Does living close to vineyards increase the willingness-to-pay for organic and local wines?

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Context

Organic agriculture is booming in Europe and is being strongly encouraged by public policies

The location of organic agriculture is not of central interest in orienting public policies

Organic agriculture produces both global and local externalities that need to be disentangled

Do consumers' preferences about organic agriculture depends on their relative location?

General Principles

Using wine: organic certification and producing places are known by the labels of bottles (AOC).

Using a lab experiments to elicit the WTP some bottles of wine: common unit measure

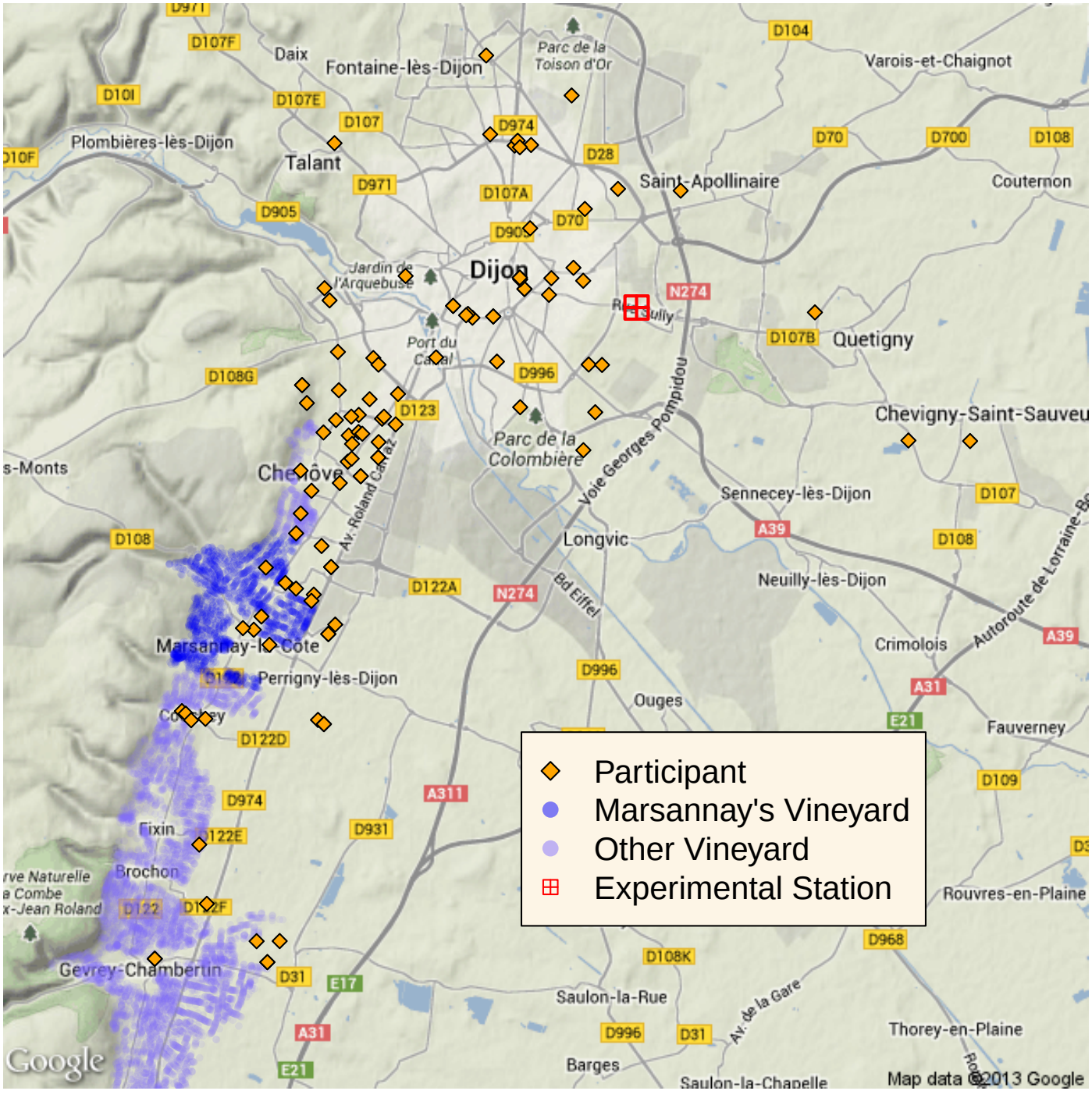
Informations about differential agricultural practices are sequentially revealed, to determine the relative WTP of the marginal externalities

