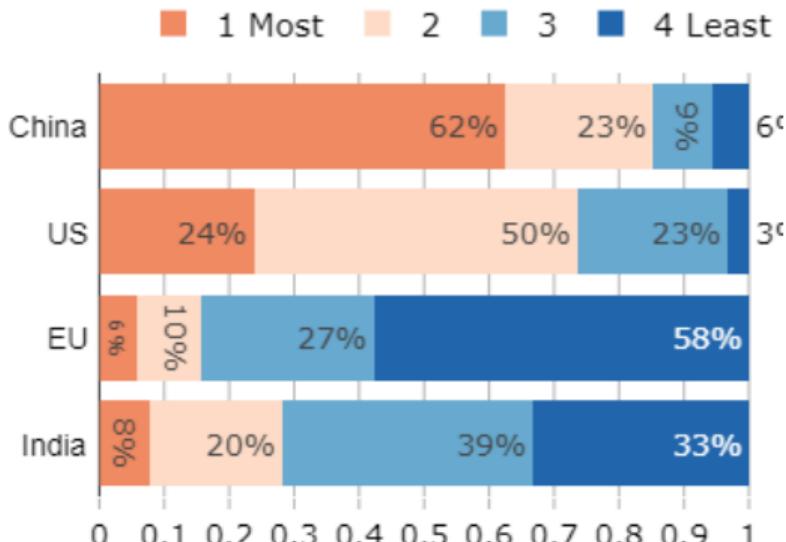
*Right answer: Coal (1), Gas (2), Nuclear (3)*



# Underestimation of EU emissions

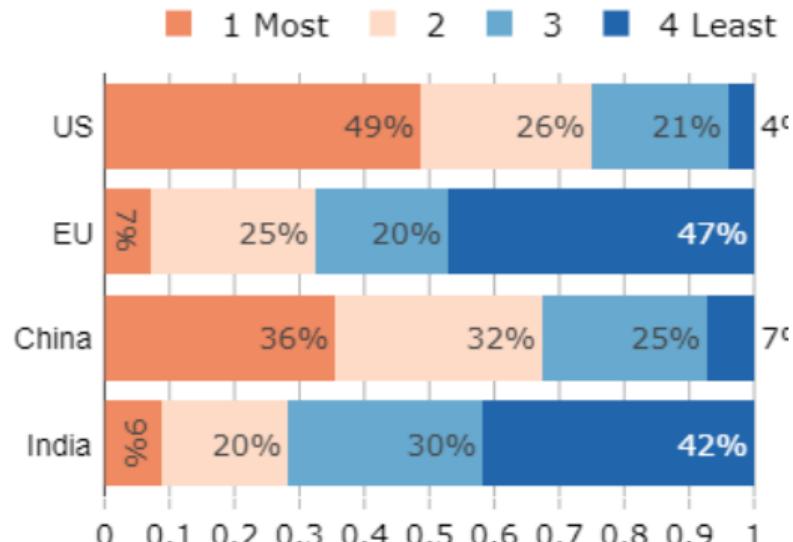
(a) Which region contributes most to global greenhouse gas emissions?

Right answer: China (1), US (2), EU (3), India (4)



(b) In which region does the consumption of an average person contribute most to climate change?

Right answer: US (1), EU (2), China (3), India (4)

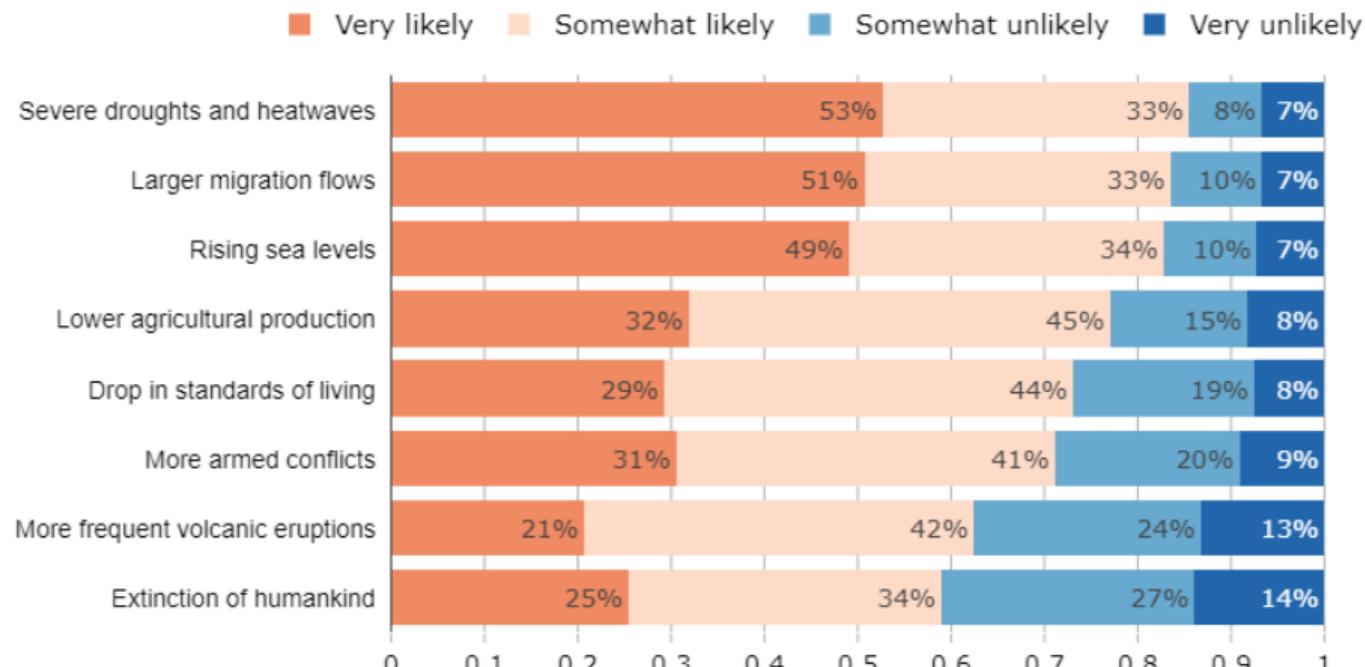


# Impacts of climate change: Credit a lot of effects

If nothing is done to limit climate change, how likely do you think it is that climate change will lead to the following events?

*Right answer: Very likely: Severe droughts and heatwaves; Rising sea levels*

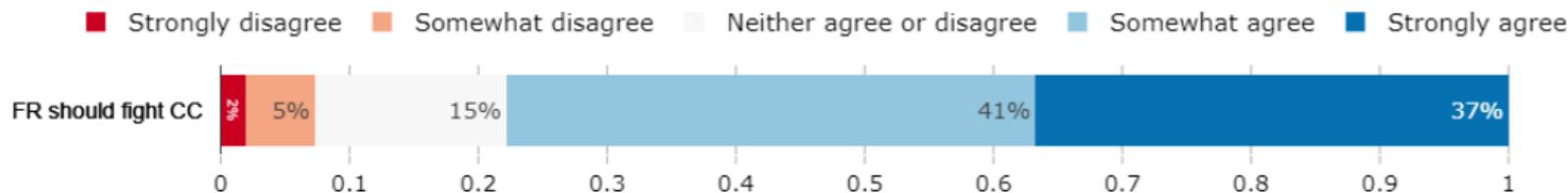
*Very unlikely: More frequent volcanic eruptions*



# Climate Attitudes

# In principle, high support for climate action

Do you agree or disagree with the following statement: "France should take measures to fight climate change."

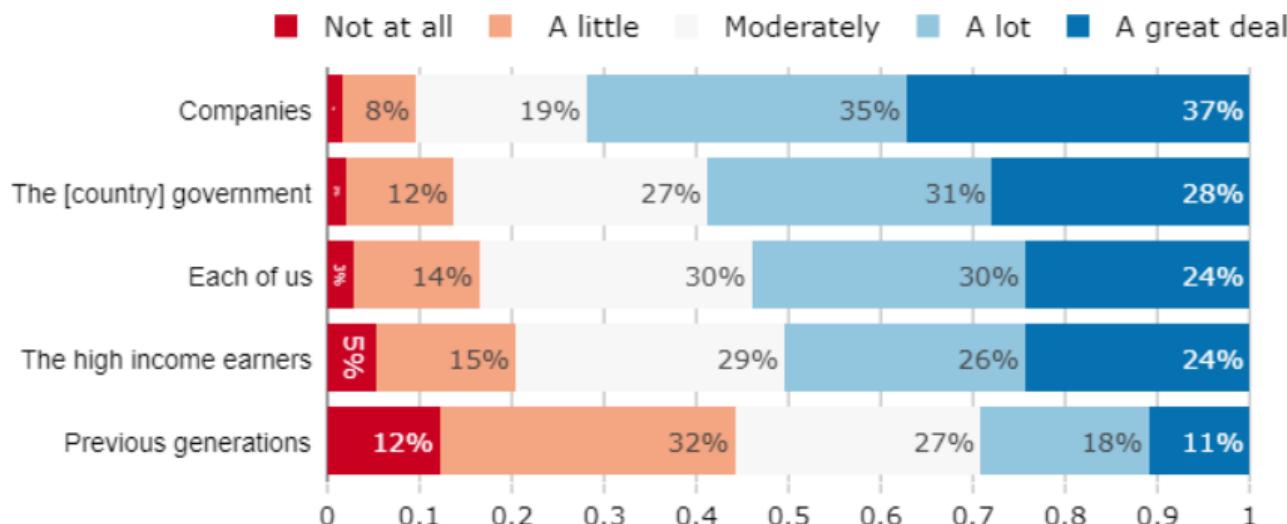


How should French climate policies depend on what other countries do?



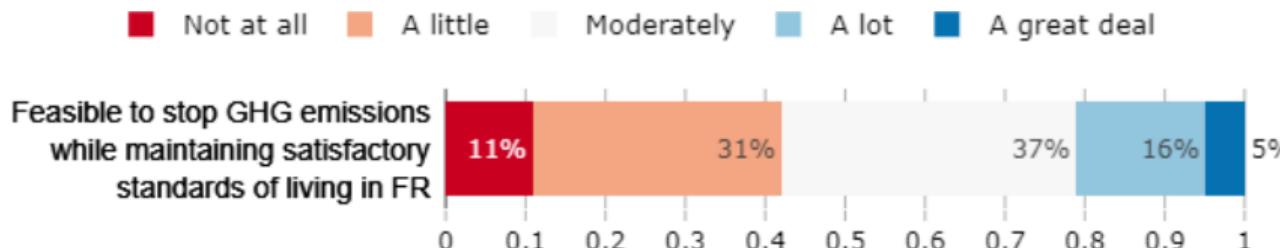
# Companies held responsible

To what extent are the following groups responsible for climate change in France?

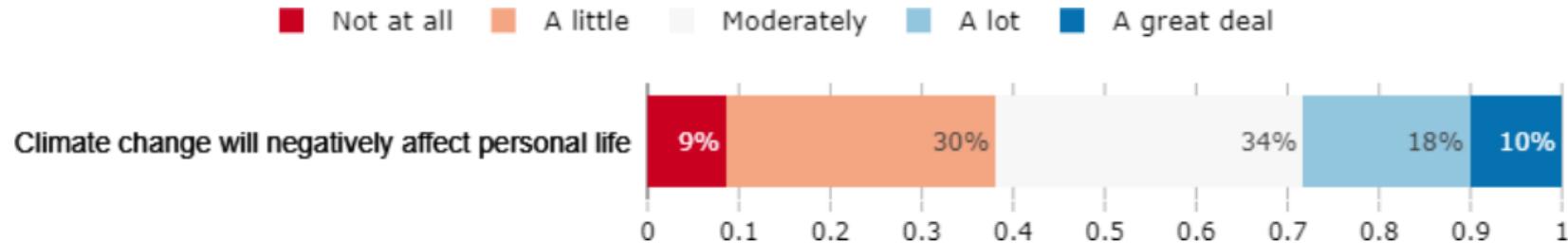


## Balance between optimistic and pessimistic

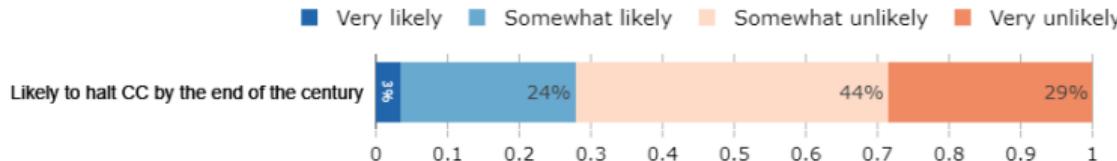
To what extent do you think that it is technically feasible to stop greenhouse gas emissions while maintaining satisfactory standards of living in France?



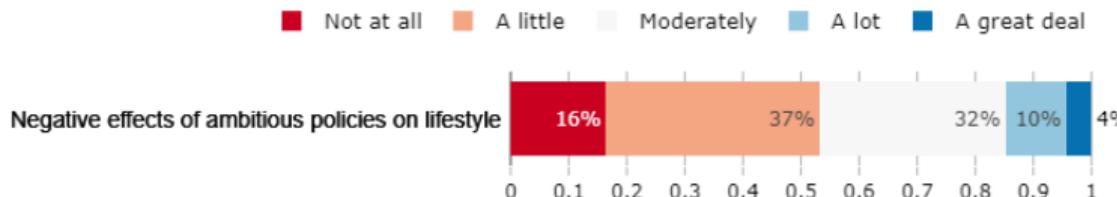
To what extent do you think climate change already affects or will negatively affect your personal life?



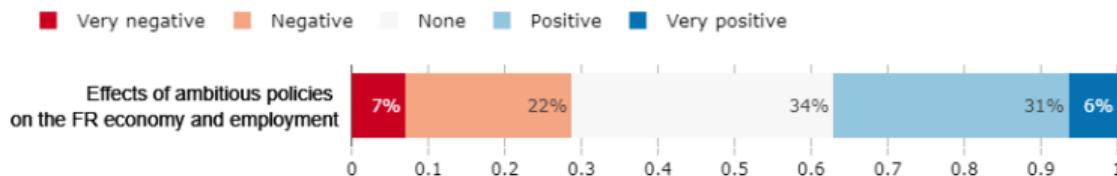
How likely is it that human kind halt climate change by the end of the century?



If we decide to halt climate change through ambitious policies, to what extent do you think it would negatively affect your lifestyle?

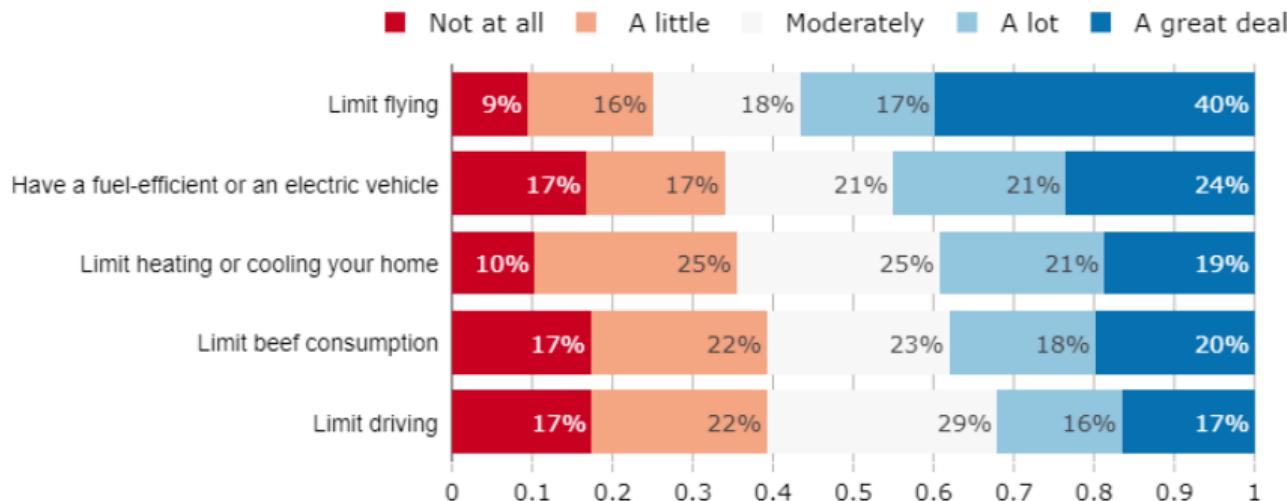


If we decide to halt climate change through ambitious policies, what would be the effects on the French economy and employment?



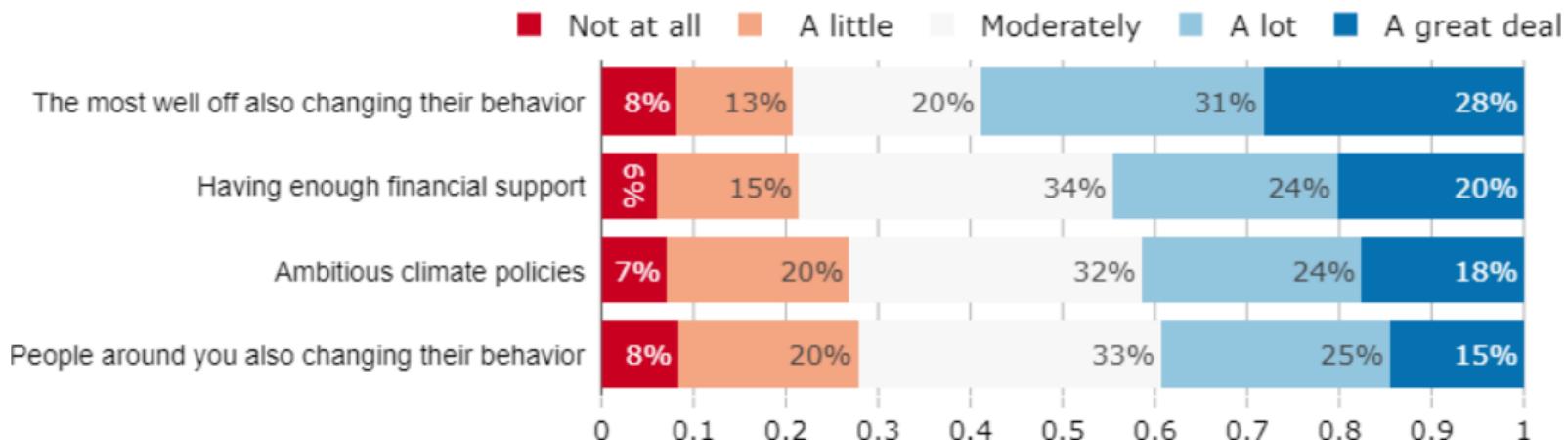
## Willing to adopt the less restrictive behaviors

Here are possible habits that experts say would help reduce greenhouse gas emissions. To what extent would you be willing to adopt the following behaviors?



