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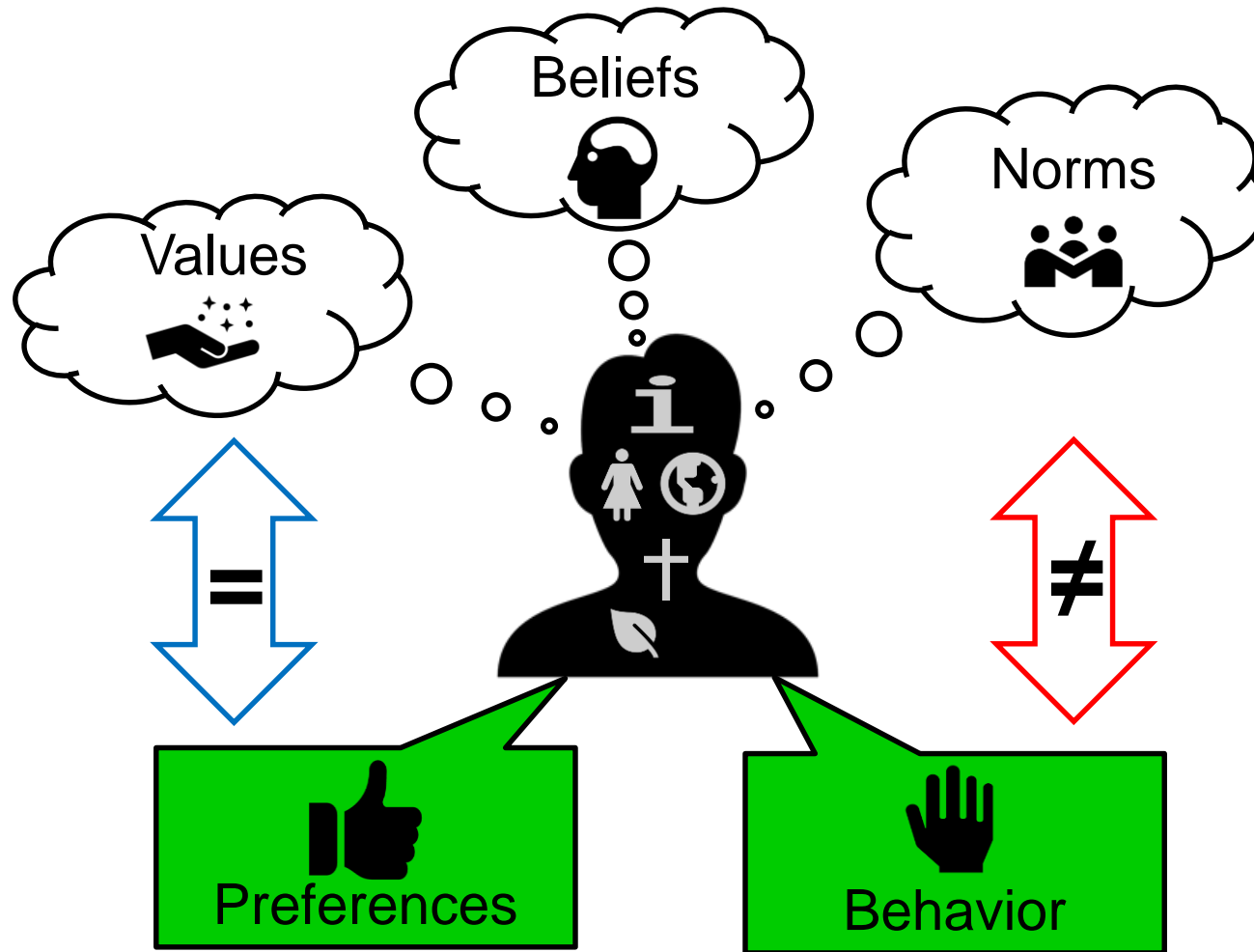
September 6, 2017

The causal effect of religious and environmental identity on green preferences: A combined priming and stated choice experiment

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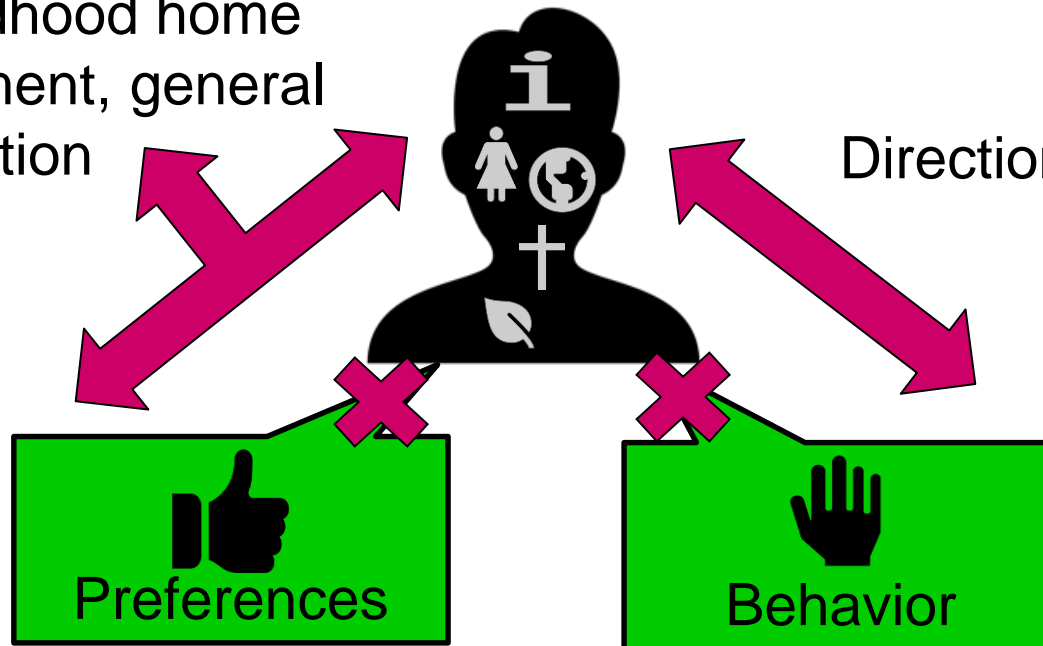
1. Background