Lab experiment

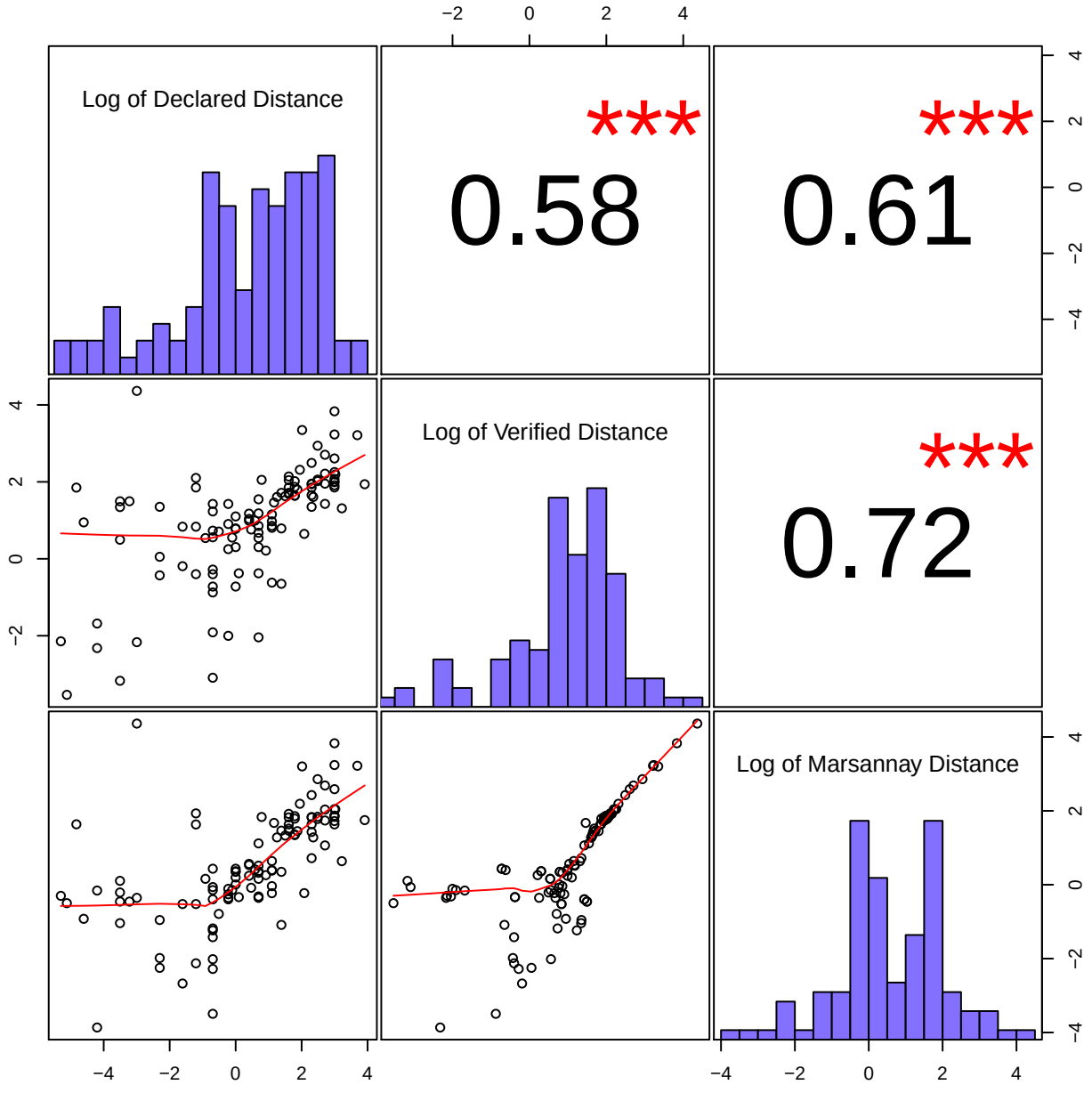
The lab experiment takes place in June 2013 at Dijon, about 5 km from the Burgundy vineyards