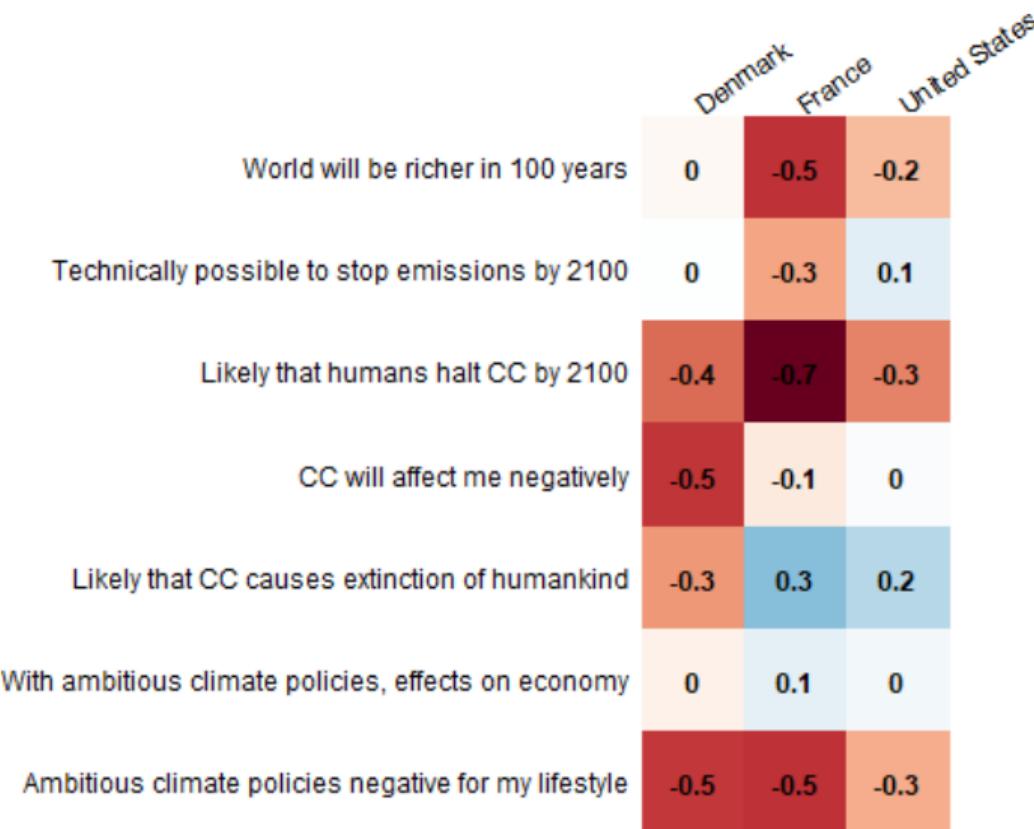
# Main factor needed to change lifestyle: fairness

How important are the factors below in order for you to adopt a sustainable lifestyle (i.e. limit driving, flying, and consumption, cycle more, etc.)?



# French people more pessimistic than Danish and Americans

Average answer on different questions recoded as [-2;+2].



## Comparison across the 3 Policies:

## Policies precisely described

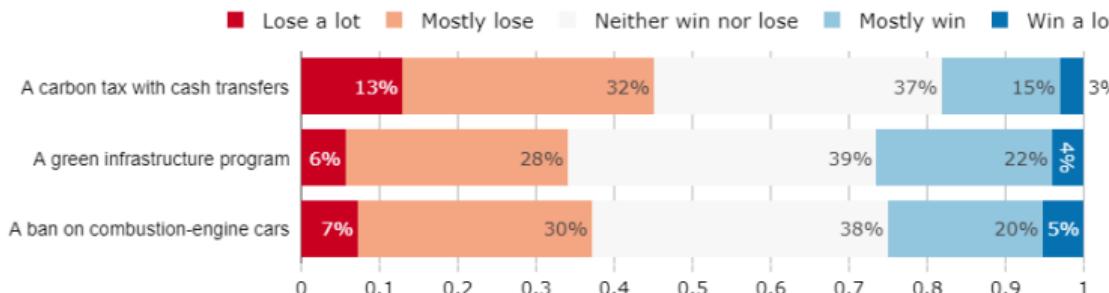
**Ban on Combustion Engine Cars:** To fight climate change, car producers can be required by law to produce cars that emit less CO<sub>2</sub> per mile of the cars they sell. The emission limit is lowered every year so that only electric or hydrogen vehicles can be sold after 2030. This policy is called a *ban on combustion-engine cars*.

**Green Infrastructure Program:** A green infrastructure program is a large public investment program, which would be financed by additional public debt, to accomplish the transition needed to cut greenhouse gases emissions. Investments would concern renewable power plants, public transportation, thermal renovation of building, and sustainable agriculture.

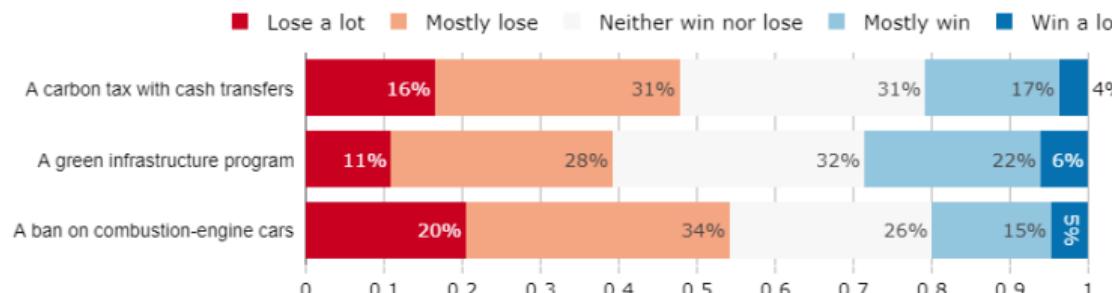
**Carbon Tax with Cash Transfers:** To fight climate change, the French government can make greenhouse gas emissions costly, to make people and firms change their equipment and reduce their emissions. The government could do this through a policy called a carbon tax with cash transfers. Under such a policy, the government would tax all products that emit greenhouse gas. For example, the price of gasoline would increase by 10 cents per liter. To compensate households for the price increases, the revenues from the carbon tax would be redistributed to all households, regardless of their income. Each adult would thus receive 160€ per year.

# Many think they would lose out

*Comparison of responses to each policy question: Do you think that financially your household would win or lose from the policy?*

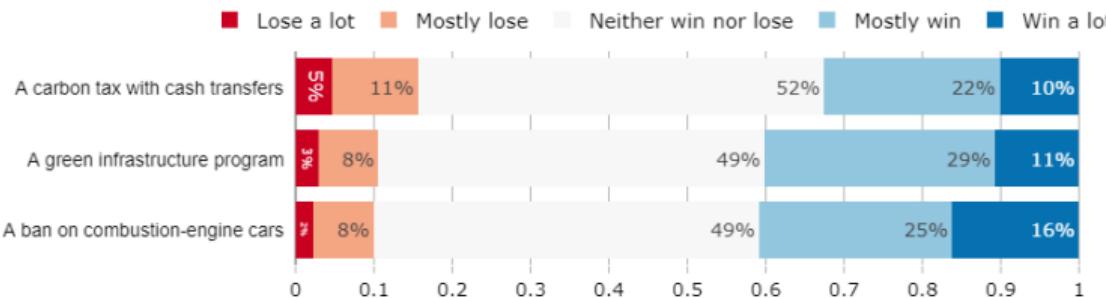


*Comparison of responses to each policy question: In your view, would those living in rural areas win or lose from the following policy?*

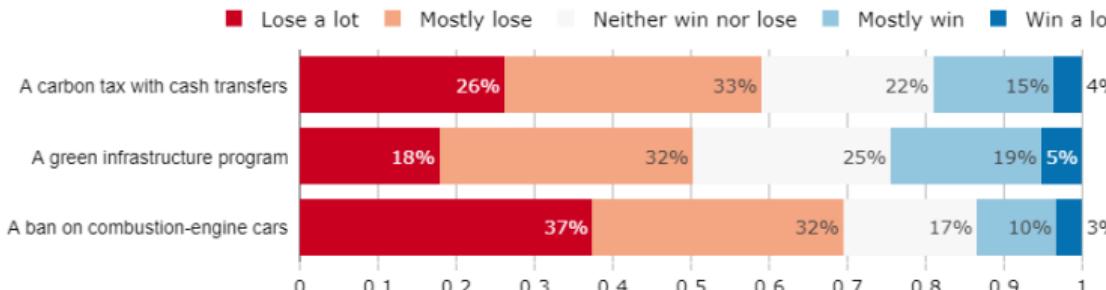


# Most view rich winning and poor losing

*Comparison of responses to each policy question: In your view, would high-income earners win or lose from the following policy?*

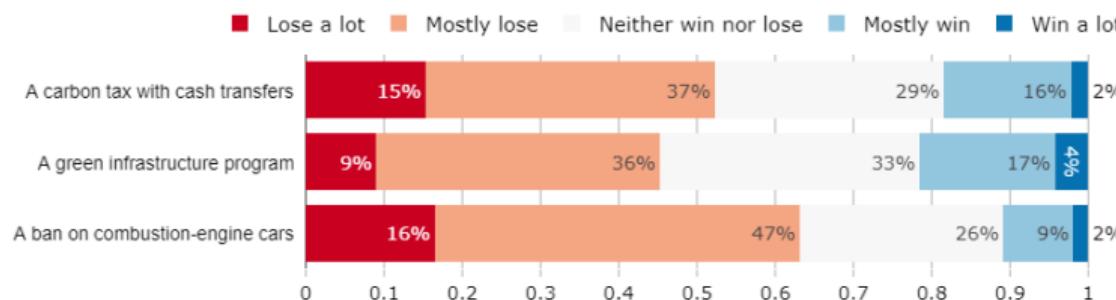


*Comparison of responses to each policy question: In your view, would low-income earners win or lose from the following policy?*



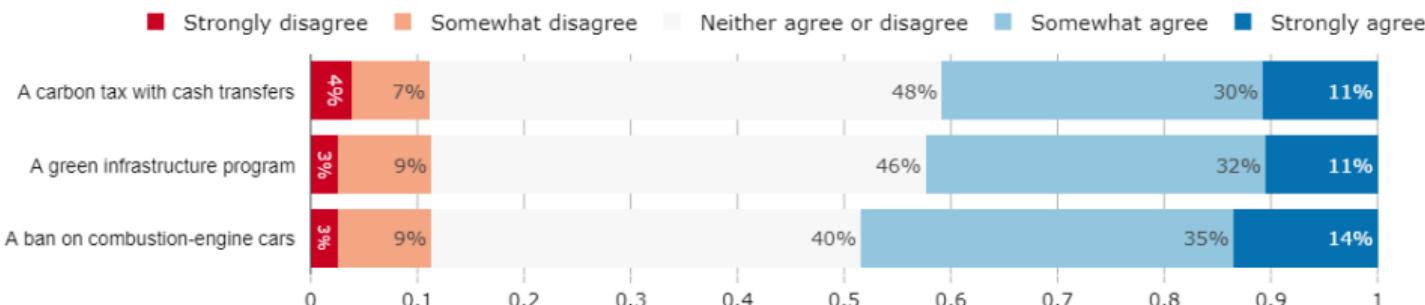
# See the middle class gains close to the poor's

*Comparison of responses to each policy question: In your view, would the **middle-class** win or lose from the following policy?*

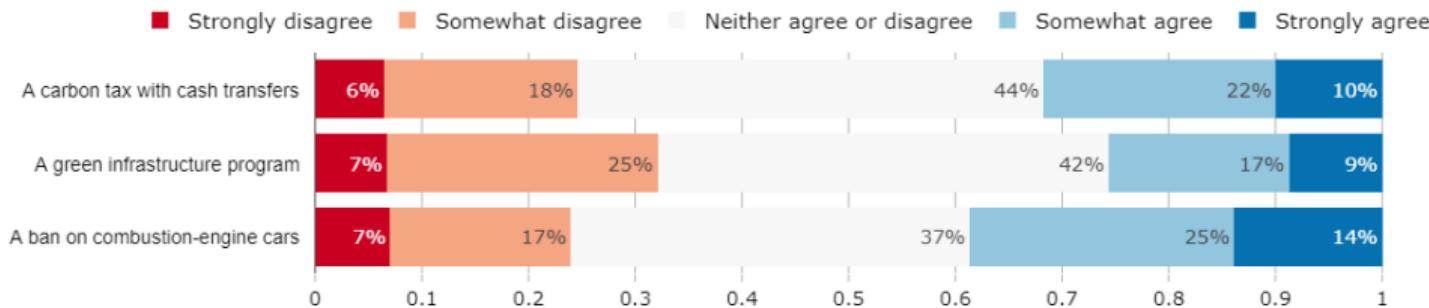


# Only investments gather more positive than negative views

*Comparison of responses to each policy question: Do you agree or disagree with the following statement? The policy would have a **large effect** on the French economy and employment.*

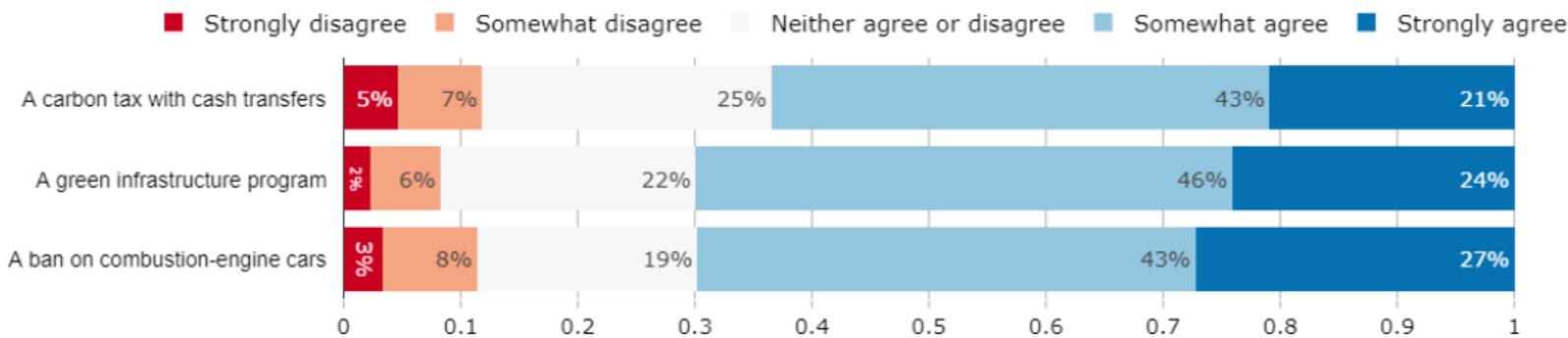
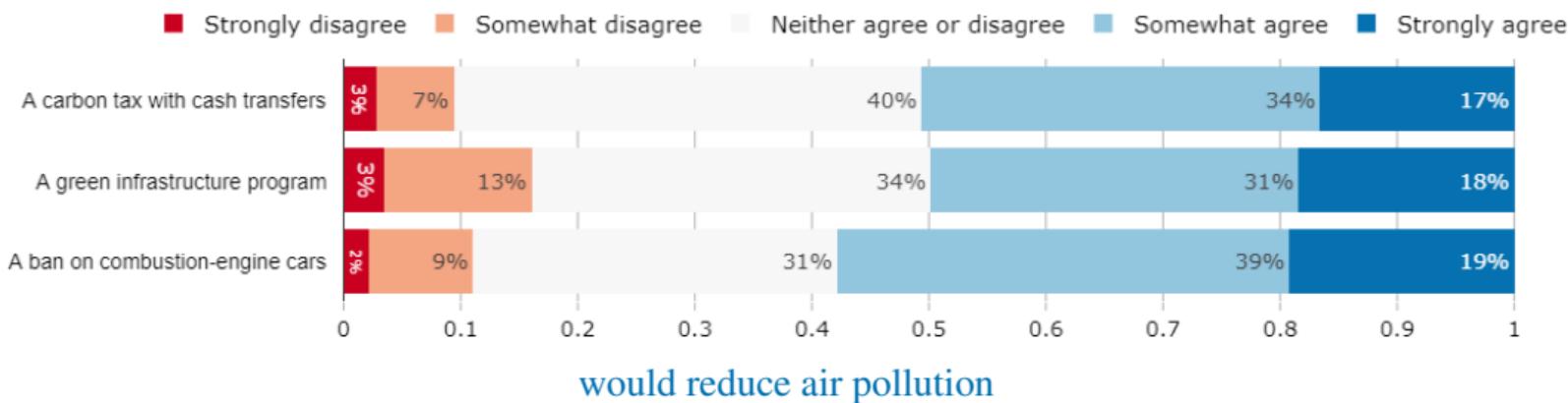


*Comparison of responses to each policy question: Do you agree or disagree with the following statement? The policy would have a **negative effect** on the French economy and employment.*



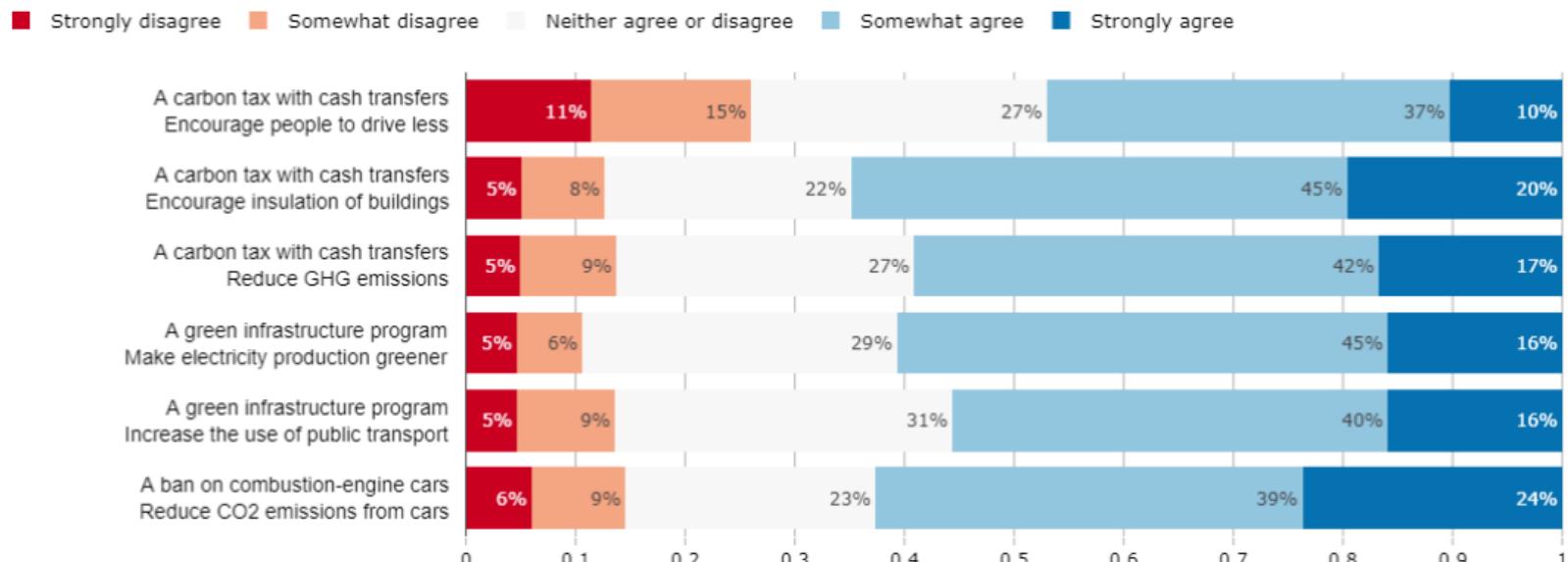
## Policies seen as costly but effective

*Comparison of responses to each policy question: Do you agree or disagree with the following statement? The policy would be costly to fight climate change*



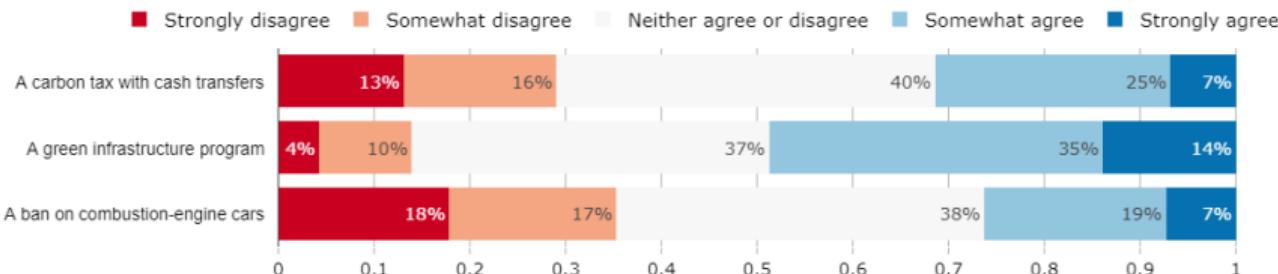
# Incentives are acknowledged

*Comparison of responses to each policy question: Do you agree or disagree with the following statement? The policy would ...*