Values and norms



Causality problems

Unobserved factors
e.g. childhood home
environment, general
socialization



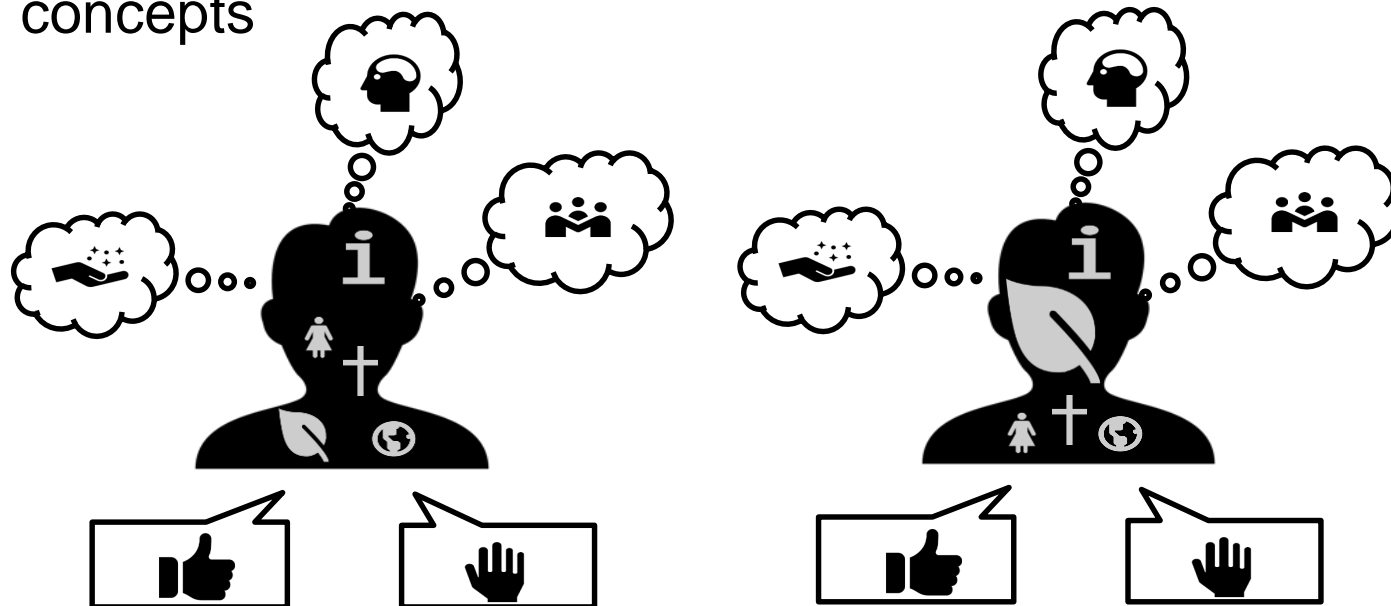
Direction of effects

Preferences

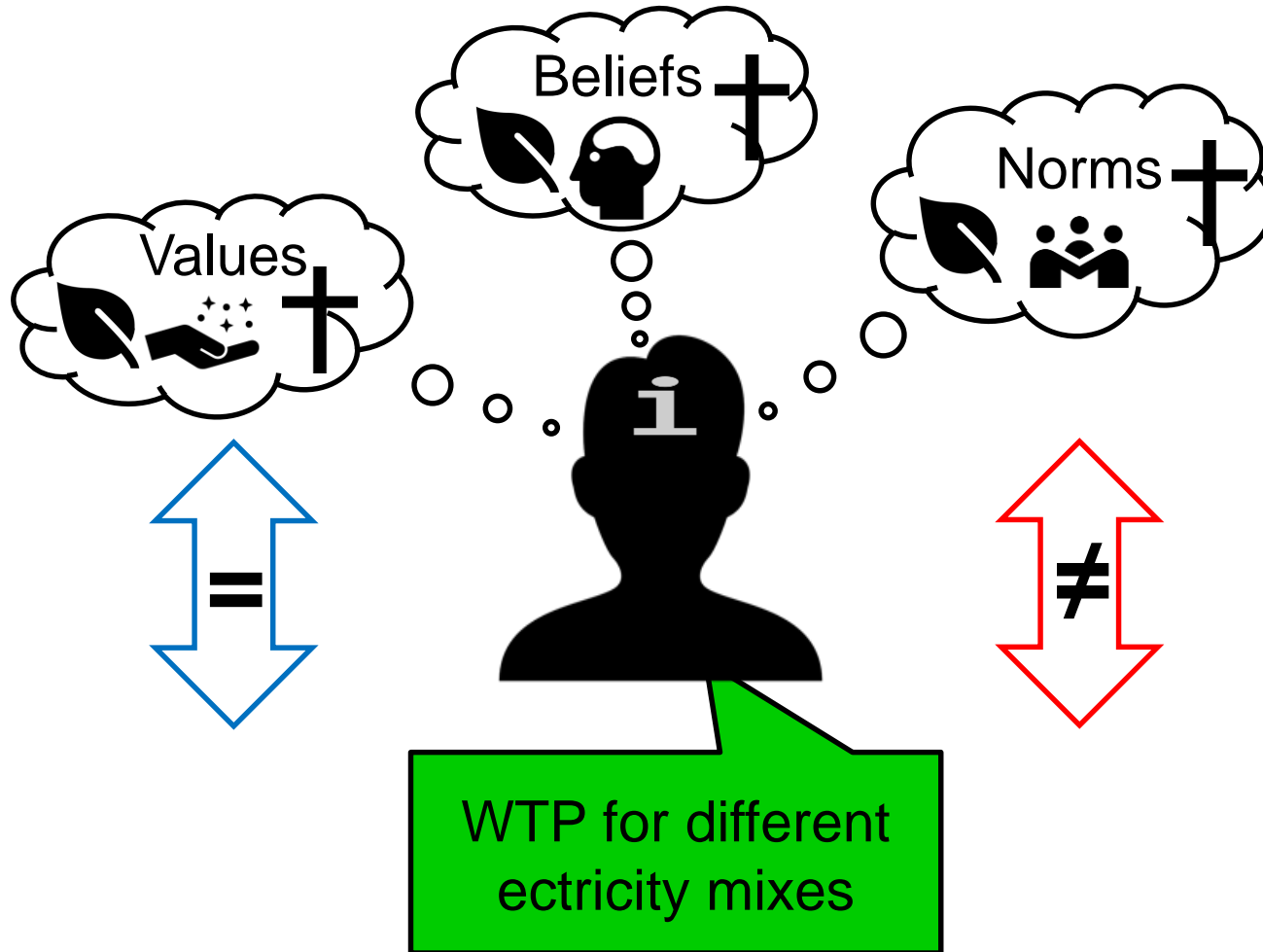
Behavior

Priming technique

- Technique from experimental psychology
- Raises saliency of specific identity (at least temporarily) by activating mental concepts through subtle situational cues
- Identification of causal (marginal) effect of primed concepts