11 sessions (1h) of 10 participants that earn €20

The sample of participants was randomly selected based on the quota method but oversampling in *communes* with vineyards


Participant
Marsannay's Vineyard
Other Vineyard
Experimental Station
Dijon
Fontaine-lès-Dijon
Daix
Talant
Plombières-lès-Dijon
Saint-Apollinaire
Quetigny
Chevigny-Saint-Sauveu
Couternon
Varois-et-Chaignot
Parc de la Toison d'Or
Jardin de l'Arquebuse
Port du Canal
Parc de la Colombière
Voie Georges Pompidou
Av. Roland Carraz
Bd Eiffel
Sennecey-lès-Dijon
Longvic
Neuilly-lès-Dijon
Crimolois
Ouges
Fauverney
Rouvres-en-Plaine
Perrigny-lès-Dijon
Marsannay-la-Côte
Fixin
Brochon
Gevrey-Chambertin
Saulon-la-Rue
Barges
Thorey-en-Plaine
Saulon-la-Chapelle
Autoroute de Lorraine
Google
Map data ©2013 Google

3 distance variables



The 4 proposed wines

A bottle of each wine is placed in front of the participants that can freely observe and touch it

CODE	AOC	ATTRIBUTES		PRICE (€)
MRSN	Marsannay	Regular	Local	9
MRSB	Marsannay	Organic	Local	10.5
VCQN	Vacqueyras	Regular	No-local	13
VCQB	Vacqueyras	Organic	No-local	14


MOLIN
GRAND VIN DE BOURGOGNE
2010
MARSANNAY
APPELLATION MARSANNAY CONTROLEE
DOMAINE CAROBELLE
VACQUEYRAS
2010
DOMAINE MAS DU BOUQUET
VACQUEYRAS
2010
2010
VIN DE BOURGOGNE
Marsannay
GHISLAIN KOHUT

The BDM revelation mechanism

An example at the beginning of the experiment:

"What is the maximum price you are willing to pay for this Mars™?" Write down p on a paper

We draw a random price b from a box, and say:

- If $p \leqslant b$, you cannot buy and keep € 20
- If $p > b$, you have opportunity to buy at b

Purchase is not compulsory, even if $p > b$.

Bidding true maximum WTP is a dominant strategy for expected utility maximizers.