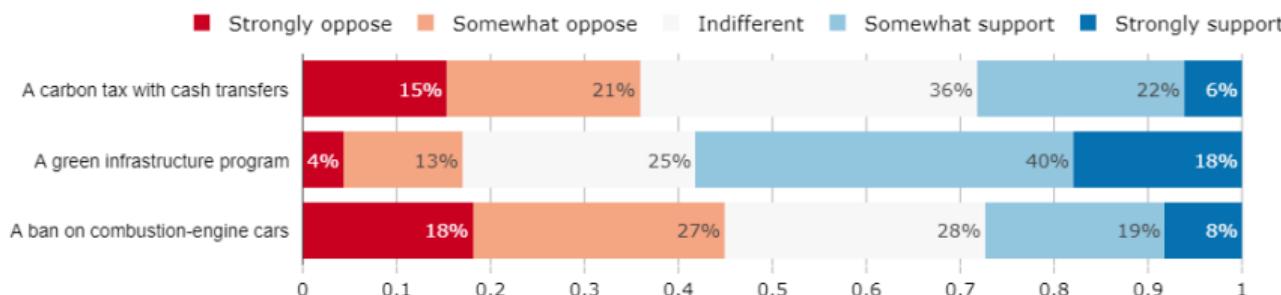


# Fairness as main motive for support

*Comparison of responses to each policy question: Do you agree or disagree with the following statement: "The policy is fair."*

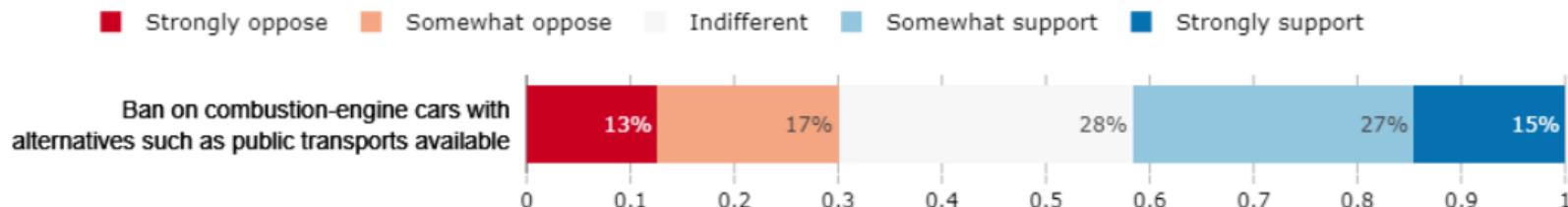


*Comparison of responses to each policy question: Do you support or oppose the following policy?*

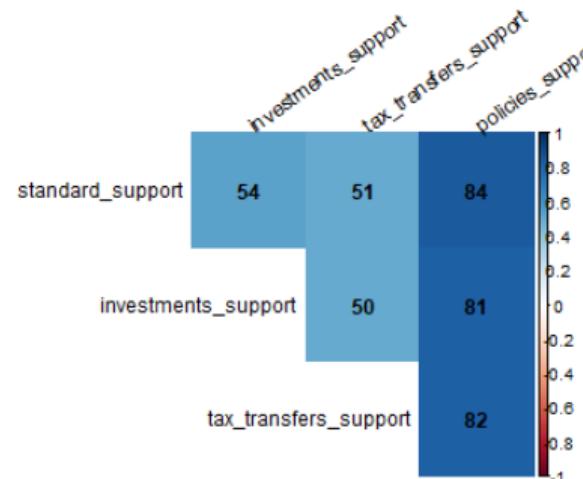


# Ban on thermal cars supported if completed by investments

Do you support or oppose a ban on combustion-engine cars where alternatives such as public transports are made available to people?

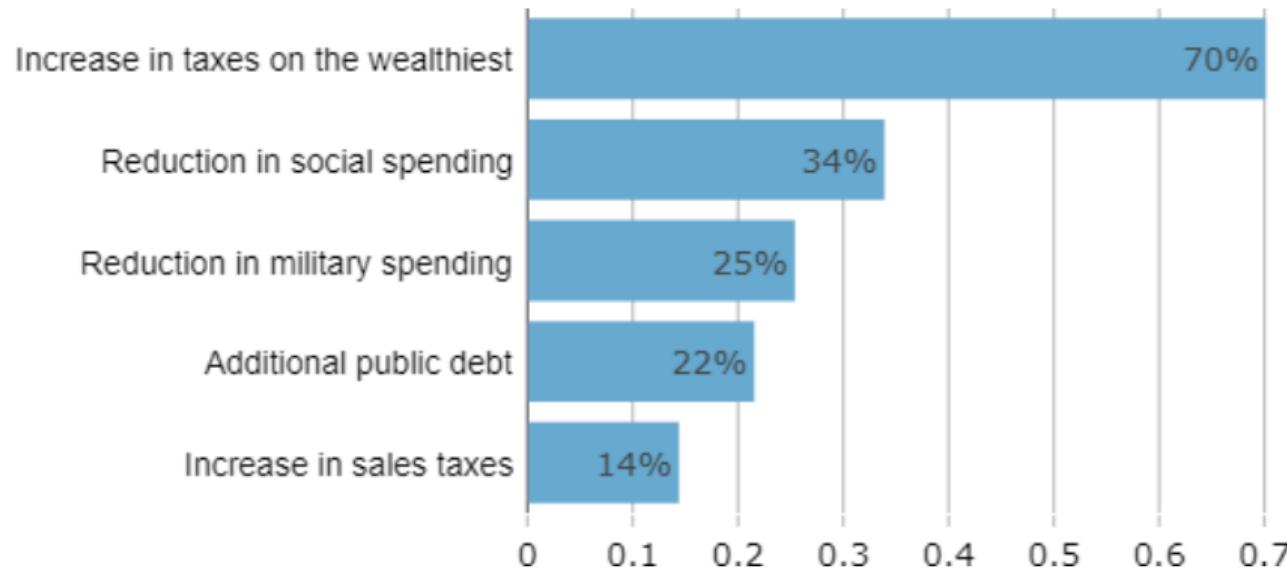


Sizable correlation between support of the 3 policies (coded as [-2;+2]).



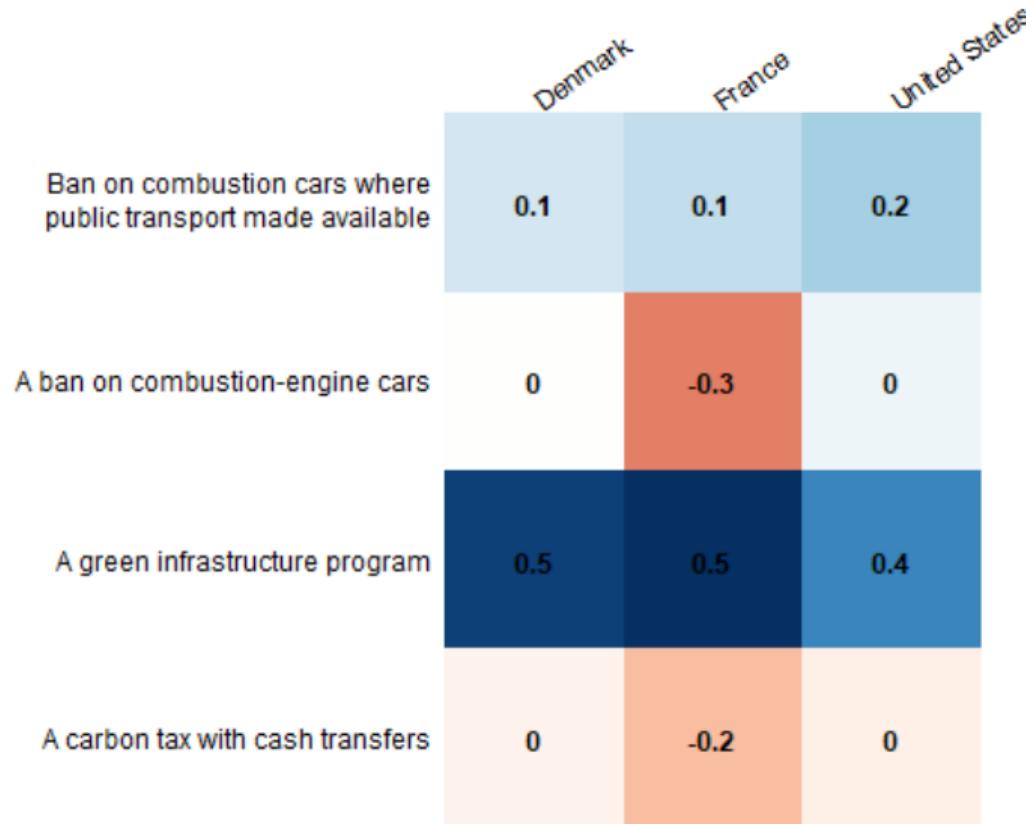
## Redistributive taxes foster support

Until now, we have considered that a green infrastructure program would be financed by public debt, but other sources of funding are possible. What sources of funding do you find appropriate for a green infrastructure program? (Multiple answers are possible)



# French just a little less supportive as Danish, Americans

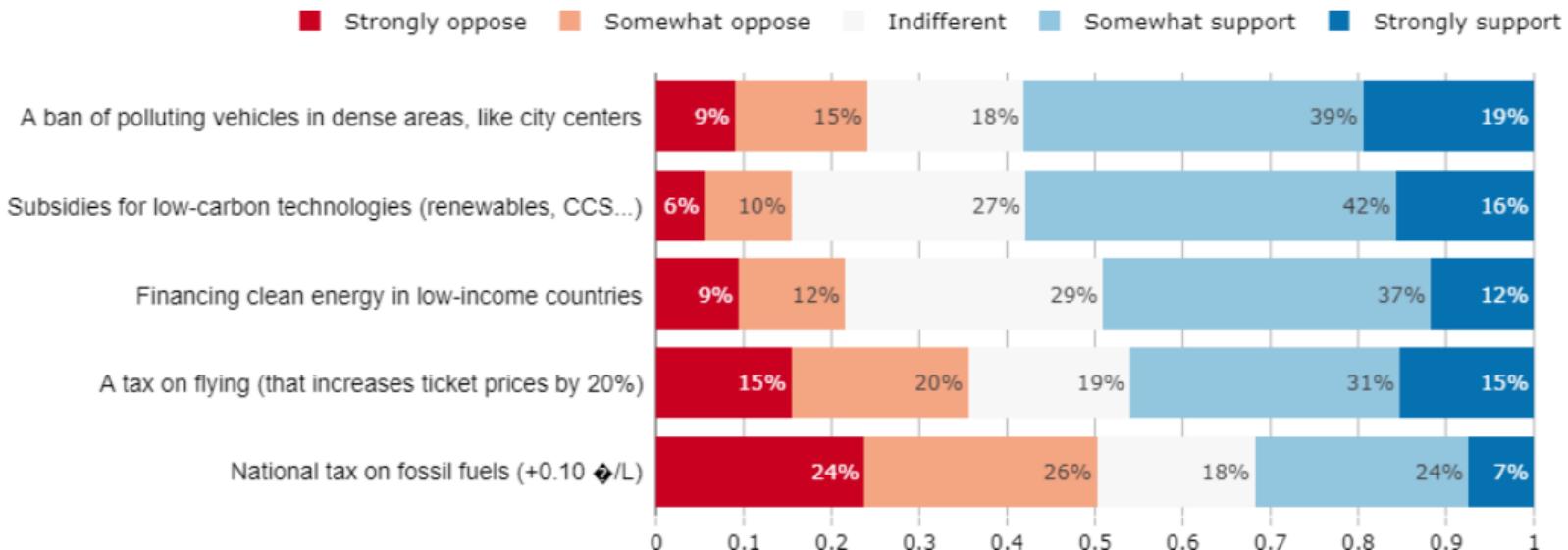
Average answer on different questions recoded as [-2;+2].



## Other Climate Policies

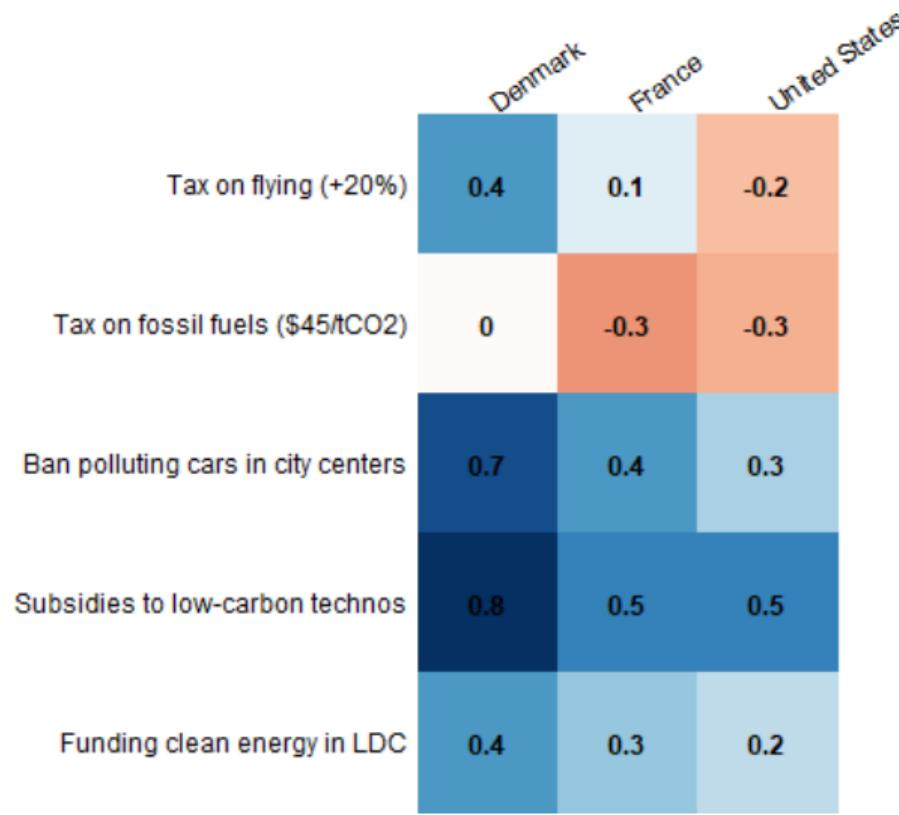
# Other policies largely supported

Do you support or oppose the following climate policies?



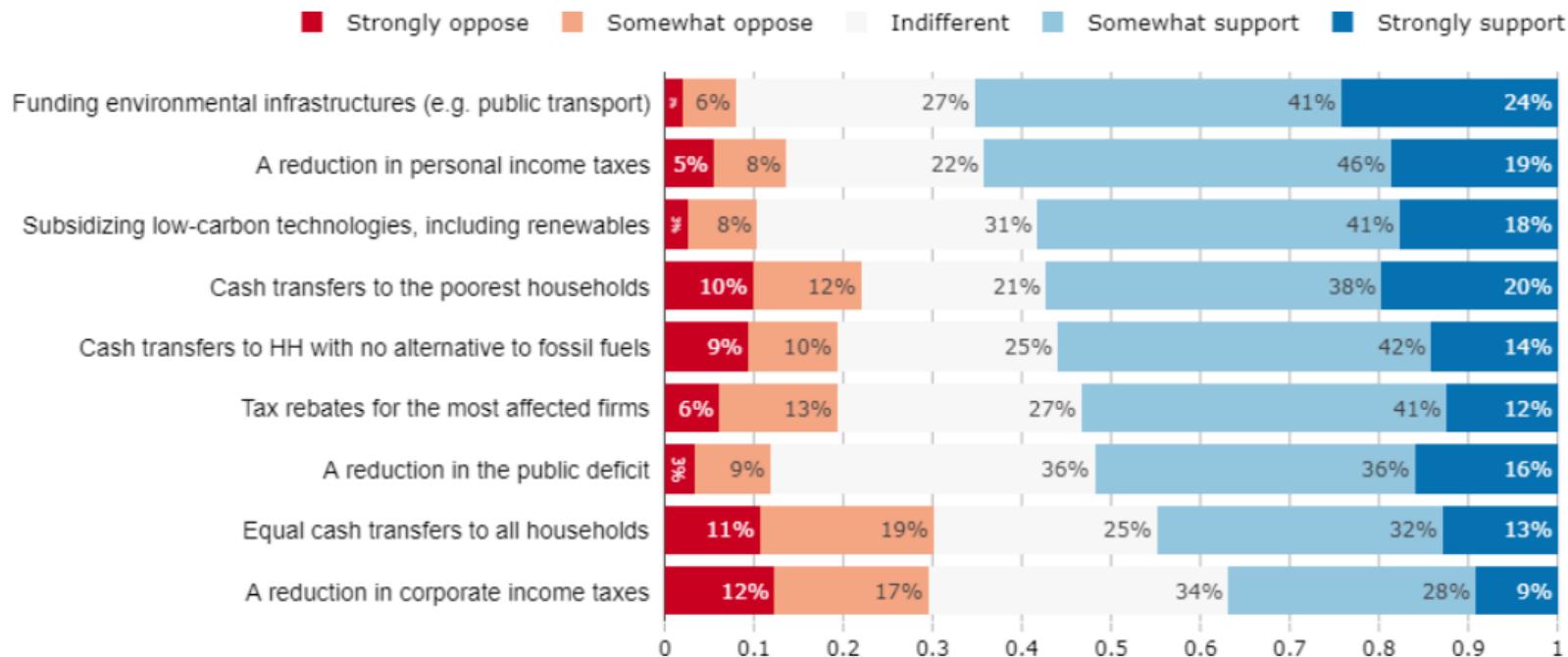
## Danish > French > Americans in terms of other policies support

Average answer on different questions recoded as [-2;+2].



## Carbon tax support higher when benefits are made salient

Governments can use the revenues from carbon taxes in different ways. Would you support or oppose introducing a carbon tax that would raise gasoline prices by 10 centimes par litre, if the government used this revenue to finance...



# French more supportive of carbon tax than DK, US when benefits are salient

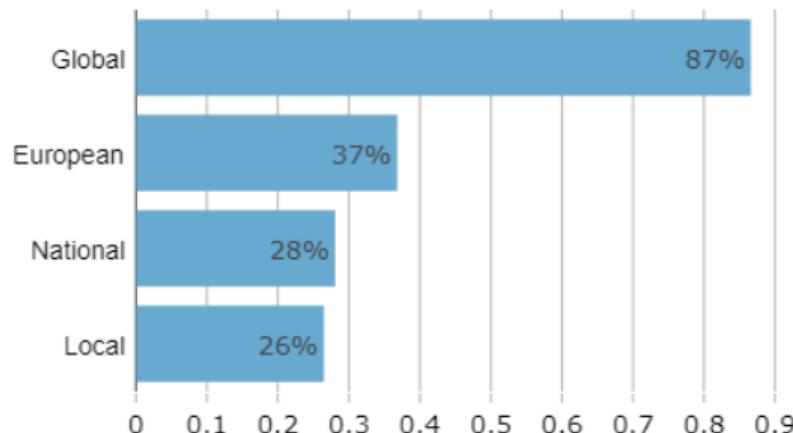
Percentage of somewhat/strongly support for carbon tax depending on revenue use.