Research question

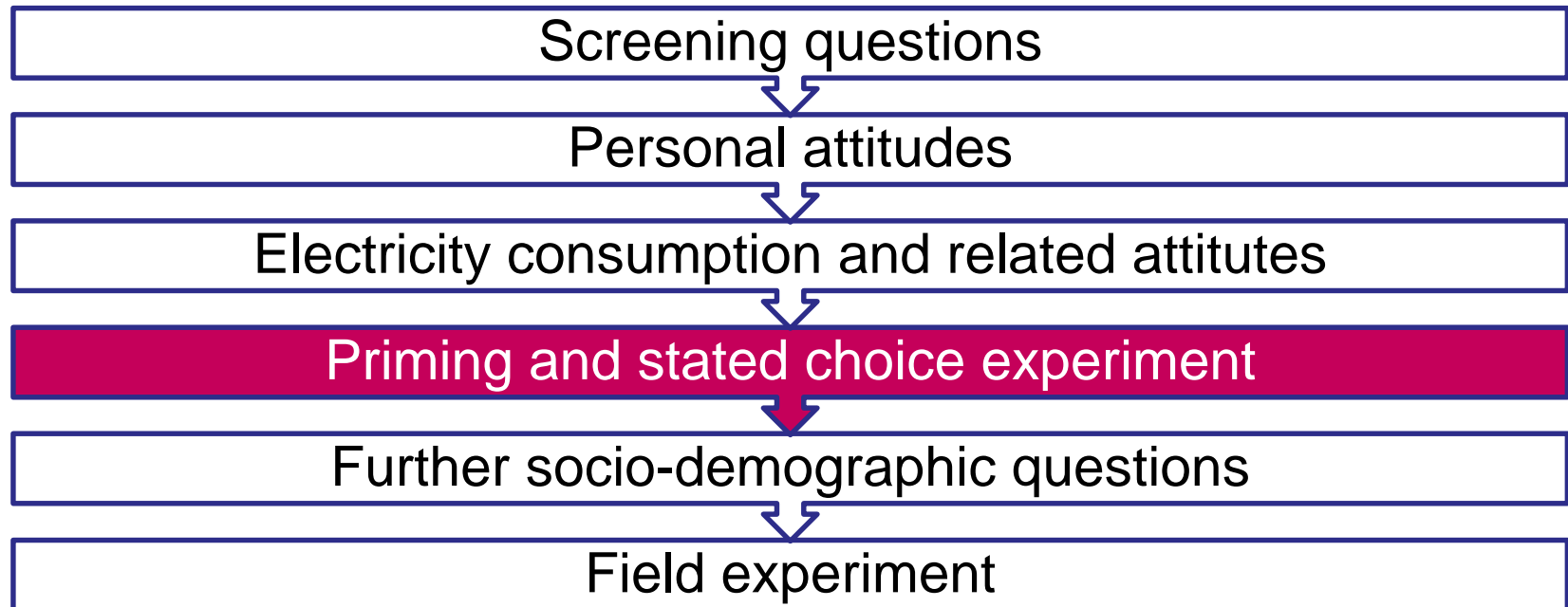


→ Part of research project “Energio”, funded by German Federal Ministry of Education and Research

2. Experimental setting

Survey and questionnaire

- 3705 German citizens, who are responsible for electricity bills and choice of electricity providers and contracts (stratified sample)
- June and July 2016 (Psyma Group)



Original screenshot



Beginnen wir nun mit der ersten Auswahl. Bitte wählen Sie unter den folgenden drei Verträgen denjenigen aus, den Sie am ehesten abschließen würden:

1/6

	Vertrag 1	Vertrag 2	Vertrag 3
Sitz des Stromanbieters	In der eigenen Region	Außerhalb der eigenen Region	In der eigenen Region
Strommix beim gewählten Tarif	100% Erneuerbare Energien (Stromanbieter verkauft sowohl Strom aus Erneuerbaren Energien als auch Strom aus Atomenergie und aus fossilen Energieträgern)	100% Erneuerbare Energien (Stromanbieter verkauft ausschließlich Strom aus Erneuerbaren Energien)	Mix aus Erneuerbaren Energien, fossilen Energieträgern und Atomenergie
Garantierter Anteil des in Ihrer Region erzeugten Stroms im Strommix beim gewählten Tarif	100%	0%	50%
Jährliche Stromkosten in Euro	792 € / Jahr	504 € / Jahr	648 € / Jahr
Art des Stromanbieters	Überregionaler deutscher Stromanbieter	Ausländischer Stromanbieter	Stadtwerk bzw. Regionalversorger
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[Region](#) / [Energiegenossenschaft](#) / [Jährliche Stromkosten in Euro](#) / [Stromtarif mit 100% Erneuerbaren Energien](#)

Würden Sie lieber keinen der zuvor präsentierten Stromlieferungsverträge wählen und stattdessen bei Ihrem derzeitigen Vertrag bleiben?