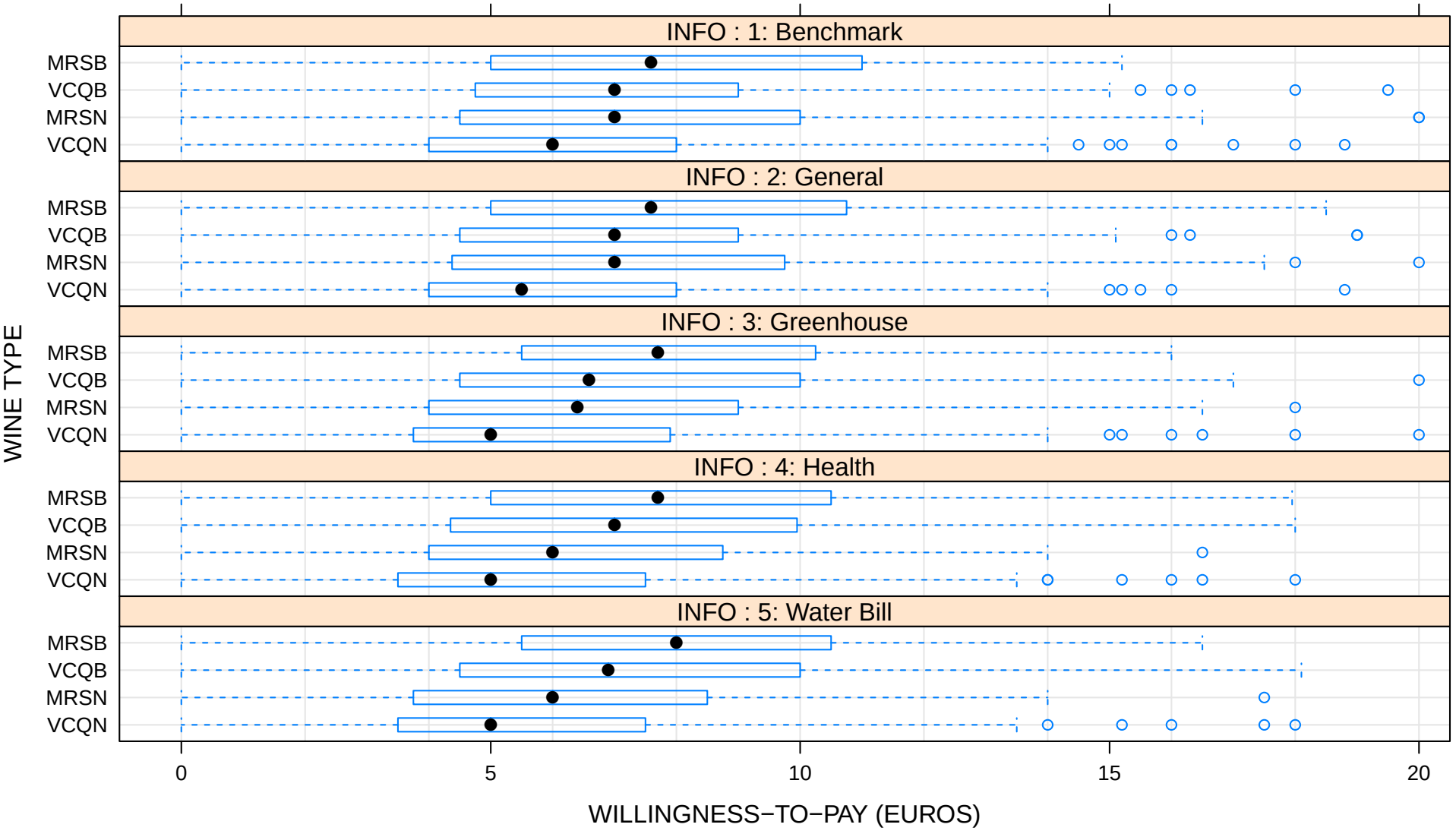
Sequential information

The experiments are structured in 5 rounds with different information levels (said and written):

Round	Info type	Status
1	Only prior information	NA
2	General about organic	NA
3	Regular GHG emissions	global
4	Pesticides and health	local
5	Increase Water bill	local (pecunary)

At each round, WTP for the 4 wines were asked

WTP in levels



Econometric analysis

The sample consists of $N = 111$ participants of whom we asked for $K = 4$ WTP corresponding to $J = 5$ different levels of information.

We have a pooled sample of 2,220 observations.

$$\text{WTP}_{ijk} = \alpha + X_i\beta + \eta_k + \theta_j + \varepsilon_{ijk}$$

Fixed effects with robust M-regression (iterated weighted least squares) and clustered std errors

Specifications

We estimate 3 types of specifications

- Models of global organic premium
- Models of local organic premium
- Models of WTP in levels

With the 3 different distances variables and with and without control variables: income, age, consumption habits, risk aversion, etc.