	Denmark	France	United States
Tax with cash transfers	32	28	32
Cash for constrained HH	37	56	44
Cash for the poorest	43	57	44
Equal cash for all	27	45	36
Reduction in income tax	39	64	46
Reduction in corporate tax	25	37	29
Tax rebate for affected firms	37	53	38
Funding green infrastructure	60	65	57
Subsidies to low-carbon technos	53	58	54
Reduction in the deficit	34	52	47

# International Burden-Sharing

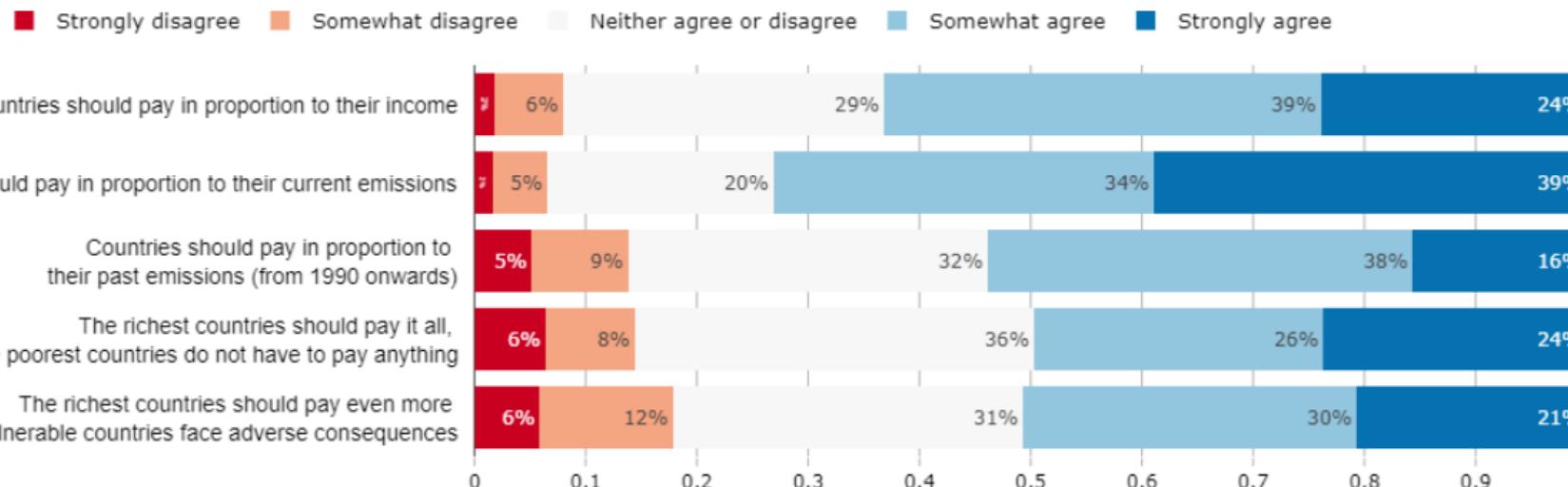
## Quasi-unanimous agreement on need for global policies

At which level(s) do you think public policies to tackle climate change need to be put in place? (Multiple answers are possible)



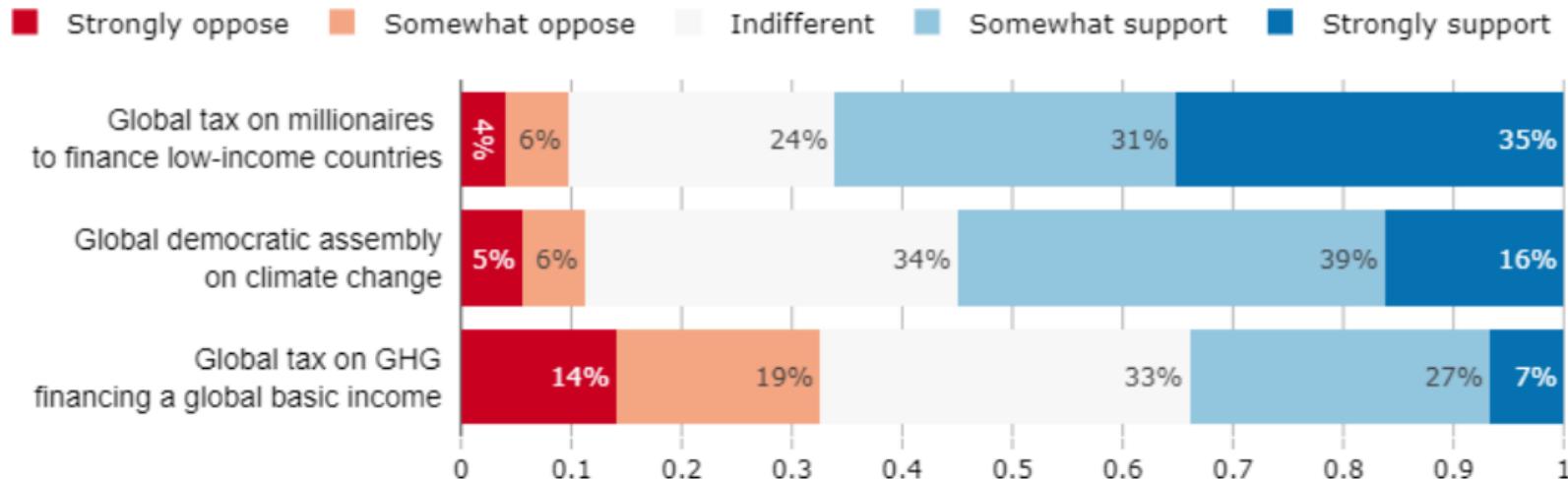
# Large support for international transfers

To achieve a given reduction of greenhouse gas emissions globally, costly investments are needed. Ideally, how should countries bear the costs of fighting climate change?



# Large support for a fairer global order

Do you support or oppose the following policies?



## French people more humanist than Danish and Americans

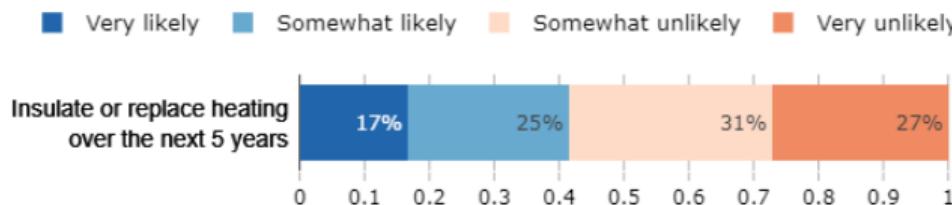
Average answer on different questions recoded as [-2;+2].

	Denmark	France	United States
Level of climate policies needed: global	0.8	0.9	0.7
All countries should pay in proportion to income	0.6	0.8	0.4
All countries should pay in proportion to current emissions	0.6	1	0.8
All countries should pay in proportion to post-1990 emissions	0.1	0.5	0.3
Richest should countries pay it all so poor ones don't pay	-0.4	0.5	-0.3
Richest countries should pay even more to help vulnerable ones	0.2	0.5	0.1
Global democratic assembly on climate change	0.4	0.5	0.3
Global tax on GHG financing a global basic income	0	-0.1	-0.1

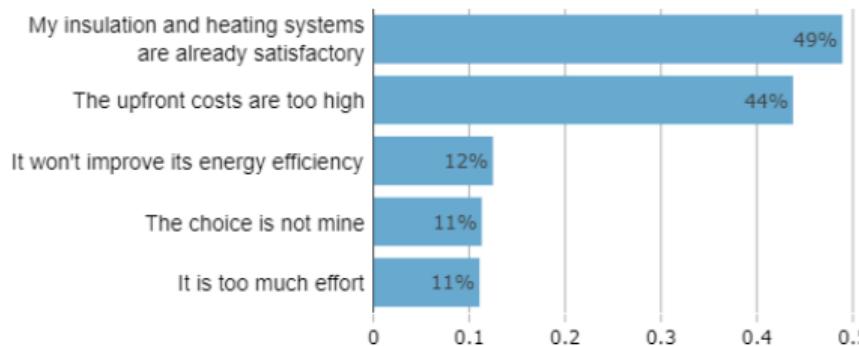
## Housing/Preferences for Bans vs. Incentives

## Many ready to insulate if it is paid for

How likely is it that you will improve the insulation or replace the heating system of your accommodation over the next 5 years?



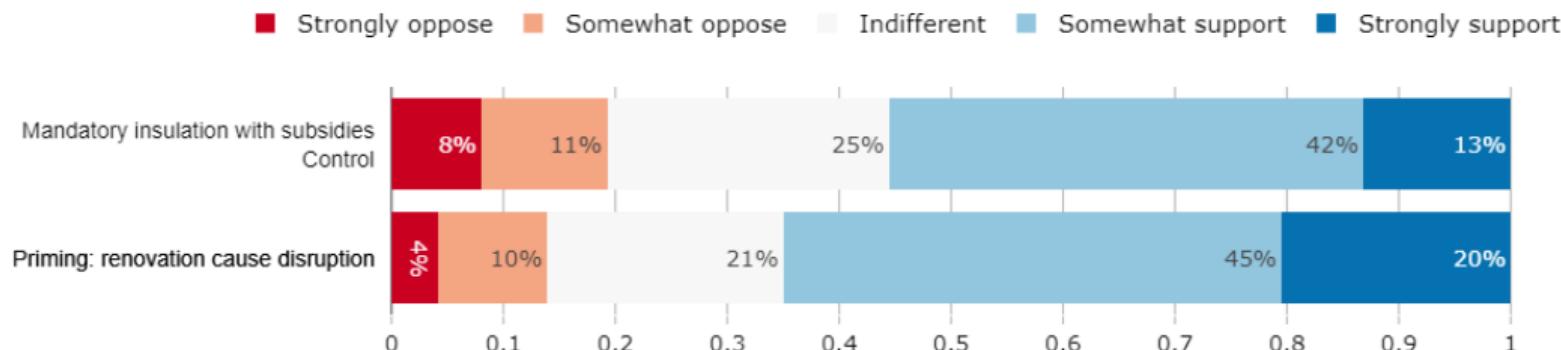
What are the main hurdles preventing you from improving the insulation or replace the heating system of your accommodation? (Multiple answers are possible)



## Large support for mandatory insulation with 50% subsidy

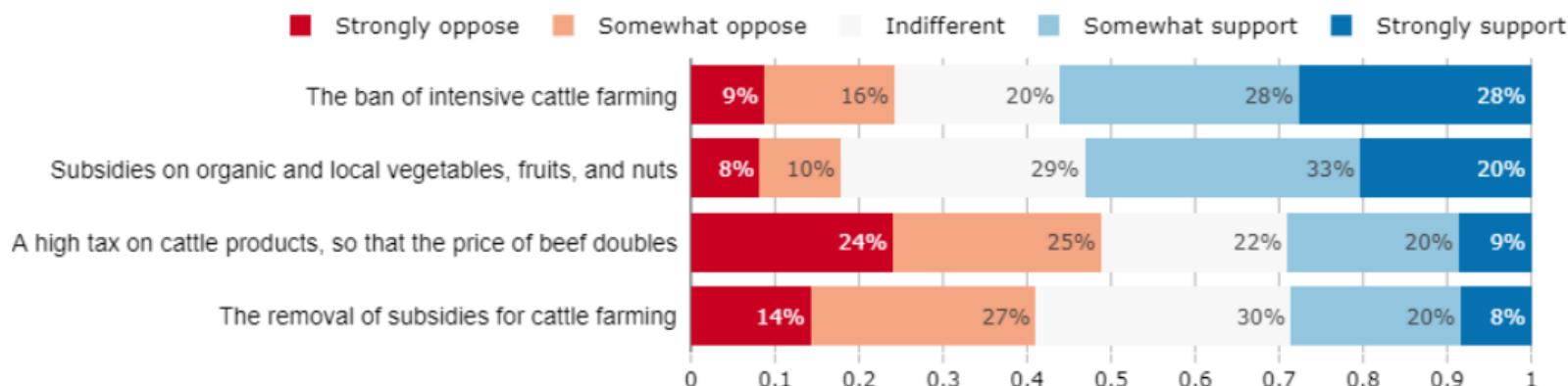
Imagine that the French government makes it mandatory for all residential buildings to have insulation that meets a certain energy efficiency standard before 2040. The government would subsidize half of the insulation costs to help households with the transition.

*Displayed in disruption variant:* [Insulating your home can take long, may cause disruptions to your daily life during the renovation works, and may even require you to leave your home until the renovation is completed.] Do you support or oppose such policy?



# Majority support for ban of intensive farming

Imagine that, in order to fight climate change, the French government decides to limit the consumption of cattle products like beef and dairy. Do you support or oppose the following options?



# Beef restrictions rejected in other Denmark, US

Percentage of positive answers on different questions recoded as [-2;+2].

	Denmark	France	United States
Eats beef at least once a week	66	45	59
Knows that beef has high GHG footprint	86	73	76
Willing to limit beef consumption	34	38	38
Support for tax on cattle products that would double beef price	33	29	33
Support for subsidies on organic and local vegetables, fruits, and nuts	61	53	44
Support for removal of subsidies for cattle farming	33	29	41
Support for ban of intensive cattle farming	31	56	37

# French less willing to pay for climate action than Danes and Americans

Percentage of Yes answers to the WTP question:

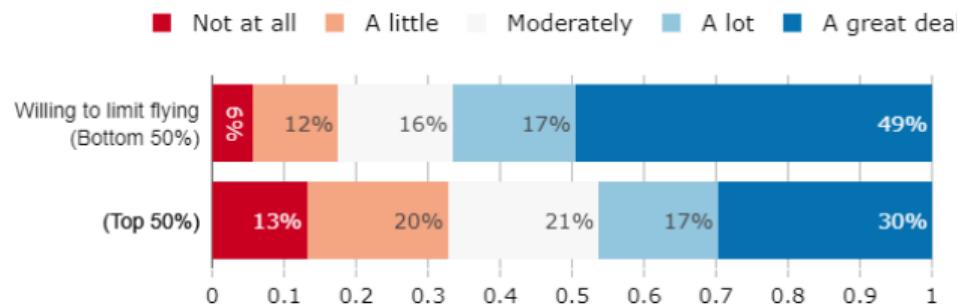
(...) Are you willing to pay [random amount] annually through an additional individual contribution to limit global warming to safe levels (less than 2 °C)?

	Denmark	France	United States
WTP (~ PPP\$/year): 10	82	76	59
WTP (~ PPP\$/year): 30	71	56	65
WTP (~ PPP\$/year): 50	62	63	56
WTP (~ PPP\$/year): 100	72	35	64
WTP (~ PPP\$/year): 300	56	29	48
WTP (~ PPP\$/year): 500	49	36	44
WTP (~ PPP\$/year): 1000	34	31	42

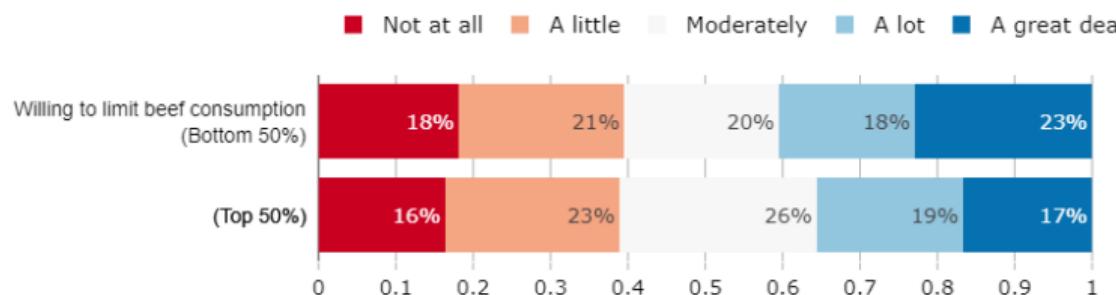
# Heterogeneity Analysis

## Willingness to change behavior

To what extent would you be willing to adopt the following behaviors? -- Limit Flying, by Income

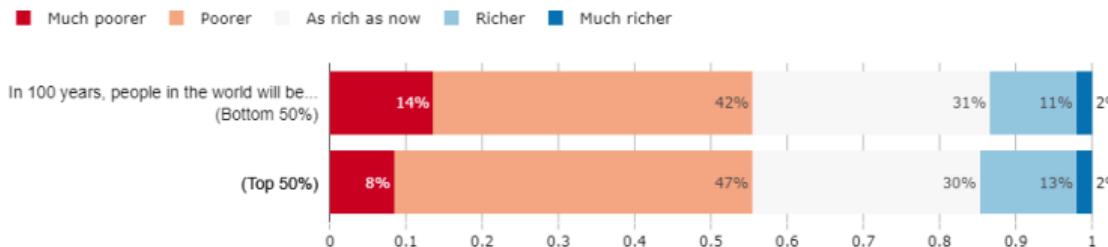


To what extent would you be willing to adopt the following behaviors? – Limit Beef Consumption, by Income

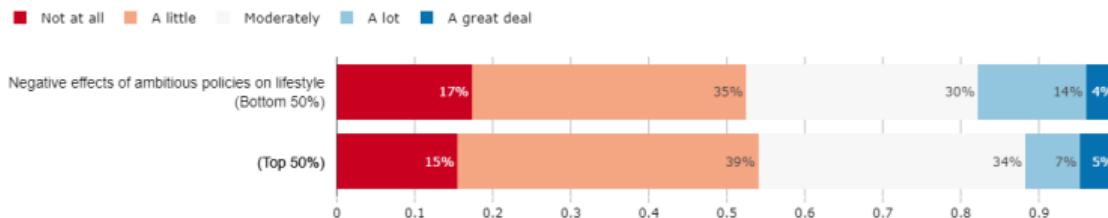


# Perception

Do you think that overall people in the world will be richer or poorer in 100 years from now? -- by Income

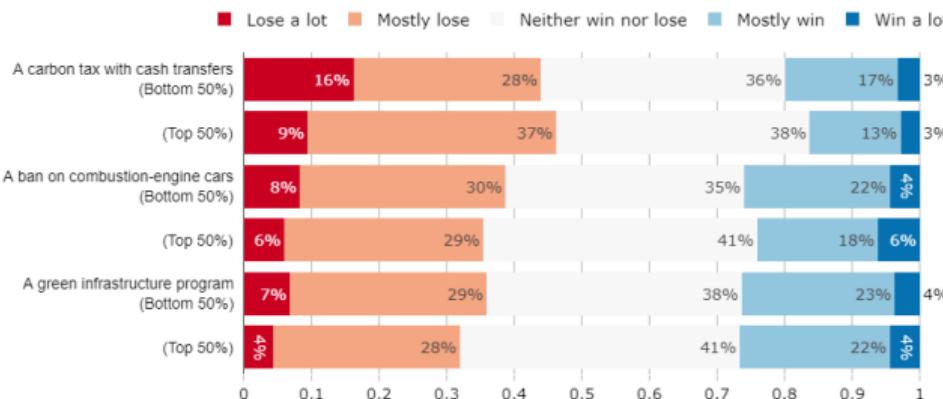


If we decide to halt climate change through ambitious policies, to what extent do you think it would negatively affect your lifestyle? – by Income

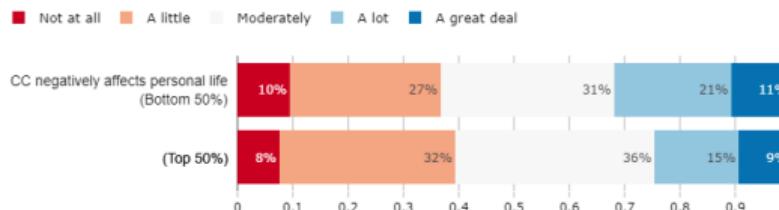


# Effects on own household

Do you think that financially your household would win or lose from the following policy? – by Income

