Navigating Policy Legitimacy: The Distributive and Procedural Justice of Road Transport Pricing Schemes

APPENDICES

Abstract. A major question in politics concerns how the policymaking process shapes political legitimacy. Drawing from the distributive and procedural justice literature, we propose two explanatory factors influencing legitimacy: 1) the distributive policy impact (i.e. the extent to which policy losers show lower support), and 2) the inclusion of organized interests in the decision-making process (i.e. whether their involvement increases the acceptance of a decision outcome). In addition, we advance the existing legitimacy literature by theorizing how individuals, given their core preferences and their evaluation of a policy outcome, value alternative decision scenarios and policy outcomes. We test this framework through a survey experiment on the extent to which individuals support different road transport pricing schemes. Although our results give credit to the winner-loser model, they challenge a utilitarian perspective on legitimacy, as many individuals care about equity principles and the decision-making process, irrespective of specific policy outcomes.

Key words. legitimacy, consultation, decision making, interest representation, procedural fairness

Acknowledgements. (TO BE ADDED LATER)

APPENDIX A1. Vignettes

Original vignettes in Dutch

Conditie 1: proportionele maatregel met consultatie

Veel rijden is veel betalen

De Vlaamse regering heeft een nieuwe verkeersbelasting aangekondigd. Vanaf 2026 zullen bestuurders die gebruik maken van autosnelwegen, N-wegen en gewestwegen een extra belasting moeten betalen, **afhankelijk van het aantal kilometers dat men rijdt.**

De nieuwe maatregel is in het leven geroepen om het aantal files te verminderen en duurzame mobiliteit aantrekkelijker te maken. Files hebben negatieve gevolgen voor de economie en ons leefmilieu. De opbrengsten uit de verkeersbelasting zullen in een fonds worden gestopt om de energie- en klimaattransitie te versnellen.

Na lang onderhandelen, zijn de regeringspartijen tot een akkoord gekomen. **Ook vakbonden, werkgevers- en milieuorganisaties werden nauw betrokken bij de besluitvorming. "Dankzij uitvoerige consultaties hebben we onze standpunten meermaals kunnen toelichten aan de regering" was de algemene reactie van de vertegenwoordigers van het middenveld.** Of ze tevreden waren met het bereikte akkoord, laat men voorlopig in het midden.

De verkeersbelasting heeft als doel het gebruik van alle personenvoertuigen – auto's, moto's, brommers - minder aantrekkelijk te maken. Het bedrag dat men moet betalen zal afhangen van het aantal gereden kilometers. **Hoe meer kilometers men rijdt, hoe meer men zal moeten betalen.** Aspecten van dit systeem zijn gelijkaardig aan het beleid in andere landen, zoals Oostenrijk of Hongarije.

Conditie 2: vlakke maatregel met consultatie

Iedereen die rijdt zal betalen

De Vlaamse regering heeft een nieuwe verkeersbelasting aangekondigd. Vanaf 2026 zullen bestuurders die gebruik maken van autosnelwegen, N-wegen en gewestwegen **een extra belasting moeten betalen.**

De nieuwe maatregel is in het leven geroepen om het aantal files te verminderen en duurzame mobiliteit aantrekkelijker te maken. Files hebben negatieve gevolgen voor de economie en ons leefmilieu. De opbrengsten uit de verkeersbelasting zullen in een fonds worden gestopt om de energie- en klimaattransitie te versnellen.

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De verkeersbelasting heeft als doel het gebruik van alle personenvoertuigen – auto's, moto's, brommers - minder aantrekkelijk te maken. **Elke eigenaar zal jaarlijks een vast bedrag moeten betalen per voertuig.** Aspecten van dit systeem zijn gelijkaardig aan het beleid in andere landen, zoals Oostenrijk of Hongarije.

Conditie 3: proportionele maatregel zonder consultatie

Veel rijden is veel betalen

De Vlaamse regering heeft een nieuwe verkeersbelasting aangekondigd. Vanaf 2026 zullen bestuurders die gebruik maken van autosnelwegen, N-wegen en gewestwegen een extra belasting moeten betalen, **afhankelijk van het aantal kilometers dat men rijdt.**

De nieuwe maatregel is in het leven geroepen om het aantal files te verminderen en duurzame mobiliteit aantrekkelijker te maken. Files hebben negatieve gevolgen voor de economie en ons leefmilieu. De opbrengsten uit de verkeersbelasting zullen in een fonds worden gestopt om de energie- en klimaattransitie te versnellen.