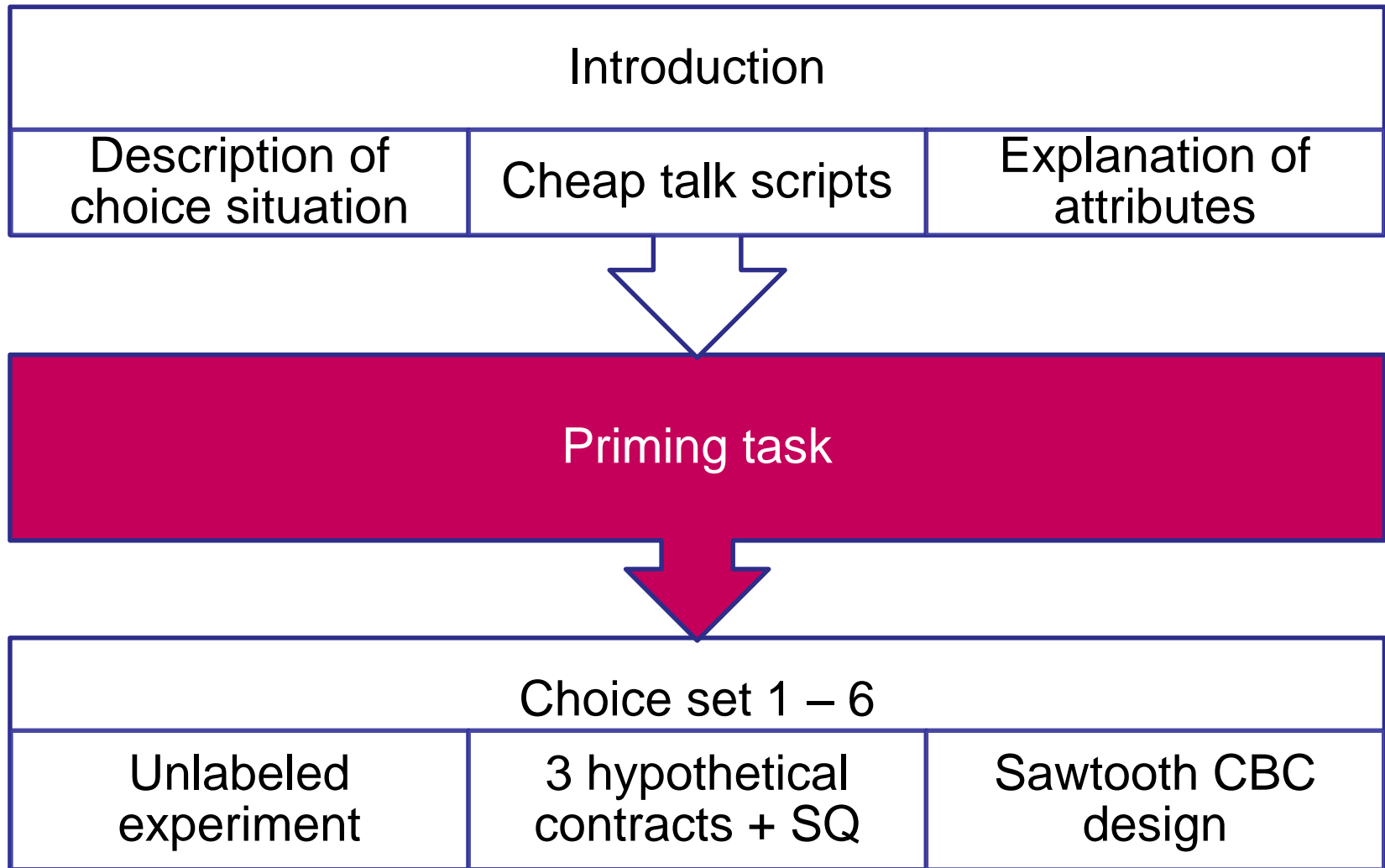
Ja

Nein

Attributes

- Annual cost (customized)
- Energy mix
 - 100% renewable energies from a green provider
 - 100% renewable energies from a conventional provider
 - Mix of renewable energies and fossil energy sources
 - Mix of renewable energies, fossil energy sources and nuclear energy
 - Mix of fossil energy sources and nuclear energy (Base)
- Further attributes: type and location of electricity provider, guaranteed share of regionally produced electricity

Stated choice experiment



Treatment groups

Religious priming (n=1206)



*“Before we start the survey, please describe some positive aspects of **religion and faith** (e.g. in terms of community, safety, afterlife, spirituality)”*

Environmental priming (n=592)



*“Before we start the survey, please describe some positive aspects of **(private) environmental protection** (e.g. in terms of conservation of livelihood of humans, animals and plants,...)”*

Control group (n=1179)



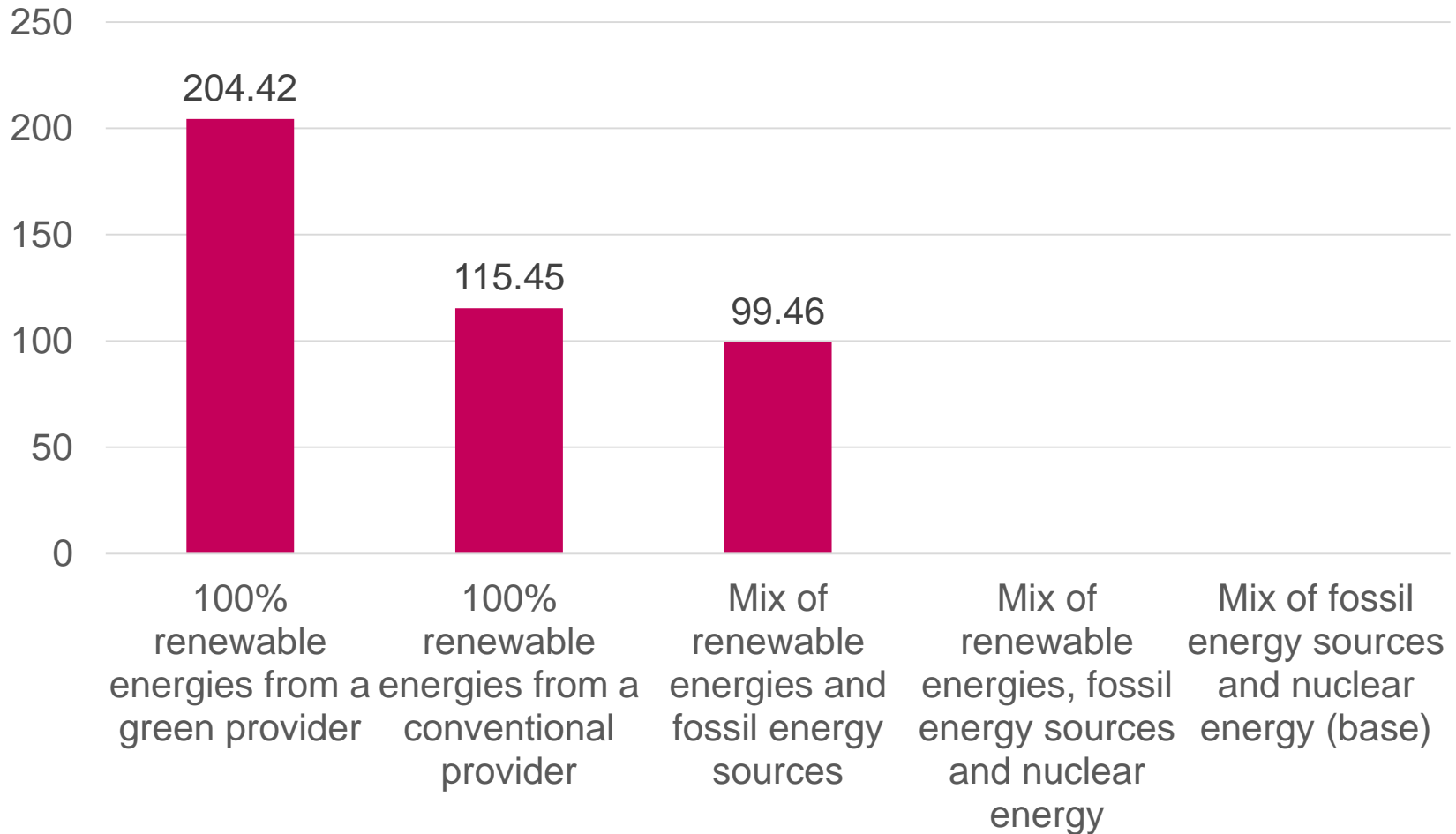
Regional priming (n=~ 600)