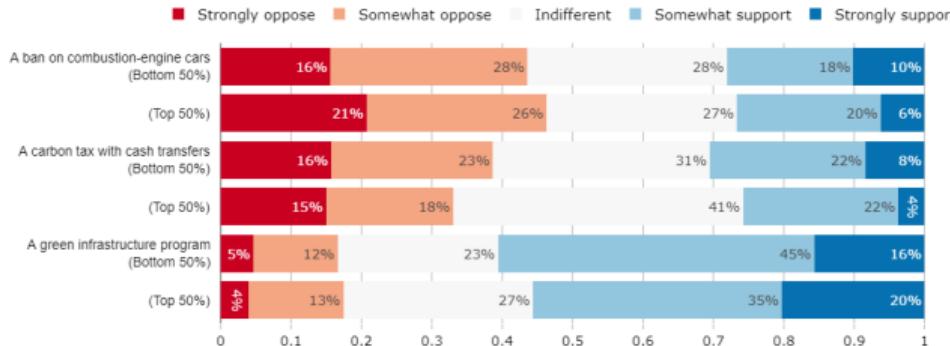


To what extent do you think climate change already affects or will negatively affect your personal life? – by Income

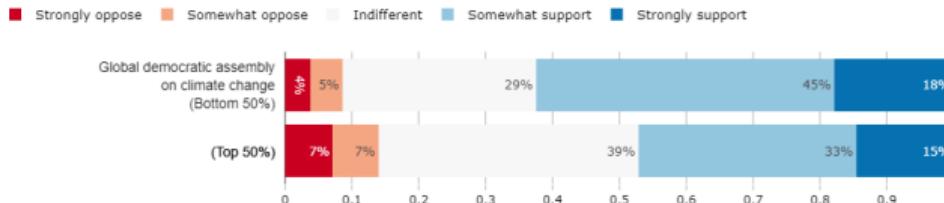


## Policies – support

### Do you support or oppose the following policy? – by Income

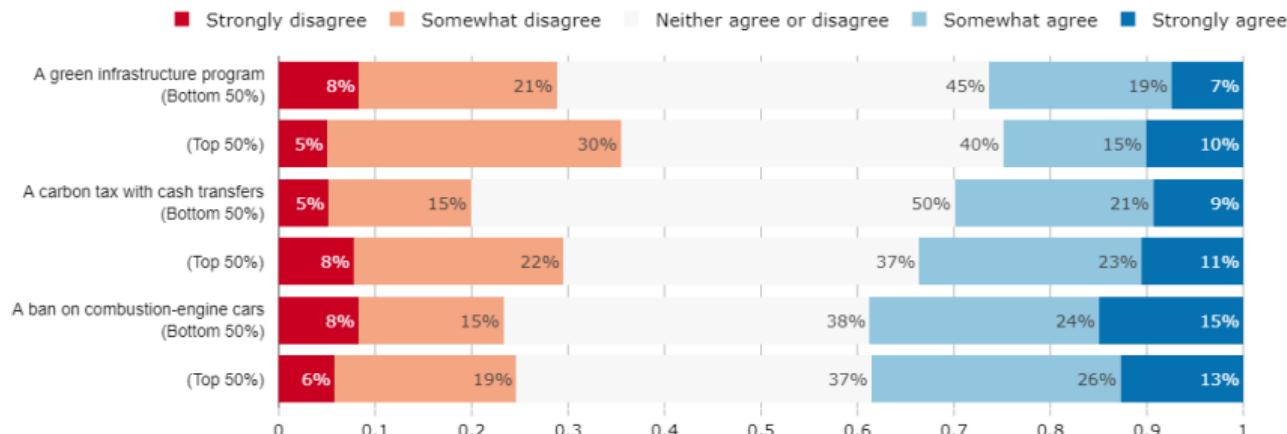


Do you support or oppose establishing a global democratic assembly whose role would be to draft international treaties against climate change? Each adult across the world would have one vote to elect members of the assembly. – by Income

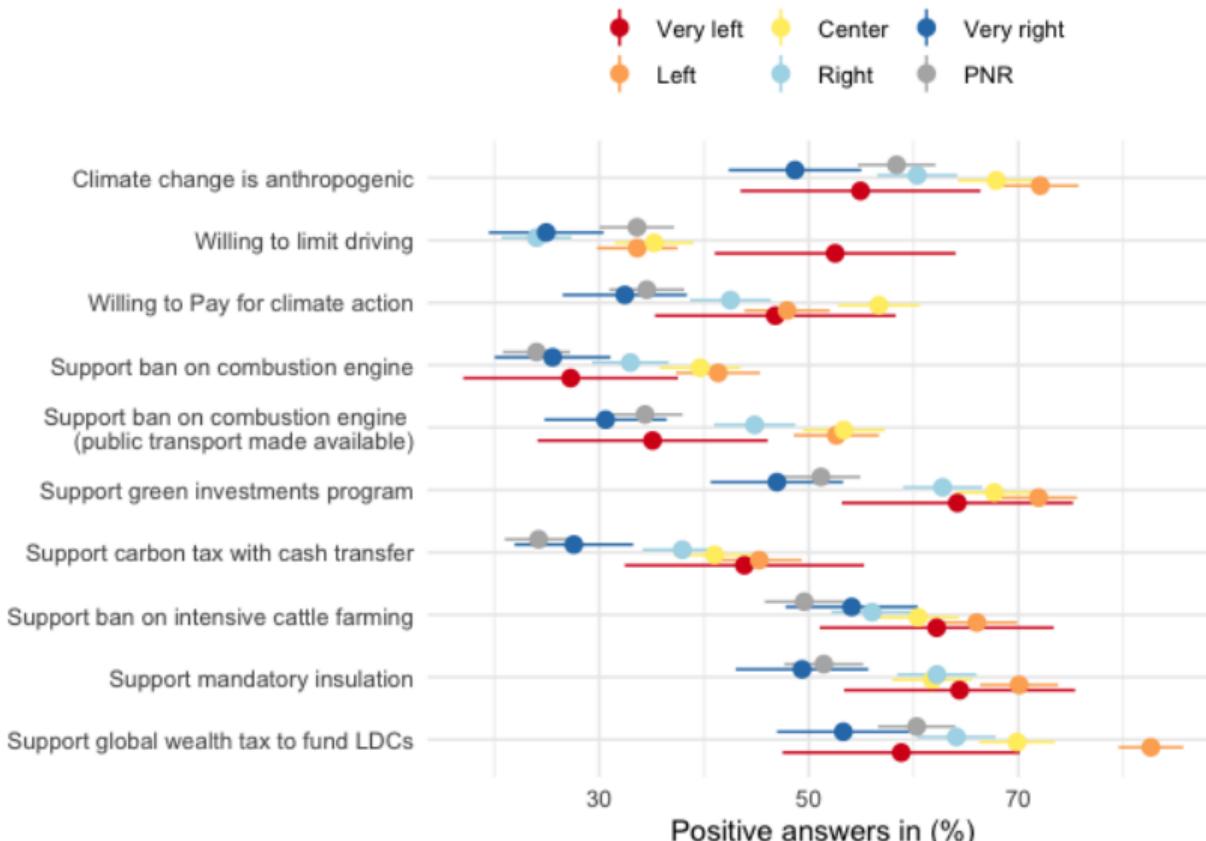


## Policies – negative effects

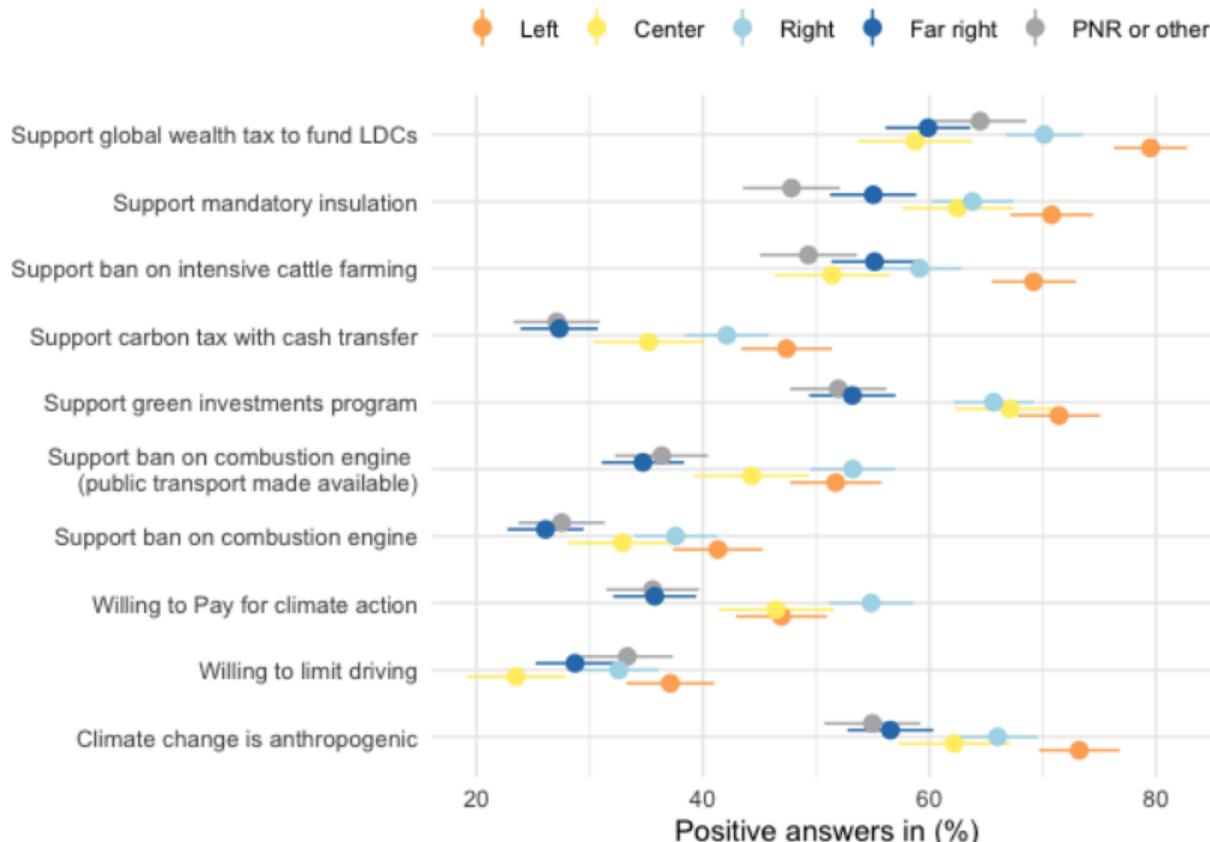
Do you agree or disagree with the following statement? This policy would have a negative effect on the French economy and employment – by Income



## % of positive responses by political affiliation



## % of positive responses by vote



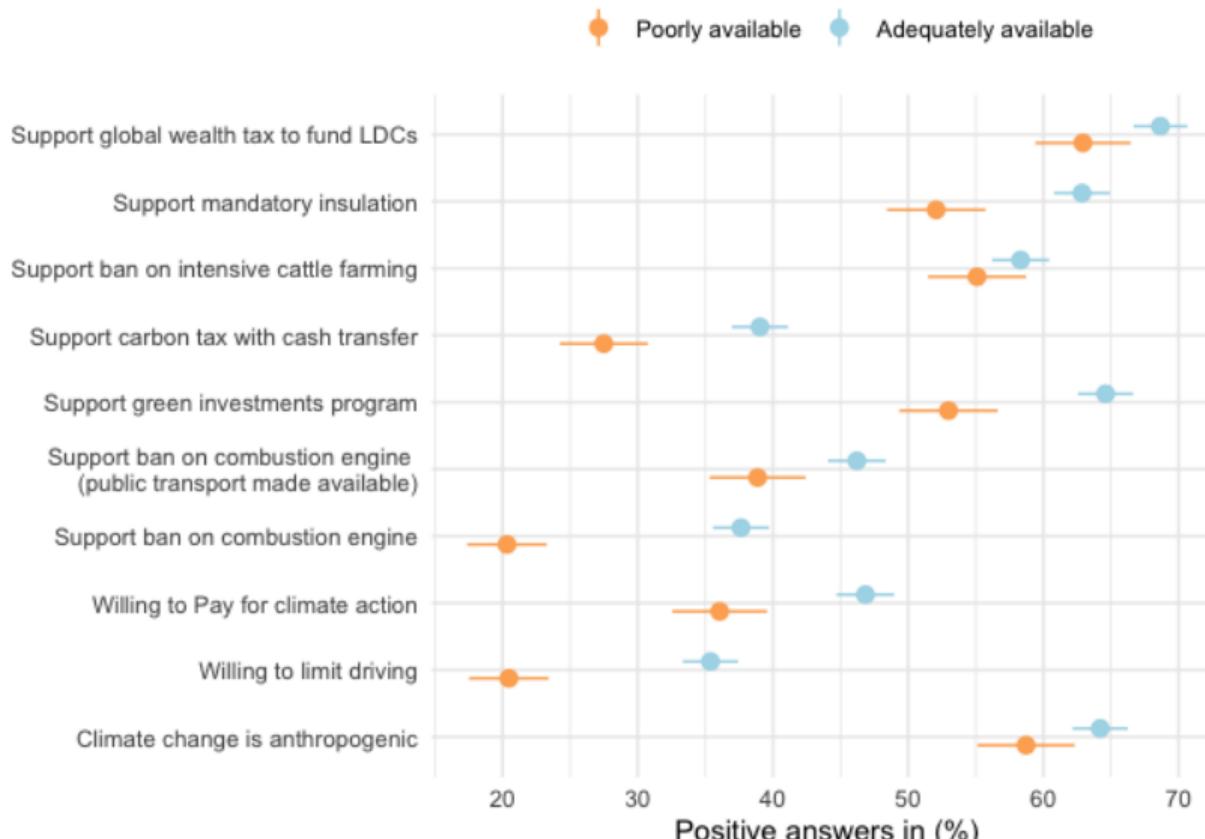
## % of positive responses by urban category



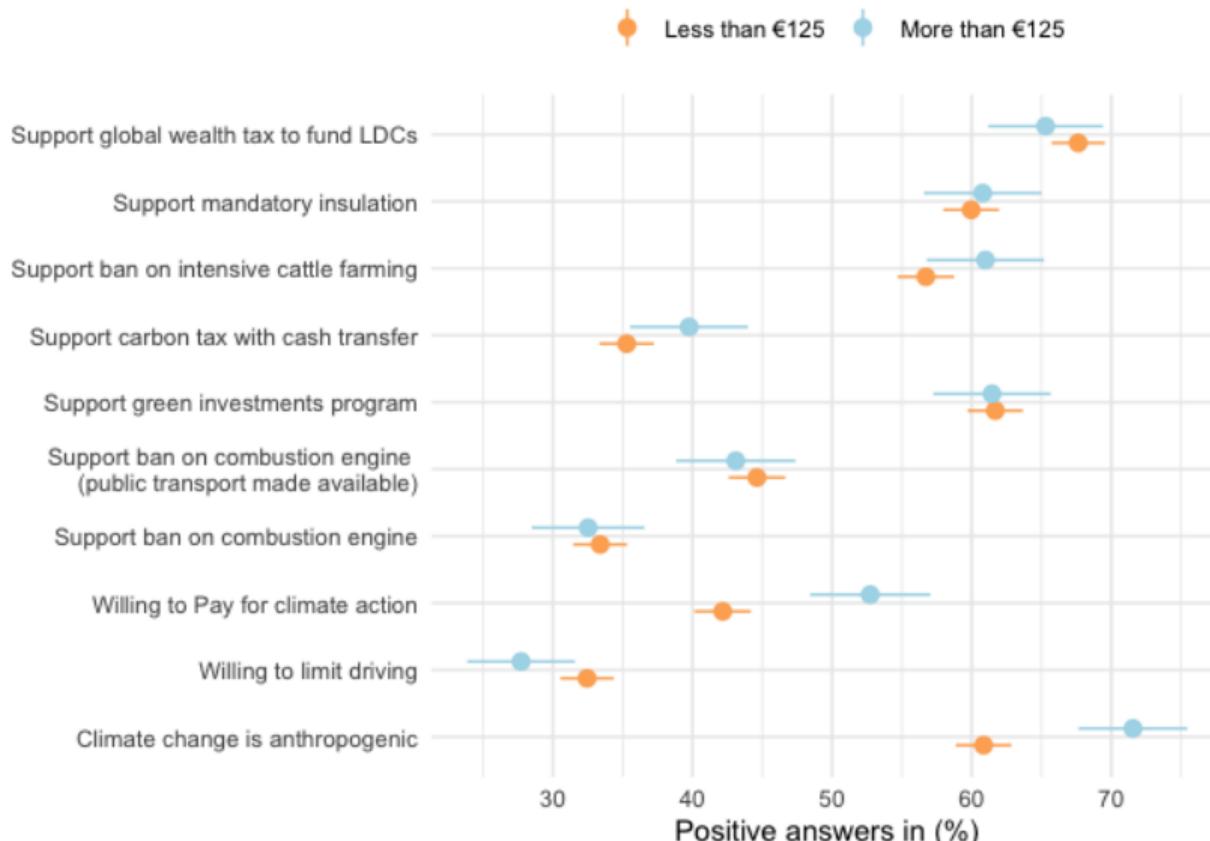
## % of positive responses by working sector



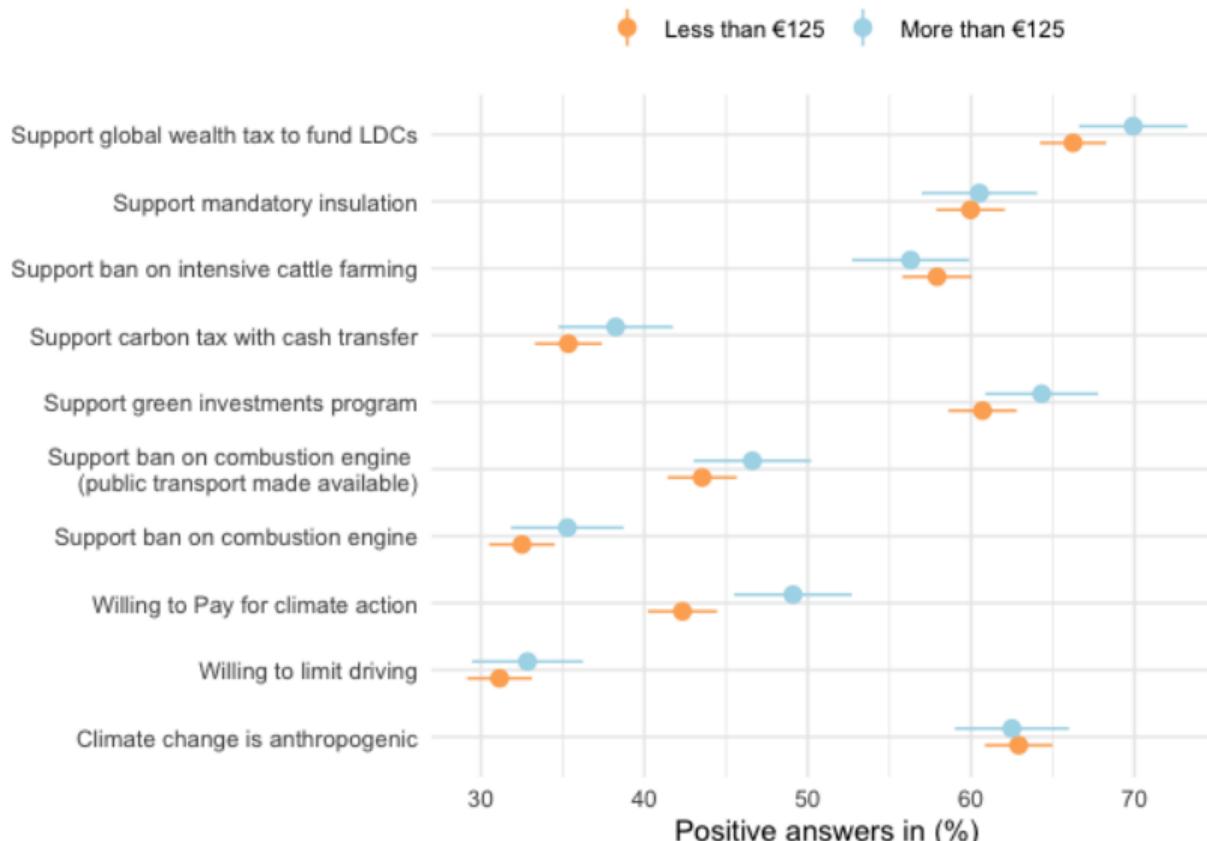
## % of positive responses by availability of public transport