Na lang onderhandelen, zijn de regeringspartijen tot een akkoord gekomen. **Vakbonden, werkgevers- en milieuorganisaties werden niet betrokken bij de besluitvorming. "Door het gebrek aan consultaties, heeft de regering onze standpunten helaas niet kunnen horen" was de algemene reactie.** Of ze tevreden waren met het akkoord, laat men voorlopig in het midden. **De regering stelt dat**

de knoop eindelijk doorgehakt moest worden en dat men niet iedereen kon betrekken bij het proces.
De maatregel heeft als doel het gebruik van alle personenvoertuigen – auto's, moto's, brommers - minder aantrekkelijk te maken. Het bedrag dat men moet betalen zal afhangen van het aantal gereden kilometers. **Hoe meer kilometers men rijdt, hoe meer men zal moeten betalen.** Aspecten van dit systeem zijn gelijkaardig aan het beleid in andere landen, zoals Oostenrijk of Hongarije.

Conditie 4: vlakke maatregel zonder consultatie

Iedereen die rijdt zal betalen

De Vlaamse regering heeft een nieuwe verkeersbelasting aangekondigd. Vanaf 2026 zullen bestuurders die gebruik maken van autosnelwegen, N-wegen en gewestwegen **een extra belasting moeten betalen.** De nieuwe maatregel is in het leven geroepen om het aantal files te verminderen en duurzame mobiliteit aantrekkelijker te maken. Files hebben negatieve gevolgen voor de economie en ons leefmilieu. De opbrengsten uit de verkeersbelasting zullen in een fonds worden gestopt om de energie- en klimaattransitie te versnellen.
Na lang onderhandelen, zijn de regeringspartijen tot een akkoord gekomen. **Vakbonden, werkgevers- en milieuorganisaties werden niet betrokken bij de besluitvorming. "Door het gebrek aan consultaties, heeft de regering onze standpunten helaas niet kunnen horen"** was de algemene reactie. Of ze tevreden waren met het akkoord, laat men voorlopig in het midden. **De regering stelt dat de knoop eindelijk doorgehakt moest worden en dat men niet iedereen kon betrekken bij het proces.**
De verkeersbelasting heeft als doel het gebruik van alle personenvoertuigen – auto's, moto's, brommers - minder aantrekkelijk te maken. **Elke eigenaar zal jaarlijks een vast bedrag moeten betalen per voertuig**. Aspecten van dit systeem zijn gelijkaardig aan het beleid in andere landen, zoals Oostenrijk of Hongarije.

Conditie 5: controlegroep

Autorijden wordt duurder

De Vlaamse regering heeft aangekondigd een nieuwe verkeersbelasting in te voeren. De nieuwe maatregel wordt ingevoerd om het aantal files te verminderen en duurzame mobiliteit aantrekkelijker te maken. Autogebruik zal duurder worden om het minder aantrekkelijk te maken. Aspecten van dit systeem zijn gelijkaardig aan het beleid in andere landen, zoals Oostenrijk of Hongarije.

English translation of vignettes

Condition 1: proportional policy with consultation

Driving a lot means paying a lot

The Flemish government has announced a new road tax. Starting from 2026, drivers using highways, N-roads, and regional roads will have to pay an additional tax **based on the number of kilometers they drive.**

The new measure is being implemented to reduce the number of traffic jams and to make sustainable mobility more attractive. Traffic jams have negative consequences for the economy and our environment. The revenue from the road tax will be allocated to a fund to accelerate energy and climate transition.

After lengthy negotiations, the coalition parties reached an agreement. **Labor unions, employers, and environmental organizations were also closely involved in the decision-making process. "Thanks to extensive consultations, we have been able to explain our positions to the government multiple times", was the general reaction of civil society representatives.** Whether they were satisfied with the agreement remains unclear for now.

The road tax aims to make the use of all passenger vehicles – cars, motorcycles, mopeds – less attractive. The amount to be paid will depend on the number of kilometers driven. **The more kilometers one drives, the more one will have to pay.** Aspects of this system are similar to policies in other countries, such as Austria or Hungary.