Models of Global premiums

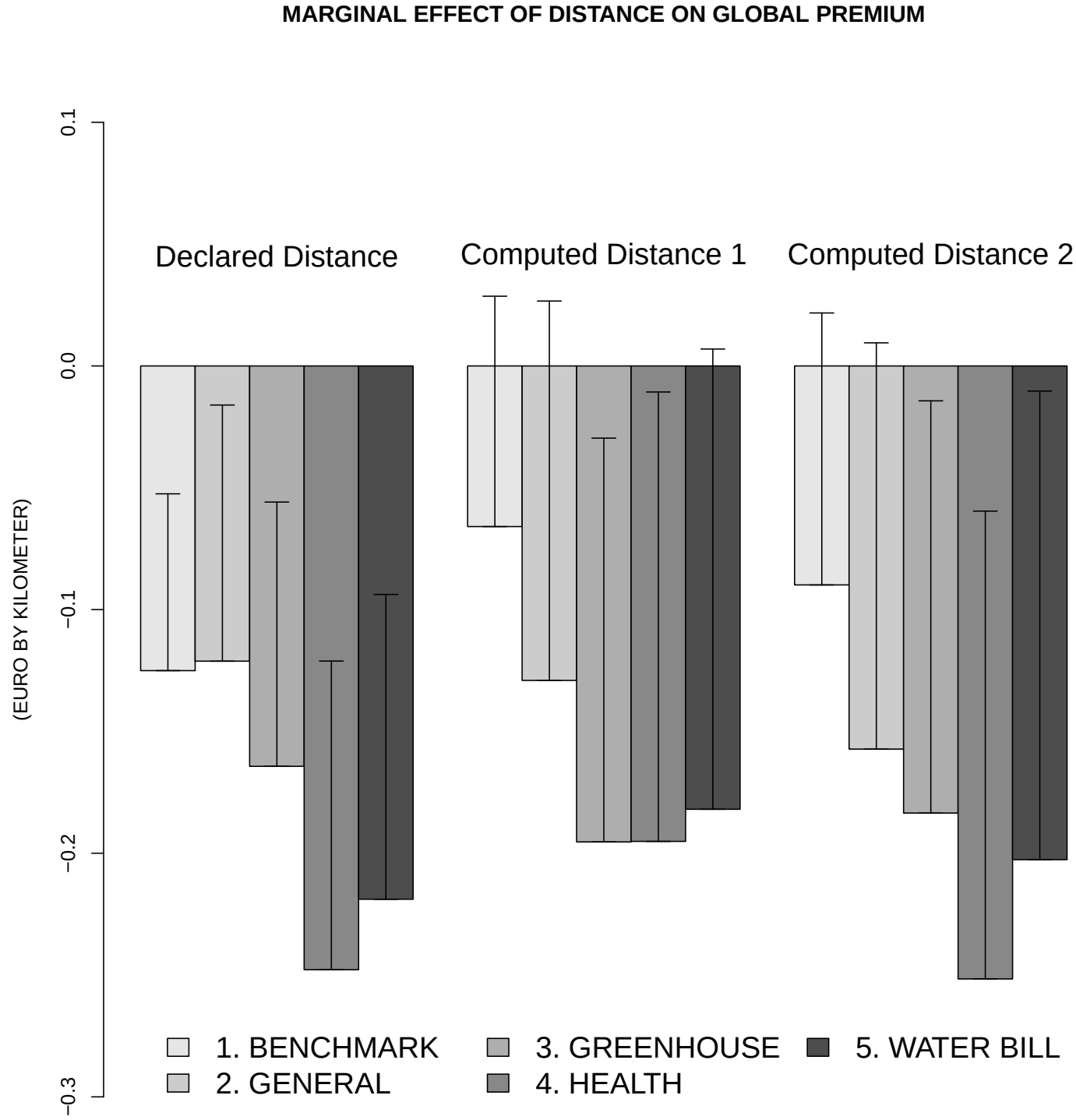
	(DP)	(D1)	(D2)
Perceived Distance	-0.177^{***}		
	(0.055)		
Computed Distance 1		-0.159^{**}	
		(0.074)	
Computed Distance 2			-0.170^{**}
			(0.079)
INFO2: General	0.245^{***}	0.236^{***}	0.234^{***}
	(0.062)	(0.064)	(0.064)
INFO3: Greenhouse	0.535^{***}	0.542^{***}	0.540^{***}
	(0.077)	(0.080)	(0.081)
INFO4: Health	0.748^{***}	0.754^{***}	0.756^{***}
	(0.096)	(0.102)	(0.102)
INFO5: Water Bill	0.798^{***}	0.808^{***}	0.808^{***}
	(0.100)	(0.105)	(0.105)
Observations	555	555	555
Adjusted R^2	0.169	0.132	0.132