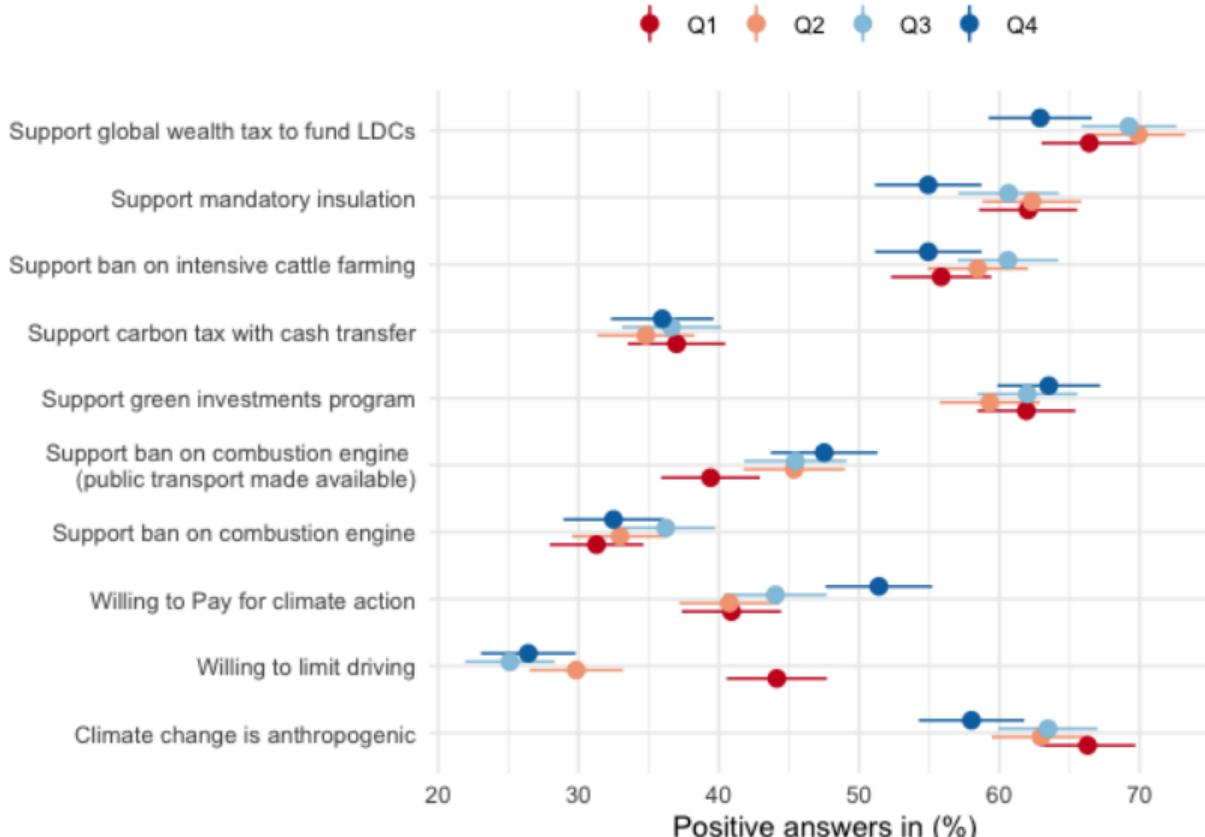
## % of positive responses by gas expenses



## % of positive responses by heating expenses



## % of positive responses by income



# Treatment Effects

**Table 1:** Attitudes towards Climate Change

	CC caused by humans	CC likely to cause extinction	Donation (in % of max)	FR should fight CC	Willing to limit driving
Control group mean	0.567	0.587	24.924	0.778	0.321
Treatment: Climate	0.096*** (0.029)	-0.034 (0.031)	2.490 (1.694)	0.006 (0.026)	-0.020 (0.029)
Treatment: Policy	0.037 (0.028)	-0.055* (0.030)	-0.561 (1.644)	-0.036 (0.025)	-0.030 (0.028)
Treatment: Both	0.052* (0.029)	-0.021 (0.031)	-1.632 (1.666)	-0.013 (0.026)	0.013 (0.028)
Observations	1,985	1,988	1,988	1,988	1,988

Note: The *CC caused by humans* indicator variable equals one if the respondent thinks a lot or most of climate change is due to human actions. The *CC likely to cause extinction* indicator variable equals one if the respondent thinks climate change is somewhat likely or very likely to cause the extinction of humankind if nothing is done to limit it. The *Donation* variable is a continuous variable equal to the amount the respondent is willing to give to a charity. The *Ambitious policies needed* indicator variable equals one if the respondent thinks policy must be a lot or a great deal ambitious in order to halt climate change. The *Willing to limit driving* indicator variable equals one if the respondent is willing a lot or a great deal to limit driving. The three *treatment* indicator variables indicate difference in mean compared to the control group (people who did not see any video). Controls include socio-demographic, economic affiliation, last vote and whether the respondent's household was hit by the COVID-19 pandemic. Standard errors are in parentheses. \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

**Table 2:** Support for policies

	Support			
	Carbon tax with transfers	Green Infrastructure Program	Ban on combustion-engine cars	Average over 3 policies
Control group mean	0.282	0.582	0.274	0.444
Treatment: Climate	0.061** (0.030)	0.037 (0.030)	0.032 (0.029)	0.035 (0.031)
Treatment: Policy	0.079*** (0.029)	0.033 (0.029)	0.061** (0.028)	0.051* (0.030)
Treatment: Both	0.146*** (0.029)	0.037 (0.030)	0.100*** (0.029)	0.099*** (0.030)
Observations	1,988	1,988	1,988	1,988

Note: The dependent variables are indicator variables equal to one if the respondent ‘Strongly supports’ or “Somewhat supports” the policy. The *Average over 3 policies* takes the average of the respondent’s answers for the three policies. It equals one if the respondent support all three policies, 2/3 if she supports two, 1/3 if she support only one, and 0 if she supports none. See notes under previous Table for a description of the covariates.

Controls include socio-demographic, economic affiliation, last vote and whether the respondent’s household was hit by the COVID-19 pandemic. Standard errors are in parentheses. \* $p<0.1$ ; \*\* $p<0.05$ ; \*\*\* $p<0.01$

Table 3: Attitudes towards policies

	Fair	HH would win	Poor would win	Large economic effect	Negative economic effect
Control group mean	0.443	0.297	0.182	0.596	0.4
Treatment: Climate	0.009 (0.031)	0.021 (0.030)	0.003 (0.026)	0.004 (0.031)	0.015 (0.031)
Treatment: Policy	0.014 (0.030)	0.035 (0.029)	0.080*** (0.026)	0.022 (0.030)	0.029 (0.030)
Treatment: Both	0.068** (0.031)	0.067** (0.030)	0.117*** (0.026)	0.063** (0.030)	0.040 (0.030)
Observations	1,988	1,870	1,969	1,988	1,988

Note: The dependent variables are discrete variables equal either to 0, 1/3, 2/3, or 1. They are equal to the average over the three policies mentioned in Table “Support policies”. The *Fair* variable equals one if the respondent strongly agrees or somewhat agrees that each of the three policies are fair. The *HH/Poor would win* variables equal one if the respondent thinks her household/the poorest would win a lot or mostly win from the three policies. The *Large/Negative economic effect* variables equal one if the respondent strongly agrees or somewhat agrees that the three policies would have a large/negative impact on the French economy and employment.

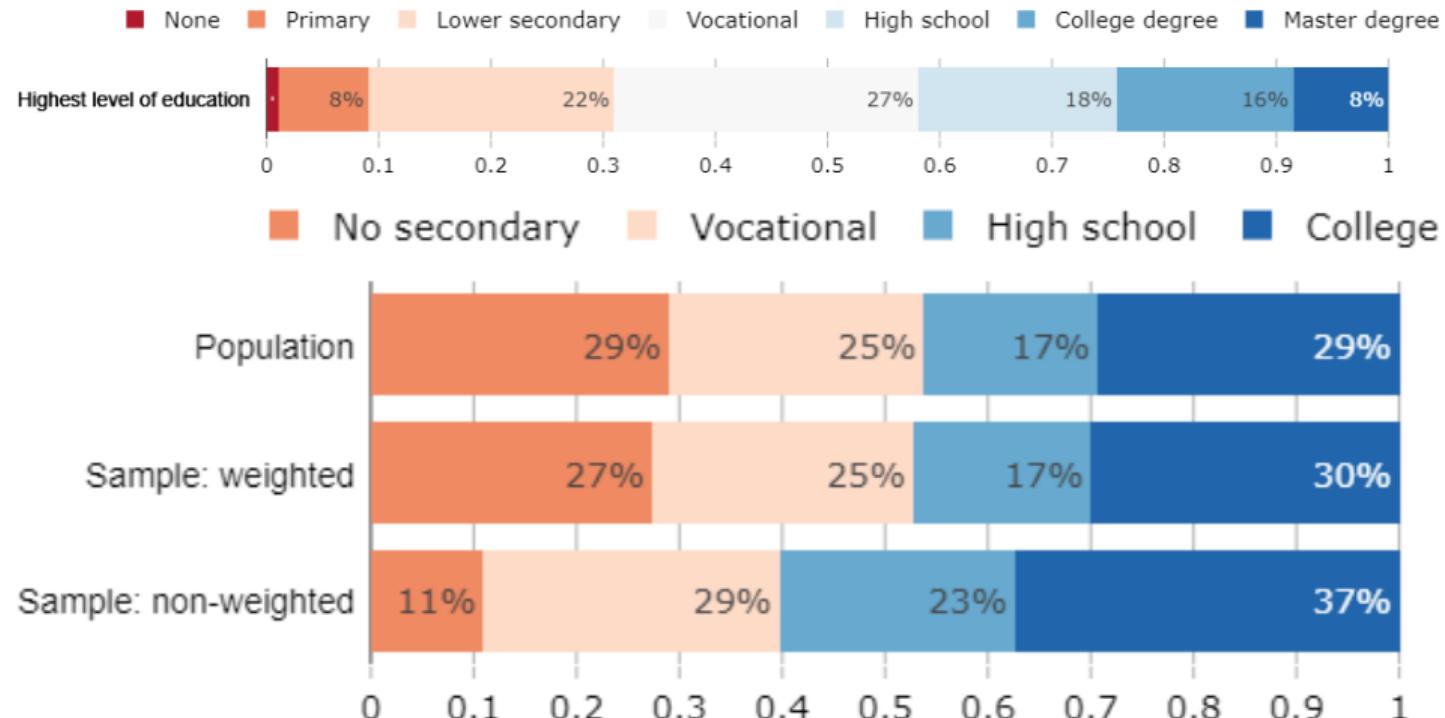
Controls include socio-demographic, economic affiliation, last vote and whether the respondent’s household was hit by the COVID-19 pandemic. Standard errors are in parentheses. \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

# Appendix

# Socio-Demographics

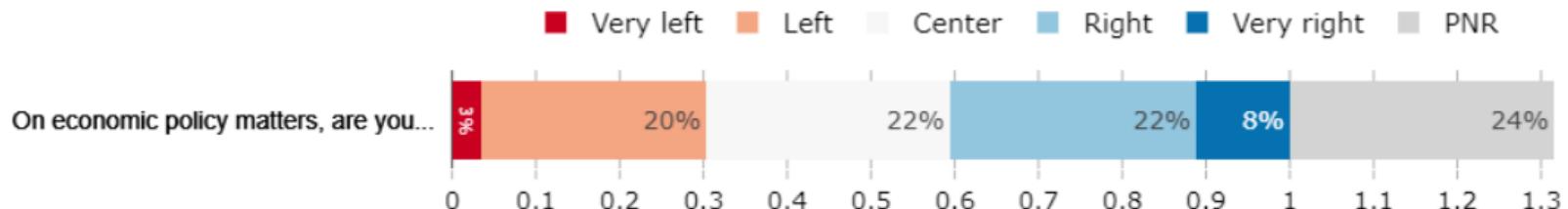
# Education

What is the highest level of education you have completed?



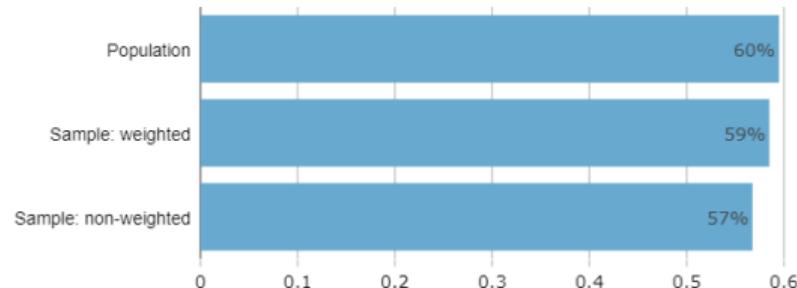
# Political affiliation

On economic policy matters, where do you see yourself on the liberal/conservative spectrum?



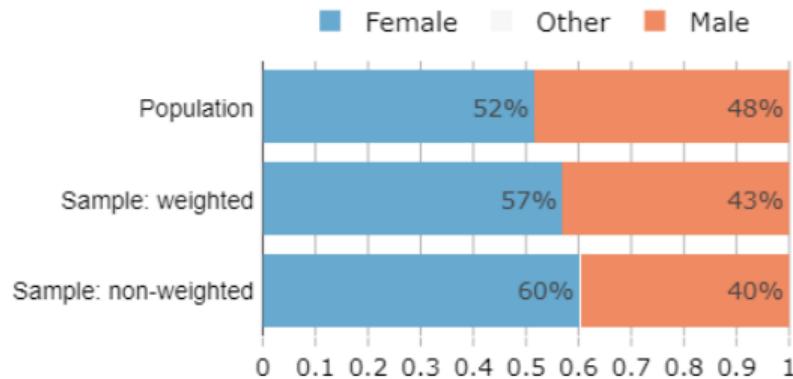
# Geography

Lives in an urban area (town > 20k people), retrieved from zipcode

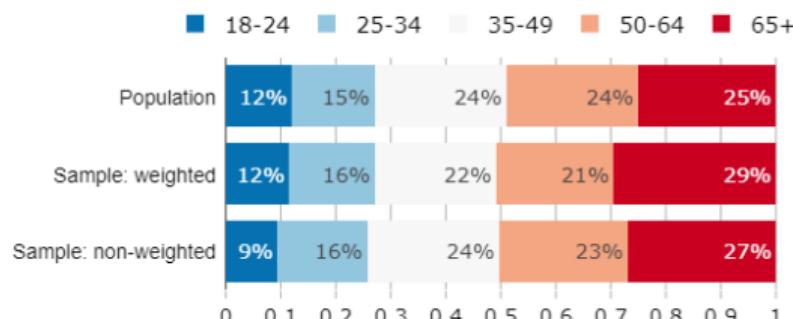


# Gender and age

What is your gender?



How old are you?

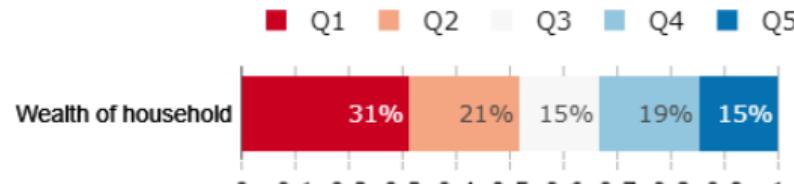


## Income/wealth

What was the annual income of your household in 2019 (before withholding tax, for you and those who live with you)?



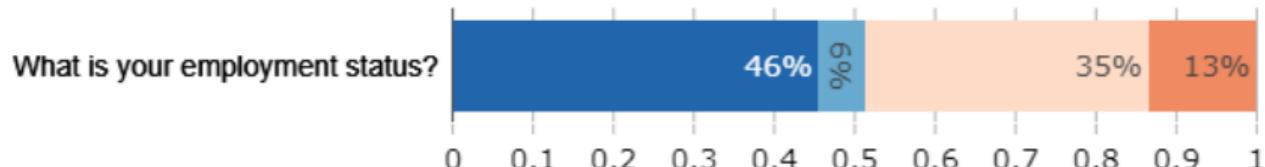
What is the estimated value of your assets, or the assets of your household if you are married (in French dollars)? Include here all your possessions (home, car, savings, etc.) net of debt. For example, if you own a house worth \$300,000 and you have \$100,000 left to repay on your mortgage, your assets are \$200,000.



# Employment and hit by covid

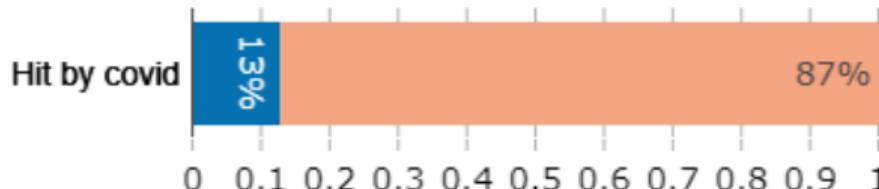
What is your employment status?

■ Working ■ Student ■ Retired ■ Not working



Have you or a member of your household been laid off or had to take a cut in your salary or wages due to the COVID-19 pandemic?

■ Yes ■ No

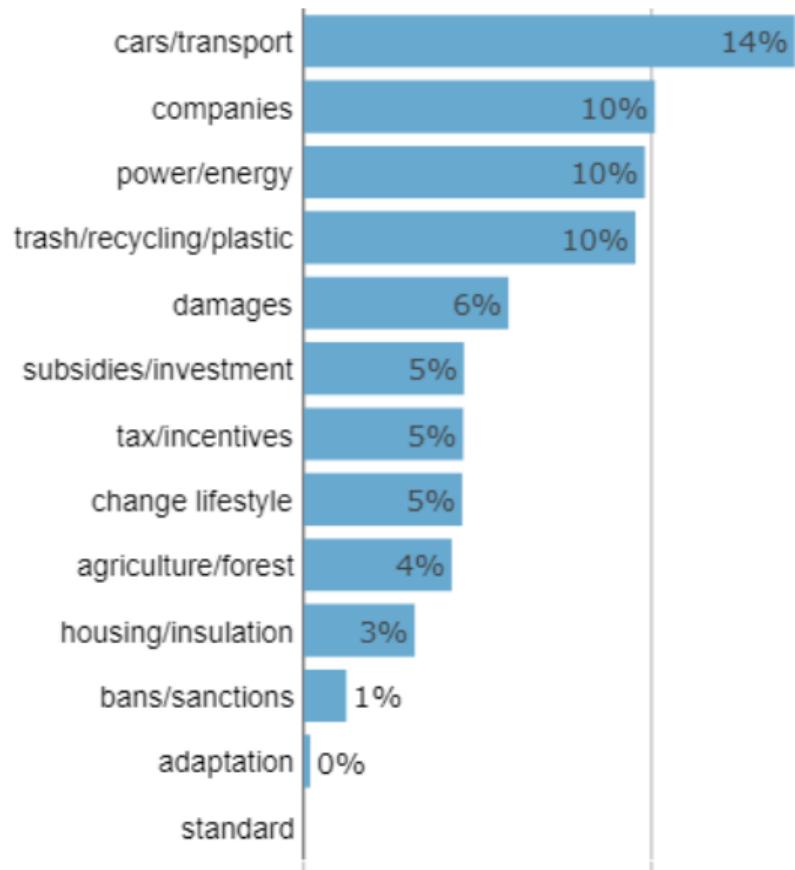


# Essay

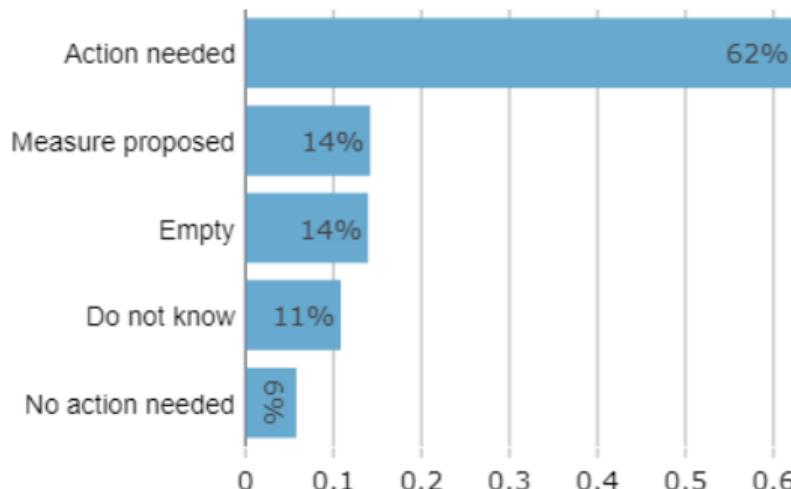
Word cloud – When thinking about climate change, what are your main considerations? What should the French government do regarding climate change? Please write as much as you would like, your response will be very useful.