3. Econometric analysis and estimation results

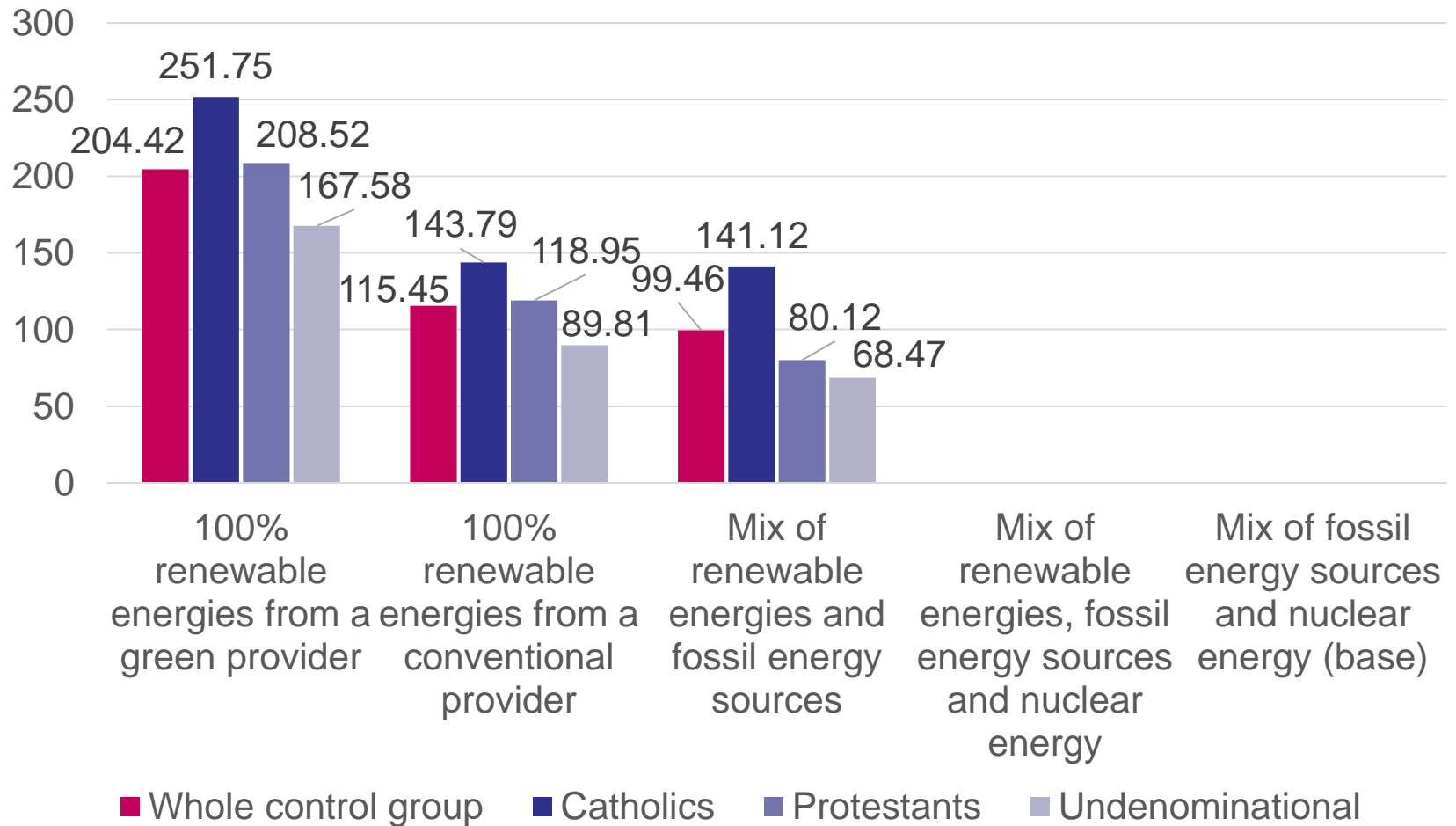
Preliminary results: Control group

Mean WTP in Euro

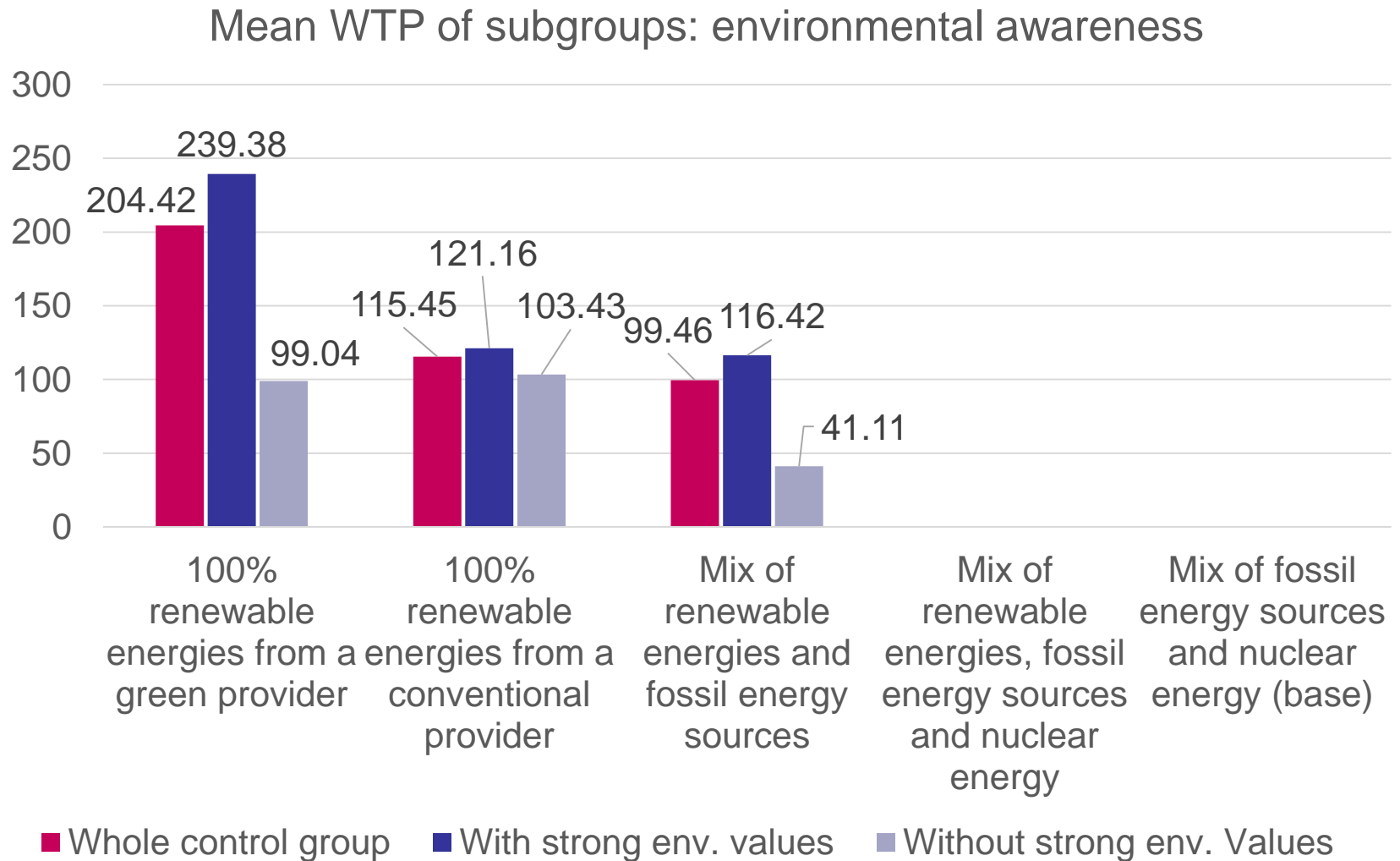


Preliminary results: Control group

Mean WTP of subgroups: religious affiliation



Preliminary results: Control group

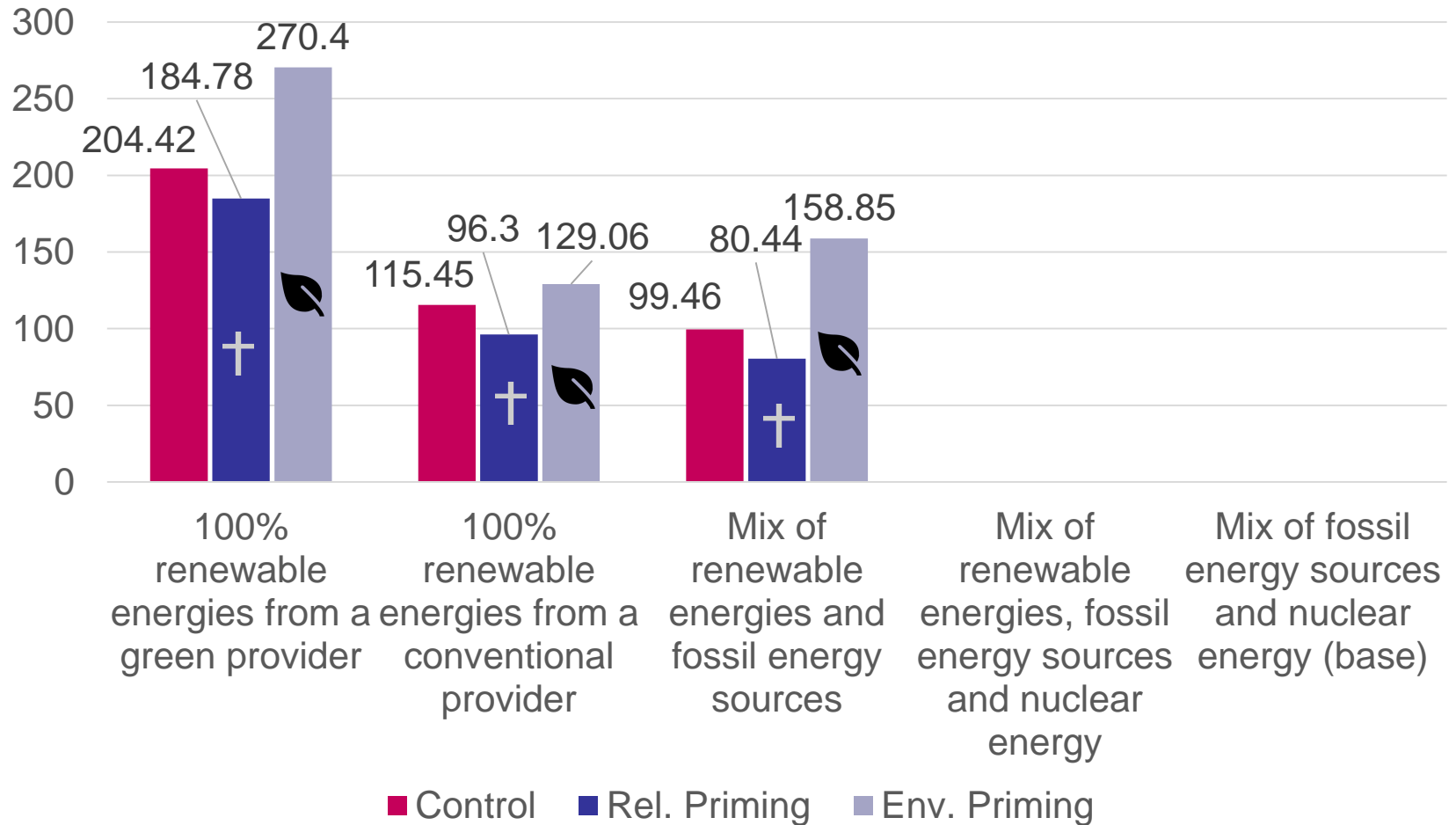


Differences between subgroups

- Mean WTP differs across subgroups
 - Inclusion of interaction terms
 - Differences are not significantly different from zero for religious affiliation (and religiousness)
 - Differences for environmental awareness highly significant for green tariff of a green provider and exclusion of nuclear energy
- Is there really no effect for religion/ religiosity?
- Is the NEP effect a causal effect?