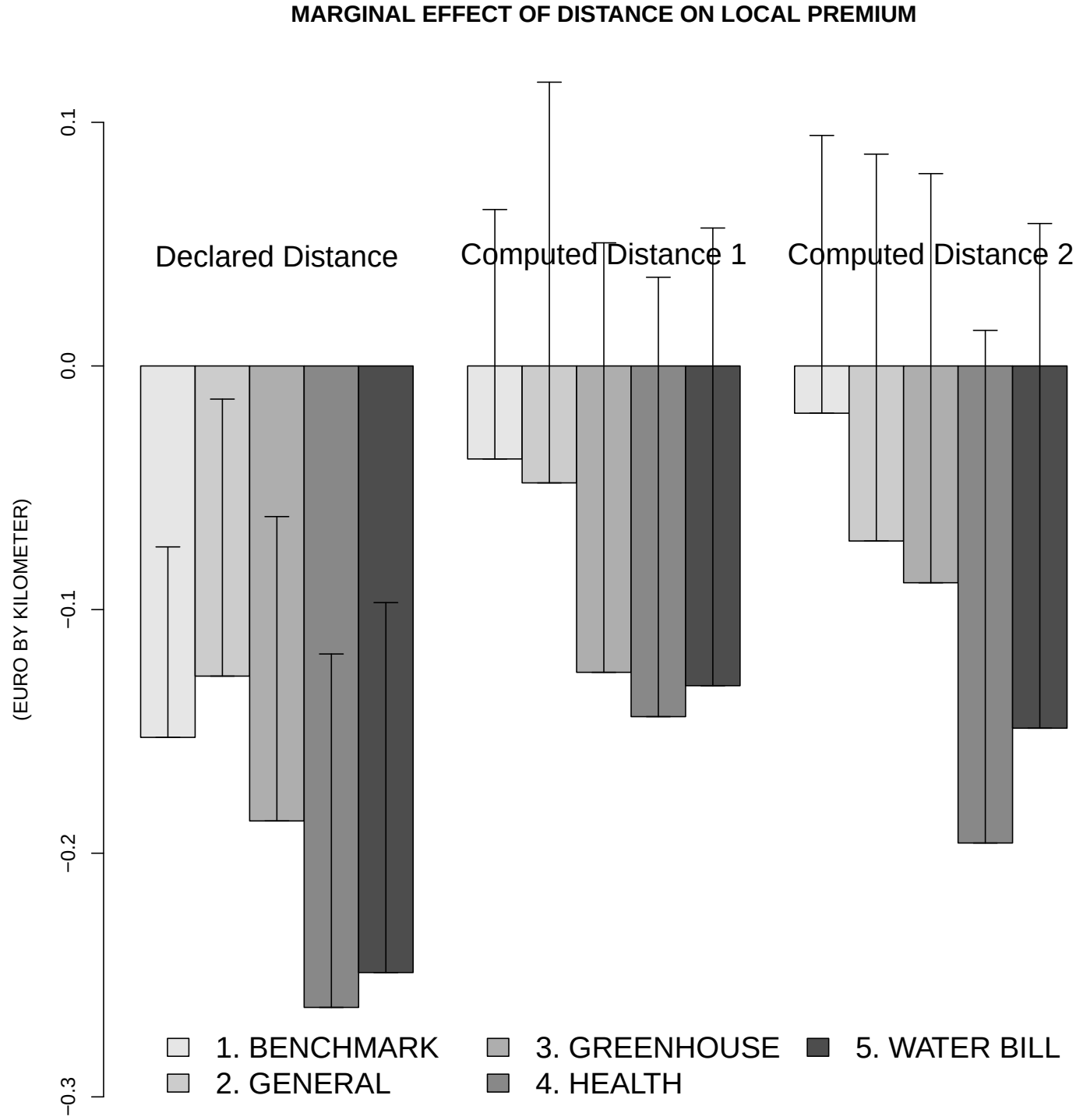
Models of Local premiums

	(DP)	(D1)	(D2)
Perceived Distance	-0.199^{***}		
	(0.056)		
Computed Distance 1		-0.096	
		(0.076)	
Computed Distance 2			-0.106
			(0.085)
INFO2: General	0.266^{***}	0.262^{***}	0.258^{***}
	(0.070)	(0.069)	(0.068)
INFO3: Greenhouse	0.530^{***}	0.530^{***}	0.527^{***}
	(0.077)	(0.077)	(0.076)
INFO4: Health	0.768^{***}	0.766^{***}	0.764^{***}
	(0.105)	(0.106)	(0.105)
INFO5: Water Bill	0.851^{***}	0.853^{***}	0.850^{***}
	(0.107)	(0.108)	(0.107)
Observations	555	555	555
Adjusted R^2	0.114	0.080	0.078

Models of WTP in level