## Elements present in the open field (manually recoded).



## Summary of elements present in the open field.



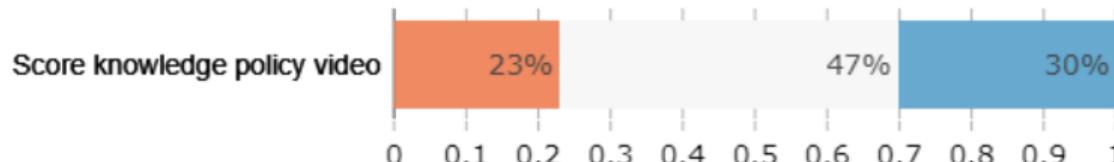
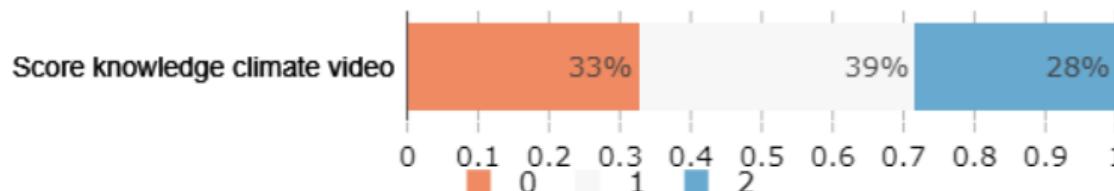
# Treatments

## Watched climate and/or policy videos attentively

Number of wrong answers when answering two knowledge questions about the content of the videos

- What will be the rise in global average temperature in 2100 if greenhouse gas emissions continue on their current trend?
- In the absence of ambitious action against climate change, how frequent will extreme temperatures occur across the French by the end of the century?
- What is the emission limit described in the video?
- How would a green infrastructure program be financed?

■ 0 ■ 1 ■ 2



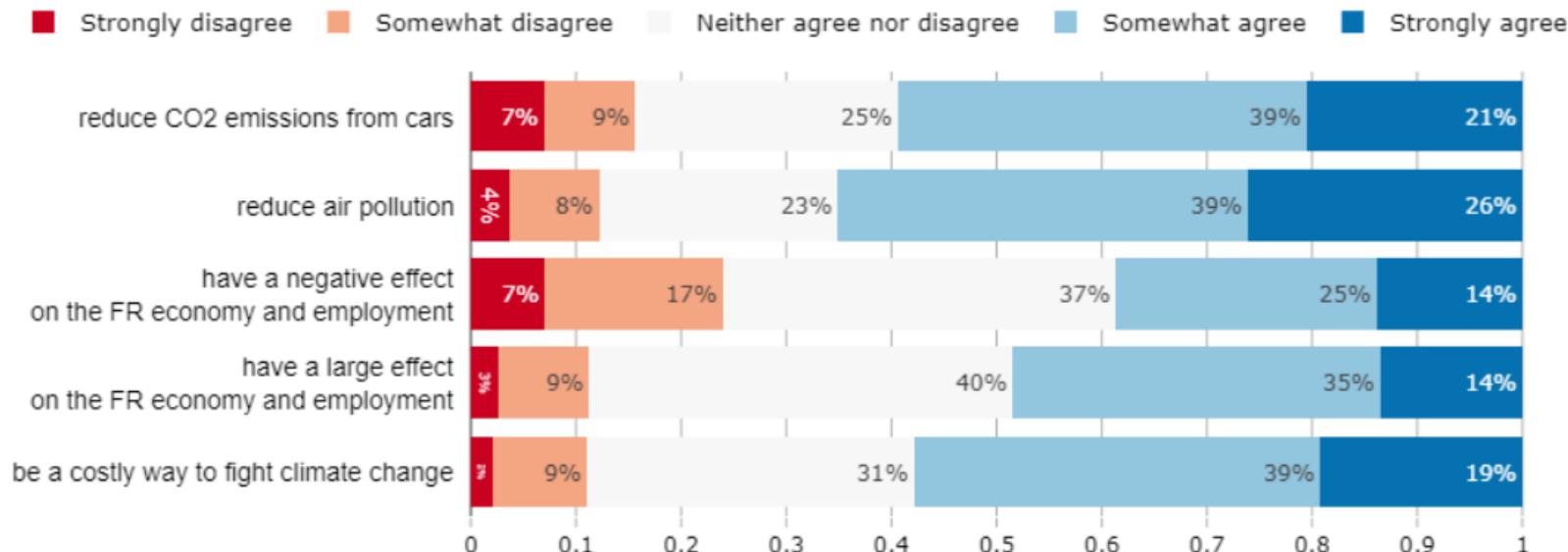
## Policy 1: A ban on combustion-engine Cars

## Policy description

To fight climate change, car producers can be required by law to produce cars that emit less CO<sub>2</sub> per mile of the cars they sell. The emission limit is lowered every year so that only electric or hydrogen vehicles can be sold after 2030. This policy is called a *ban on combustion-engine cars*.

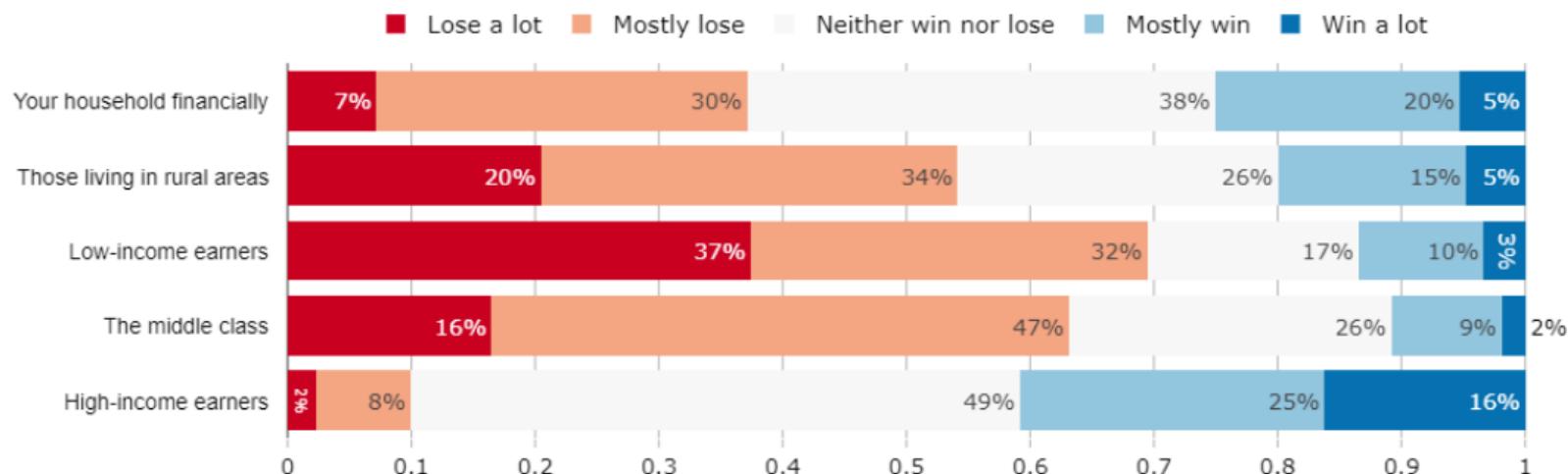
# Effects of the policy

Do you agree or disagree with the following statements? A ban on combustion-engine cars would...



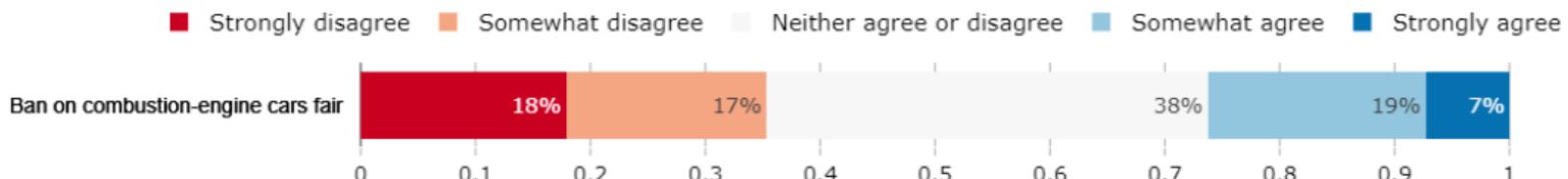
# Incidence

In your view, would the following groups win or lose if a ban on combustion-engine cars was implemented in France?

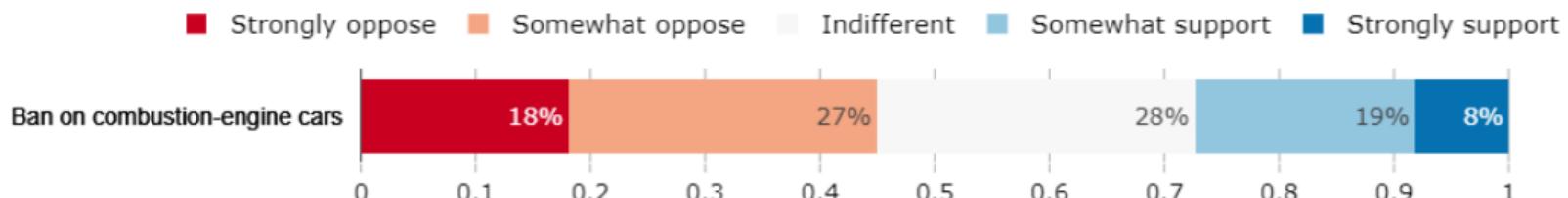


# Fairness and support

Do you agree or disagree with the following statement: "A ban on combustion-engine cars is fair"?

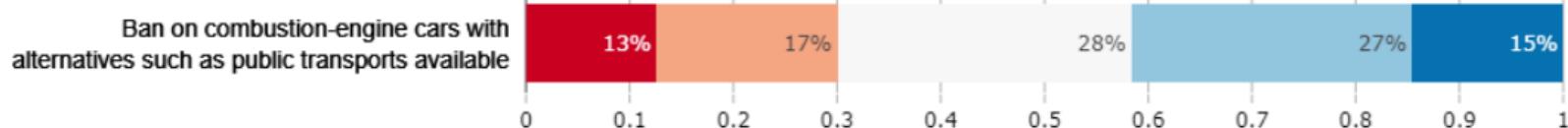


Do you support or oppose a ban on combustion-engine cars?



Do you support or oppose a ban on combustion-engine cars where alternatives such as public transports are made available to people?

■ Strongly oppose ■ Somewhat oppose ■ Indifferent ■ Somewhat support ■ Strongly support



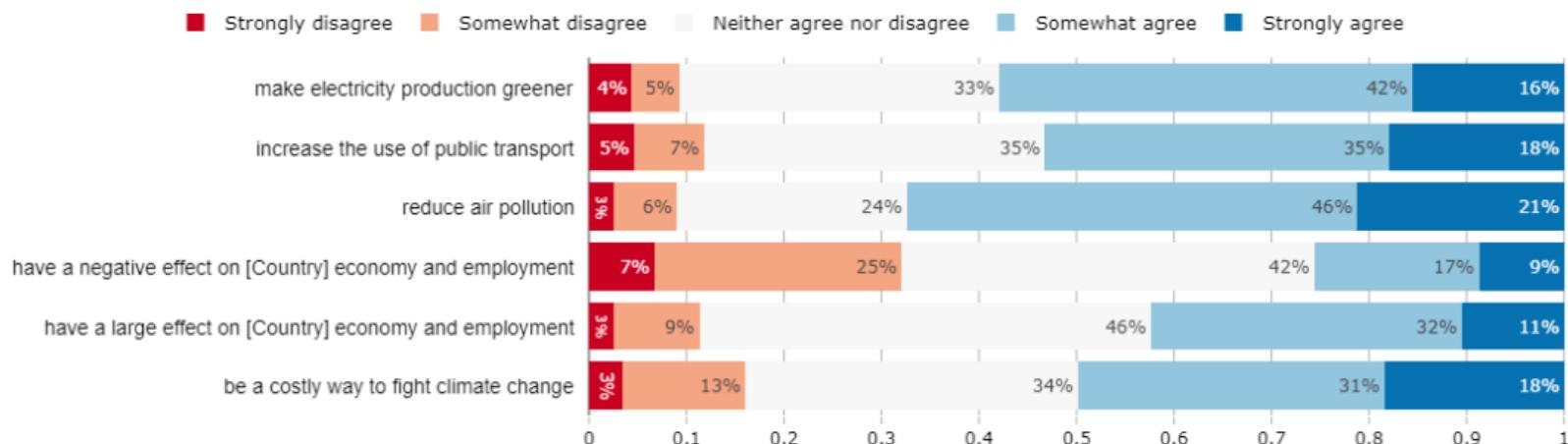
## Policy 2: Green Infrastructure Program

## **Policy description**

A green infrastructure program is a large public investment program, which would be financed by additional public debt, to accomplish the transition needed to cut greenhouse gases emissions. Investments would concern renewable power plants, public transportation, thermal renovation of building, and sustainable agriculture.

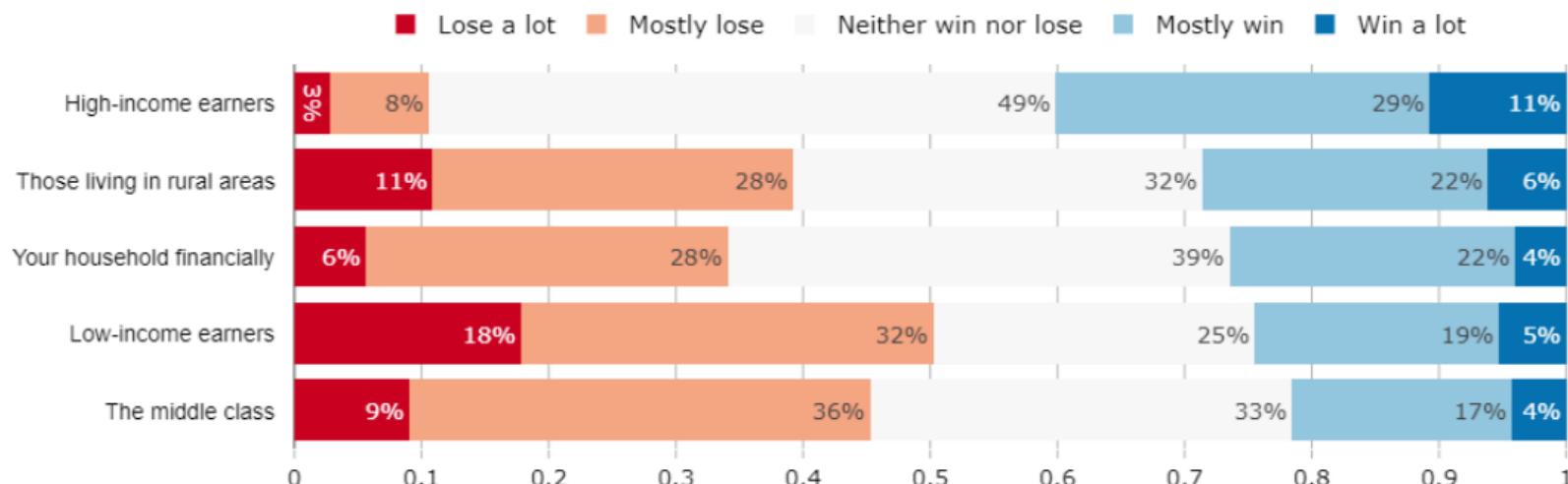
# Effects of the policy

Do you agree or disagree with the following statements? A green infrastructure program would...



# Incidence

In your view, would the following groups win or lose with a green infrastructure program?

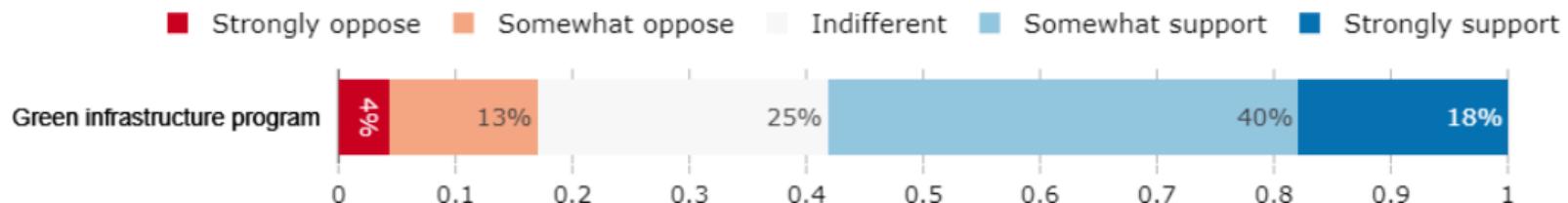


# Fairness and support

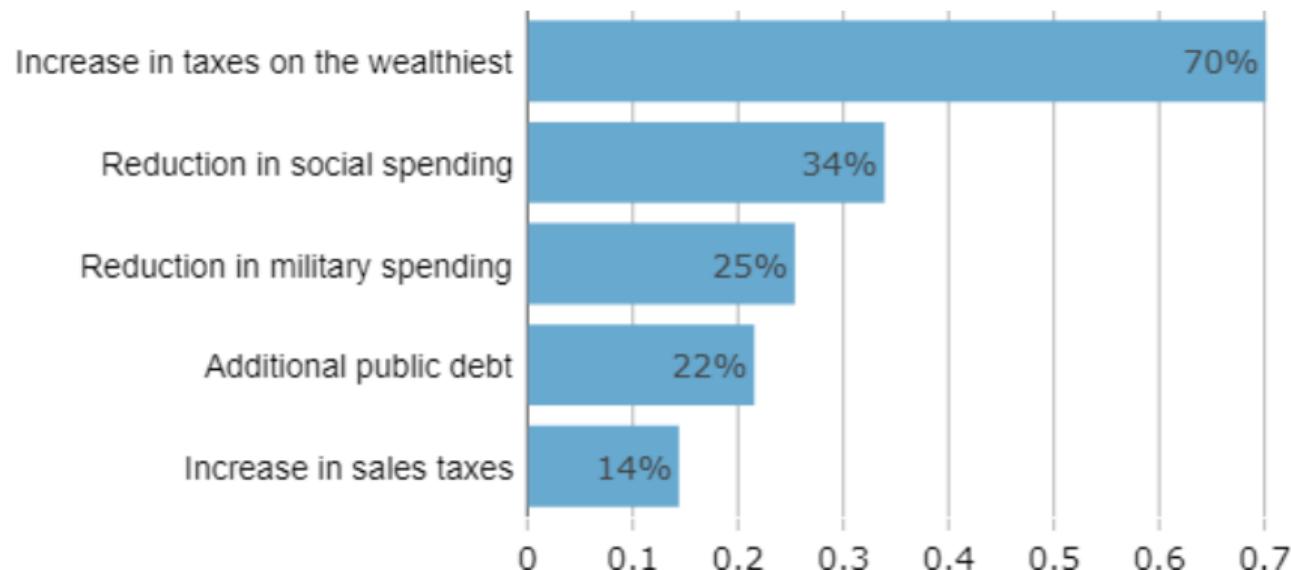
Do you agree or disagree with the following statement: "A green infrastructure program mainly financed by public debt is fair."