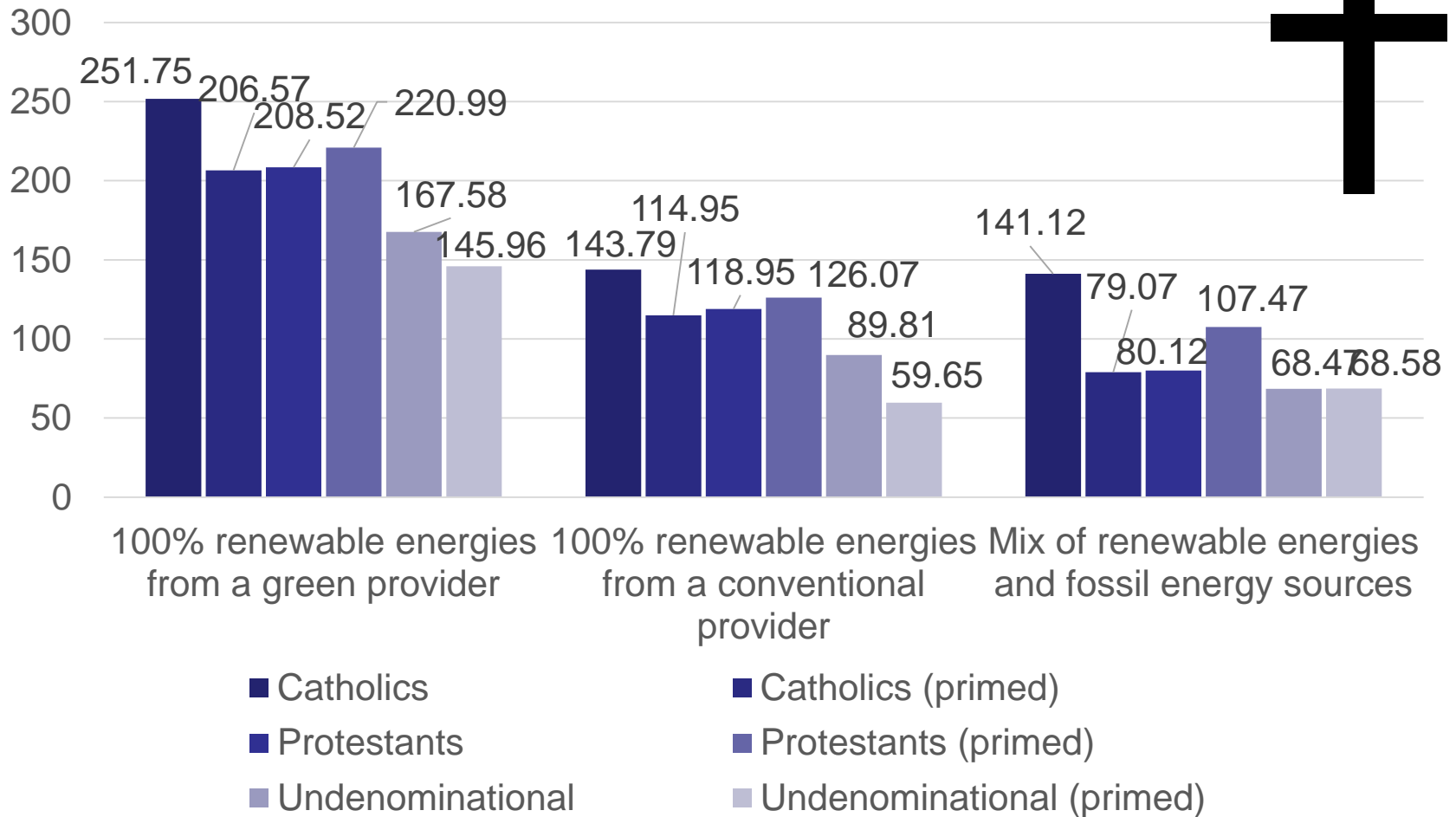
Preliminary results: Priming

Mean WTP in Euro



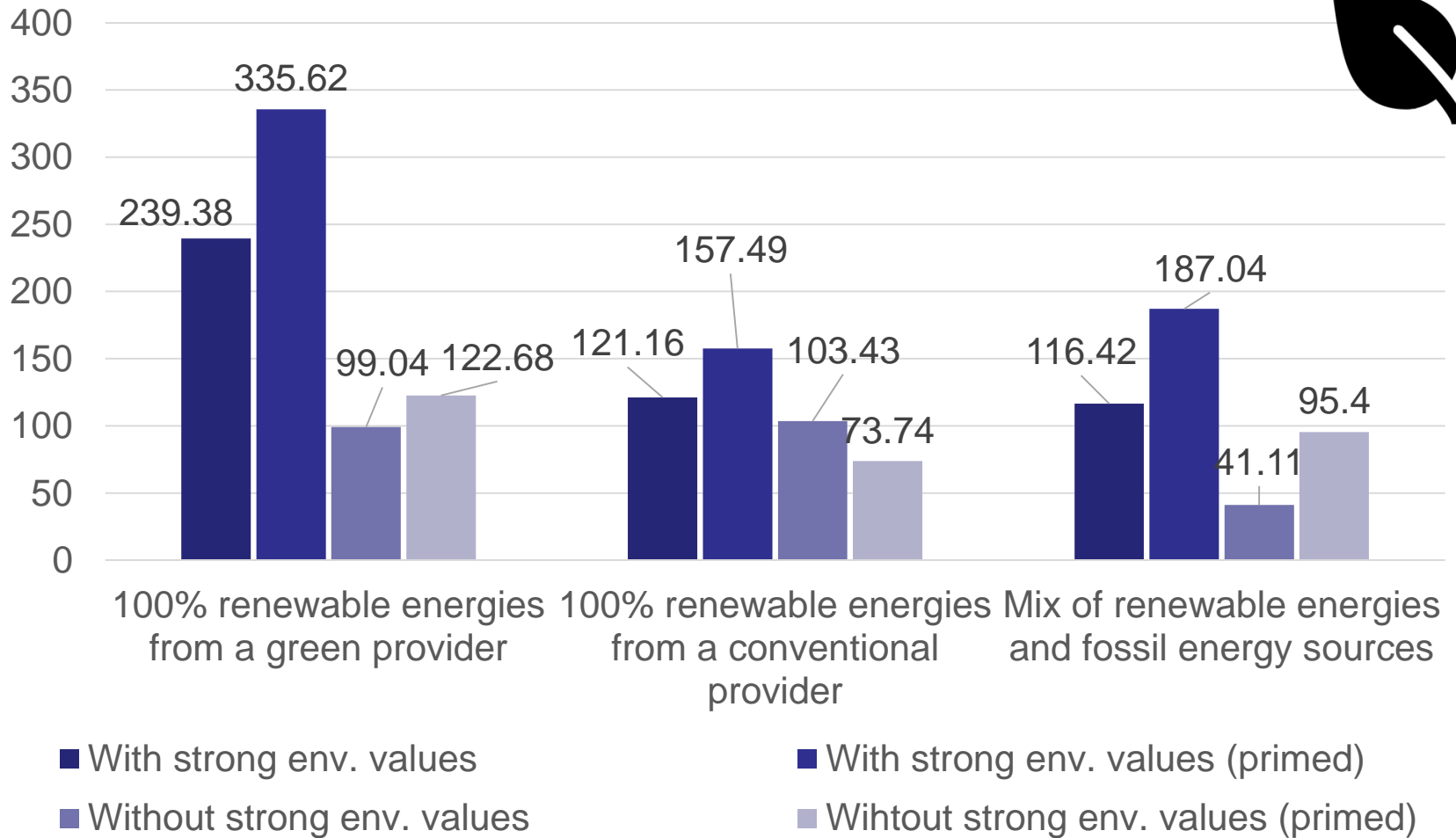
Preliminary results: Priming

Mean WTP of subgroups: religious affiliation



Preliminary results: Priming

Mean WTP of subgroups: environmental awareness



Differences between subgroups

- Mean WTP is decreased by the religious priming task
 - Mean WTP is increased by the environmental priming task
 - Inclusion of interaction terms: Differences due to priming are not significantly different from zero for both priming tasks!
- There is no hint for a causal effect of religious identity and environmental identity on the choice of electricity tariffs!