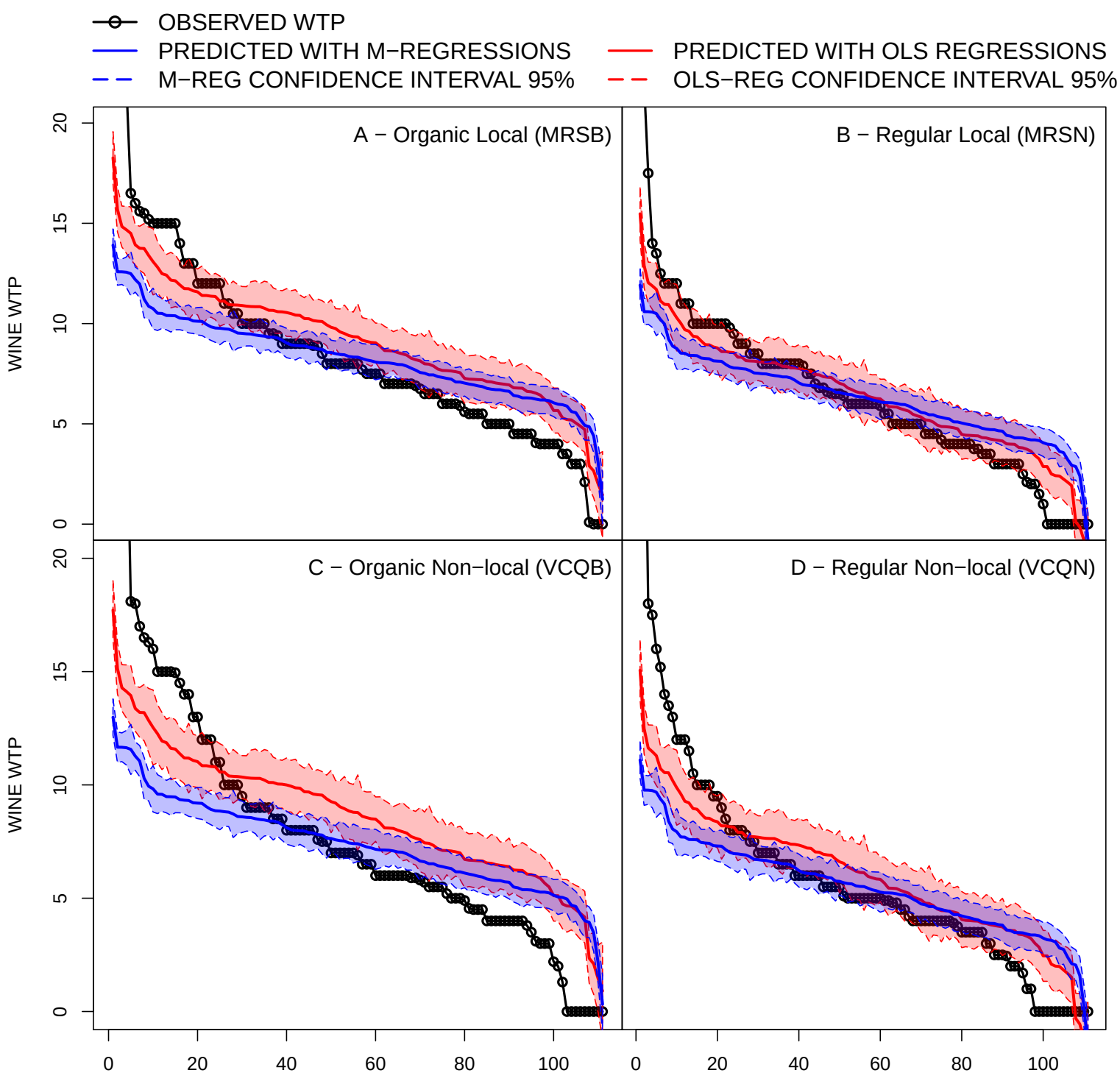
	(DP)	(D1)	(D2)
Distance (!≠!)	0.106	0.389**	0.216
	(0.149)	(0.167)	(0.206)
WINEMRSN	0.822***	0.823***	0.823***
	(0.158)	(0.158)	(0.158)
WINEVCQB	1.434***	1.433***	1.432***
	(0.124)	(0.125)	(0.124)
WINEMRSB	2.356***	2.354***	2.356***
	(0.177)	(0.177)	(0.177)
INFO2: General	−0.070	−0.069	−0.070
	(0.066)	(0.066)	(0.066)
INFO3: Greenhouse	−0.183**	−0.184**	−0.184**
	(0.072)	(0.072)	(0.073)
INFO4: Health	−0.386***	−0.386***	−0.387***
	(0.083)	(0.082)	(0.083)
INFO5: Water Bill	−0.408***	−0.406***	−0.407***
	(0.085)	(0.084)	(0.085)
Observations	2,220	2,220	2,220
Adjusted R^2	0.265	0.275	0.266