Do you support or oppose a green infrastructure program?



Until now, we have considered that a green infrastructure program would be financed by public debt, but other sources of funding are possible. What sources of funding do you find appropriate for a green infrastructure program? (Multiple answers are possible)



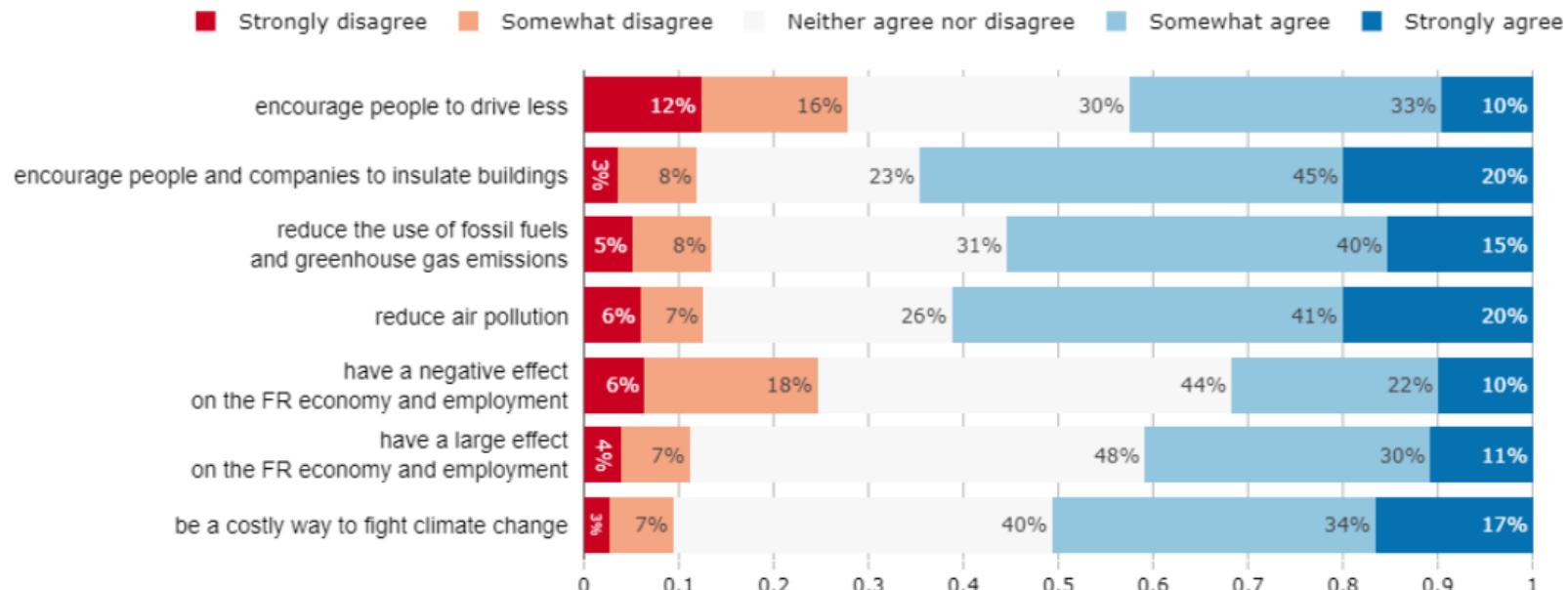
## Policy 3: Carbon Tax with Cash Transfers

## Policy description

To fight climate change, the French government can make greenhouse gas emissions costly, to make people and firms change their equipment and reduce their emissions. The government could do this through a policy called a carbon tax with cash transfers. Under such a policy, the government would tax all products that emit greenhouse gas. For example, the price of gasoline would increase by 10 cents per liter. To compensate households for the price increases, the revenues from the carbon tax would be redistributed to all households, regardless of their income. Each adult would thus receive 160€ per year.

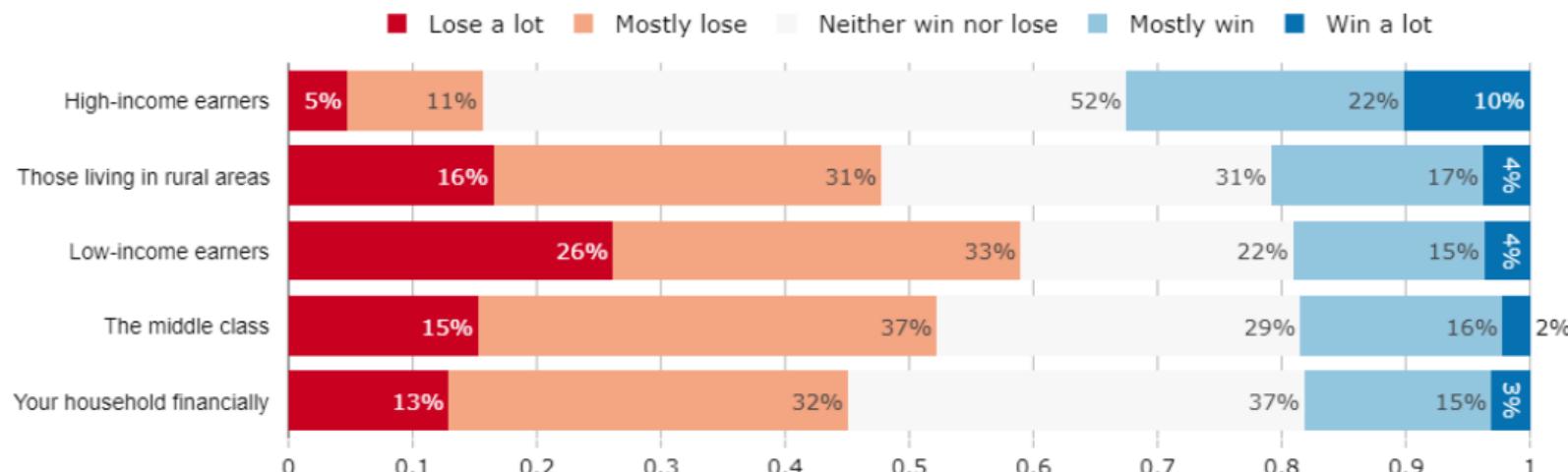
# Effects of the policy

Do you agree or disagree with the following statements? A carbon tax with cash transfers would...



# Incidence

In your view, would the following groups win or lose under a carbon tax with cash transfers?



# Fairness and support

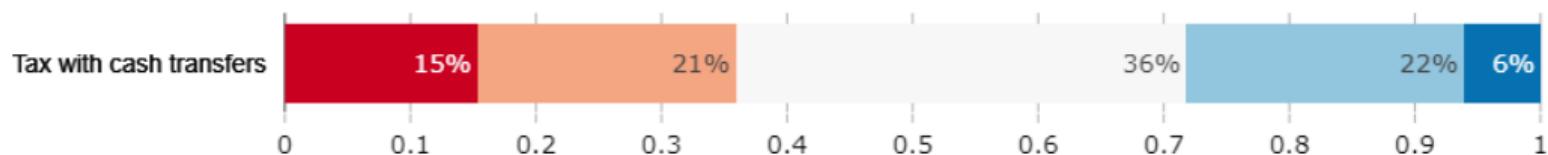
Do you agree or disagree with the following statement: "A carbon tax with cash transfers is fair."

- Strongly disagree ■ Somewhat disagree ■ Neither agree or disagree ■ Somewhat agree ■ Strongly agree



Do you support or oppose a carbon tax with cash transfers?

- Strongly oppose ■ Somewhat oppose ■ Indifferent ■ Somewhat support ■ Strongly support



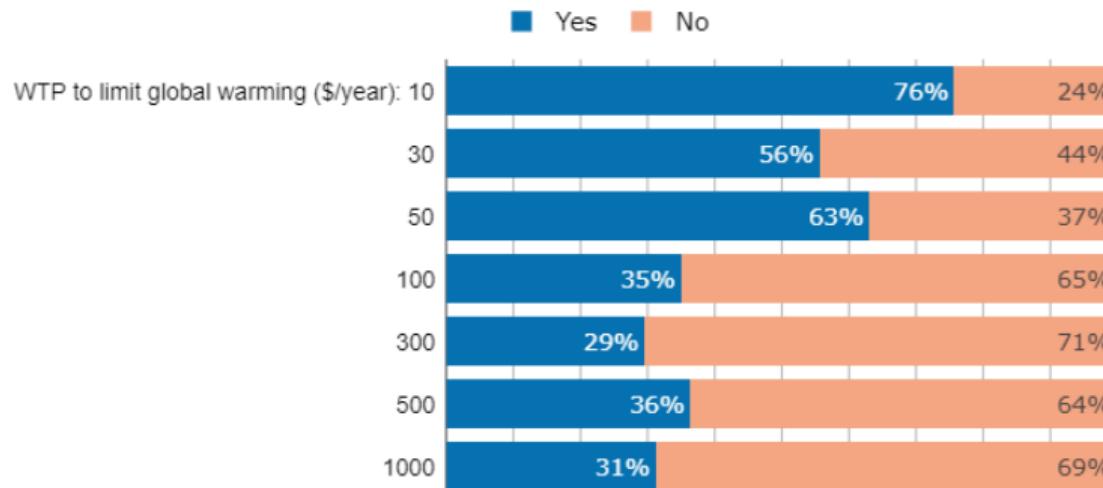
# Willingness to Pay

## WTP

To fight global warming, the French government could implement a policy package to reduce emissions, for example by investing in clean technologies (renewable energy, electric vehicles, public transport, more efficient insulation, etc.).

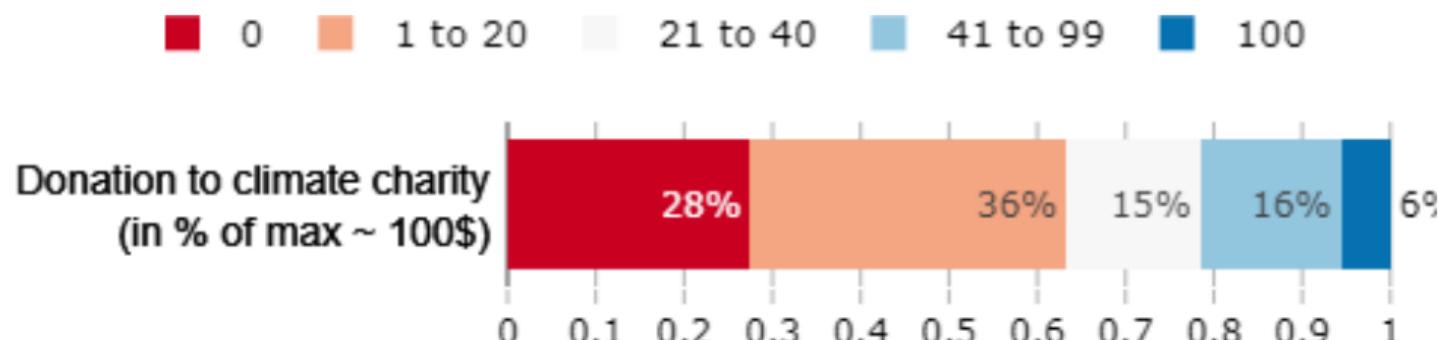
The funding for these investments could be collected annually through an additional individual contribution for the foreseeable future. Assume that everyone in France as well as citizens of other countries would be required to contribute according to their means.

Are you willing to pay [amount] annually through an additional individual contribution to limit global warming to safe levels (less than 2 °C)?



## Donation

By taking this survey, you are entered into a lottery to win 100€. You can also donate a part of this additional compensation (should you be selected in the lottery) to a reforestation project through the charity The Gold Standard. If you win the 100€ lottery, how much will you donate to the Gold Standard charity?



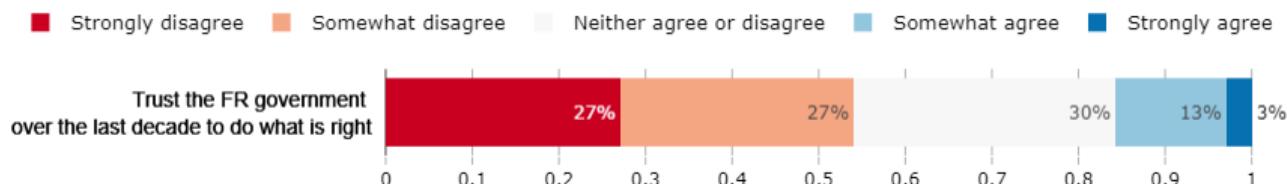
# Trust and institutions

# Trust

Do you agree or disagree with the following statement: "Most people can be trusted."



Do you agree or disagree with the following statement: "Over the last decade the French government could generally be trusted to do what is right."

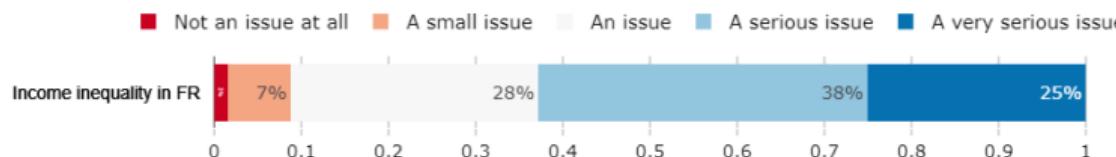


# Perception of institutions, inequality, and the future

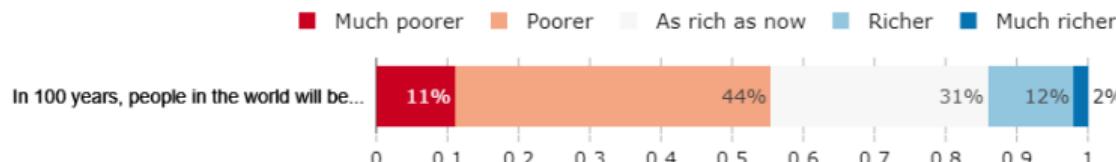
Some people think the government is trying to do too many things that should be left to individuals and businesses. Others think that government should do more to solve our country's problems. Which come closer to your own view?



How big of an issue do you think income inequality is in France?



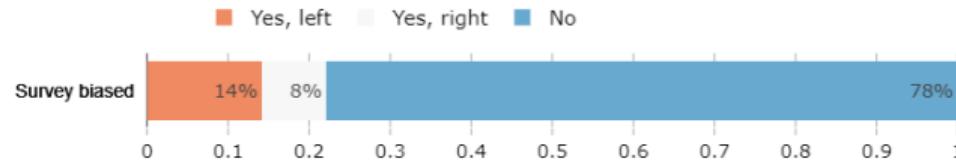
Do you think that overall people in the world will be richer or poorer in 100 years from now?



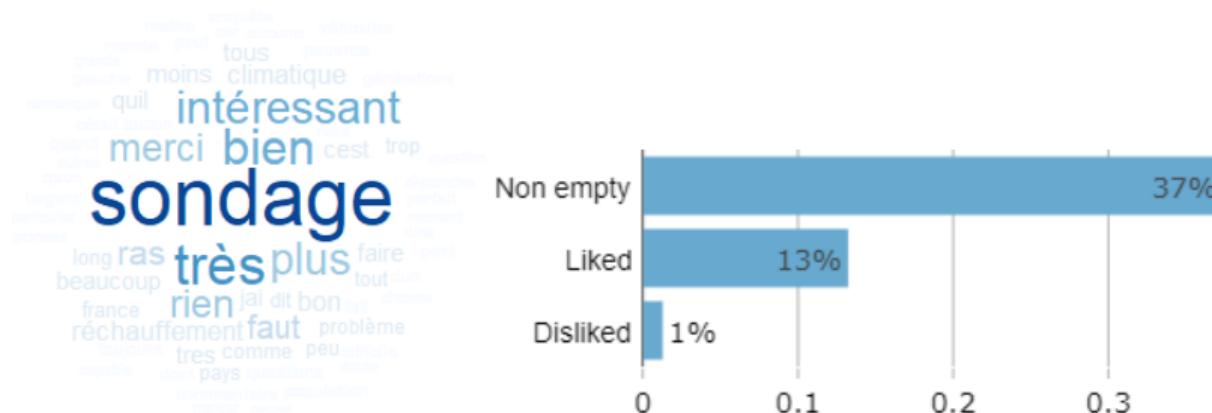
# Feedback

# Feedback on the survey

Do you feel that this survey was politically biased?

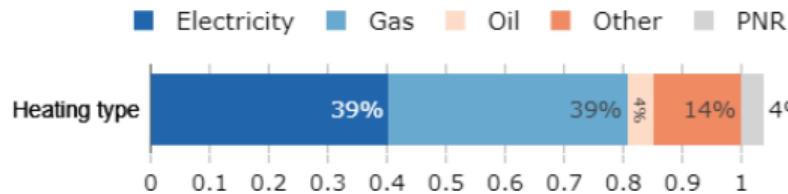


The survey is nearing completion. You can now enter any comments, thoughts or suggestions in the field below.  
Right: recoded in *Non empty/Liked/Disliked*.

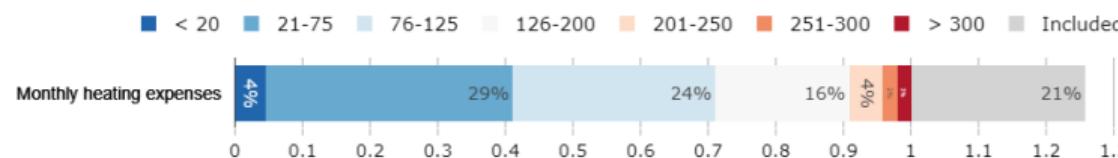


# Household Composition and Energy Characteristics

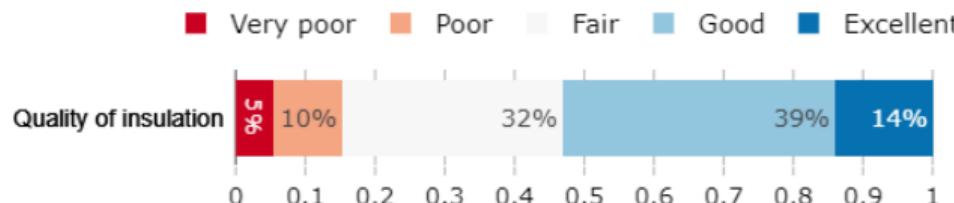
## What is the main way you heat your home



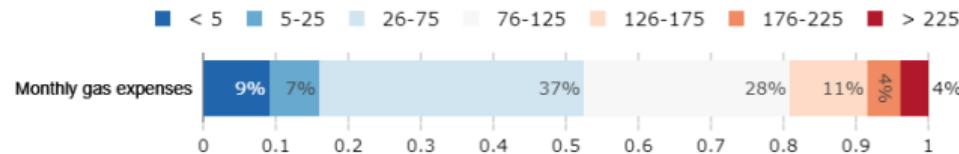
In a typical month, how much do you spend on heating for your accommodation (in €)?



How do you rate the insulation of your accommodation?



In a typical month, how much do you spend on gas for driving (in €)?



How often do you eat beef?