4. Discussion

Implications and further steps

- There seems to be rather a correlation than a causal effect of (religious and) environmental identity and preferences for green electricity tariffs
- Negative effects of religious priming on preferences for green electricity for individuals without religious identity suggest that priming identity can also affect preferences or behavior of individuals without identity, even when no effect for individuals with identity can be identified
- Further steps:
 - Analysis of answers to the priming tasks
 - Variation in definition of status quo alternative (include further information from survey) and in definition of subgroups and base categories

Thank you!

Appendix

Attribute levels

- Electricity provider
 - Energy cooperative (“Energiegenossenschaft”)
 - Municipal utility
 - Supra-regional German provider
 - Foreign electricity supplier
- Location of electricity provider
 - Within the own region
 - Outside the own region

Attribute levels

- Guaranteed share of regionally produced electricity: 0%, 25%, 50%, 75%, 100%
- Annual electricity cost
 - -30% to +30% in steps of 10 percentage points compared to last electricity cost
 - Shown in Euros

Econometric approach

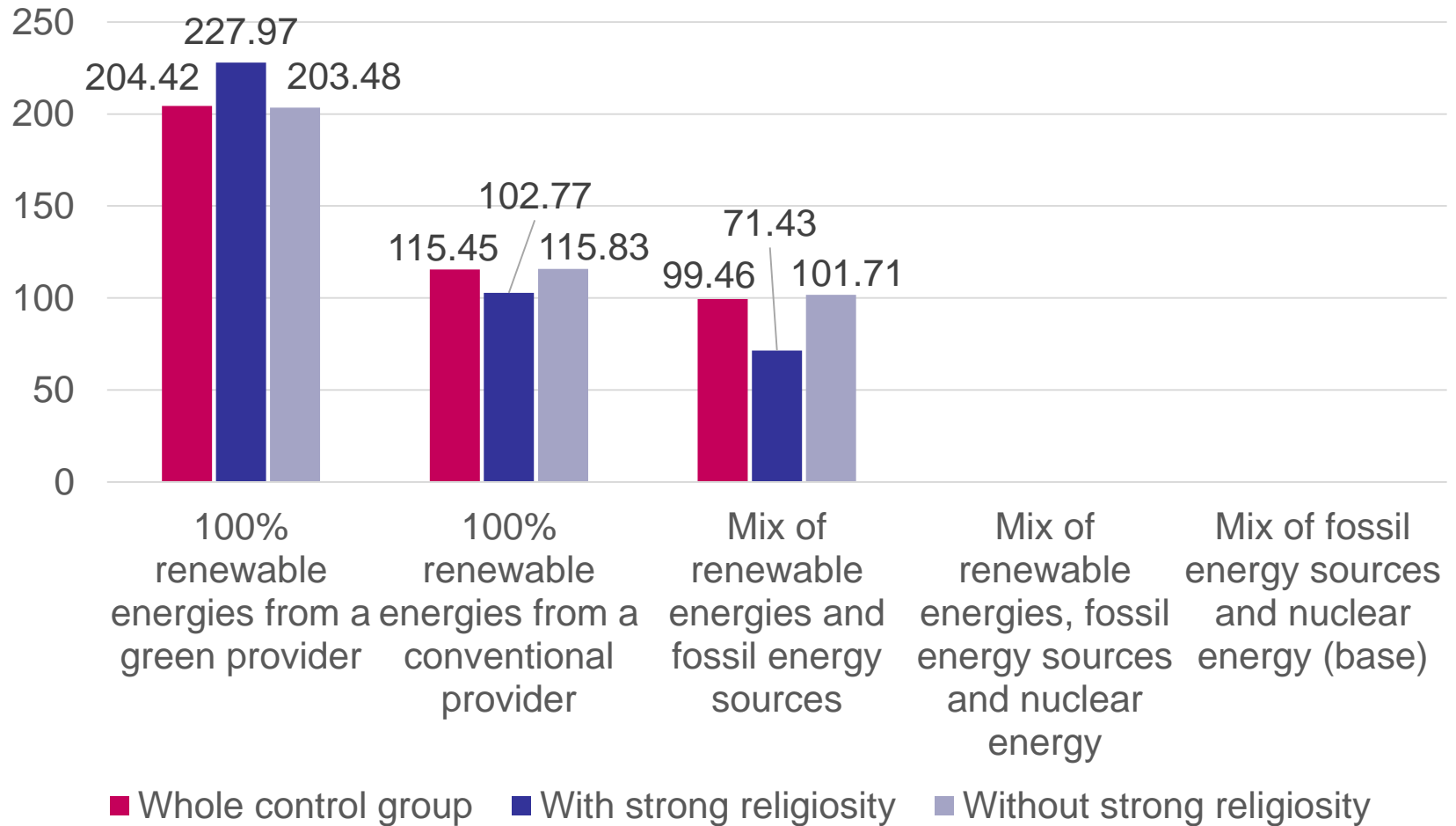
- Flexible mixed logit models (MLM)
- Dependent variable: Choice between three hypothetical electricity contracts and current contract
- Fixed parameter (annual electricity costs, status quo, interactions with individual and treatment variables)
- Random parameter: Attribute levels
- Mean WTP: estimated mean of random parameters ÷ estimated fixed parameters of annual electricity costs
- Individual values: religion, religiousness, environmental awareness (NEP)

Preliminary results: Control group

Explanatory variables	Parameter estimates (robust z-statistics)	
	Control group	
	Mean	Standard deviation
Annual electricity cost in Euros	-0.01*** (-22.95)	--
100% renewable energies form a green provider	1.66*** (15.39)	1.45*** (13.34)
100% renewable energies from a conventional provider	0.94*** (8.85)	1.07*** (7.78)
Mix of renewable energies and fossil energy sources	0.81*** (8.20)	1.04*** (7.65)
Mix of renewable energies, fossil energy sources, and nuclear energy	-0.09 (-0.80)	1.13*** (7.90)
Other Attributes	YES	YES
Status quo (current contract)	3.27*** (24.80)	--
Number of units (observations)	1179 (7074)	

Preliminary results: Control group

Mean WTP of subgroups: strenght of religiosity



Preliminary results: Priming

Mean WTP of subgroups: strenght of religiosity