MARGINAL EFFECT OF DISTANCE ON GLOBAL PREMIUM
Declared Distance
Computed Distance 1
Computed Distance 2
(EURO BY KILOMETER)
0.1
0.0
−0.1
−0.2
−0.3
1. BENCHMARK
2. GENERAL
3. GREENHOUSE
4. HEALTH
5. WATER BILL


MARGINAL EFFECT OF DISTANCE ON LOCAL PREMIUM
Declared Distance
Computed Distance 1
Computed Distance 2
(EURO BY KILOMETER)
0.1
0.0
−0.1
−0.2
−0.3
1. BENCHMARK
2. GENERAL
3. GREENHOUSE
4. HEALTH
5. WATER BILL

Policy simulation

	Info campaign	Tax t*	Mandat.Standard
Elicited WTP:		t*= 1.01	
without weights	48.93	15.88	8.08
with weights	46.29	15.20	10.85
WTP from OLS:		t*= 0.63	
without weights	41.08	40.22	40.22
with weights	36.95	36.18	36.18
WTP from (M4)		t*= 0.89	
without weights	8.05	8.05	7.60
with weights	7.08	7.08	6.67
WTP from (M5)		t*= 0.83	
without weights	7.92	7.92	7.27
with weights	6.57	6.57	5.97
WTP from (M6)		t*= 0.73	
without weights	7.79	7.79	7.43
with weights	6.68	6.68	6.25


OBSERVED WTP
PREDICTED WITH M−REGRESSIONS
M−REG CONFIDENCE INTERVAL 95%
PREDICTED WITH OLS REGRESSIONS
OLS−REG CONFIDENCE INTERVAL 95%
A − Organic Local (MRSB)
B − Regular Local (MRSN)
C − Organic Non−local (VCQB)
D − Regular Non−local (VCQN)
WINE WTP
WINE WTP
0
5
10
15
20
0
20
40
60
80
100

Conclusion and prespectives 1/2

Positive premiums for organic and local wines, WTP in levels increasing with distance. Why?

Positive premiums for people that leave close but not differentiated between global and local organic. Holistic preferences or declarative bias?

Relative economic equivalence of policy instrument when outliers are taken into account.

Conclusion and prespectives 2/2

Buying organic as a differentiate contribution to the quality of the environment? No, one price.

Spatial differentiated public incitations, spatial configuration of organic agriculture

The absence of differentiated contributions as the Achille's heels of "responsible consumption"?