Condition 2: uniform policy with consultation

Everyone who drives will pay

The Flemish government has announced a new road tax. Starting from 2026, drivers using highways, N-roads, and regional roads **will pay an additional tax.**

The new measure is being implemented to reduce the number of traffic jams and to make sustainable mobility more attractive. Traffic jams have negative consequences for the economy and our environment. The revenue from the road tax will be allocated to a fund to accelerate energy and climate transition.

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The road tax aims to make the use of all passenger vehicles – cars, motorcycles, mopeds – less attractive. **Every owner will have to pay a fixed amount per vehicle annually.** Aspects of this system are similar to policies in other countries, such as Austria or Hungary.

Condition 3: proportional policy without consultation

Driving a lot means paying a lot

The Flemish government has announced a new road tax. Starting from 2026, drivers using highways, N-roads, and regional roads will have to pay an additional tax **based on the number of kilometers they drive.**

The new measure is being implemented to reduce the number of traffic jams and to make sustainable mobility more attractive. Traffic jams have negative consequences for the economy and our environment. The revenue from the road tax will be allocated to a fund to accelerate energy and climate transition.

After lengthy negotiations, the coalition parties have reached an agreement. **Labor unions, employers, and environmental organizations were not involved in the decision-making process. "Due to the lack of consultations, unfortunately, the government could not hear our positions", was the general response.** Whether they were satisfied with the agreement remains unclear for now. **The government argues that the decision had to be made at last and that it was not possible to involve everyone in the process.**

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The road tax aims to make the use of all passenger vehicles – cars, motorcycles, mopeds – less attractive. **Every owner will have to pay a fixed amount per vehicle annually.** Aspects of this system are similar to policies in other countries, such as Austria or Hungary.

Condition 5: control group

Driving becomes more expensive

The Flemish government has announced a new road tax. The new measure is being implemented to reduce the number of traffic jams and make sustainable mobility more attractive. The use of cars will become more expensive to make it less appealing. Aspects of this system are similar to policies in other countries, such as Austria or Hungary.

APPENDIX A2. Descriptives variables used in main text and appendices

Table A2. Descriptives

	Mean	SD	Min.	Max.
overall acceptance	5.50	1.94	2	10
policy acceptance	5.81	2.33	2	10
procedure acceptance	5.19	1.94	2	10
CONTROL VAR				
climate skepticism	5.82	2.60	3	15
efficacy belief	7.75	2.83	2	15
SES	6.77	1.86	1	9

Experimental conditions	N	percentage
control condition	118	23%
I consultation-uniform	81	16%
II consultation-proportional	90	18%
III no consultation-uniform	99	20%
IV no consultation-proportional	119	23%
Car ownership/use	N	Percentage
no or very infrequent	88	17%
les intensive users	173	39%
intensive car users	186	42%
Alternatives	N	Percentage
Policy		
No	201	52%
Yes	187	48%
Procedure		
No	214	56%
Yes	171	44%

APPENDIX A3. Operationalization control variables

I. climate skepticism

The respondent's attitude toward climate change was measured with three five-point Likert-items, for which the Cronbach's alpha equals 0.85 (Carlsson et al., 2012; Kotchen et al., 2013). An simple additive index was established; higher values refer to more skeptical attitudes (frequency and percentages).

Table A3.a. Climate skepticism

	1 = Not at all serious	2 = Not serious	3 = Neutral	4 = Serious	5 = Very serious
How serious do you think the problem of climate change is right now?	13 2%	36 5%	77 11%	269 38%	309 44%
	1 = Totally disagree	2 = Disagree	3 = Neutral	4 = Agree	5 = Totally agree
To what extent do you agree with the following statement, "Climate change is an inevitable process, there is nothing we can do about it".	223 32%	203 43%	78 11%	79 11%	20 3%
"CO2 (carbon dioxide) emissions have only a marginal effect on climate change".	228 32%	268 38%	86 12%	93 13%	28 4%

II. efficacy belief

We used three five-point Likert-items for assessing the belief in the efficacy of proposed policy outcome (Cronbach's alpha equals 0.79) (Kallbekken & Sælen, 2011). An simple additive index was established; higher values refer to stronger efficacy beliefs.

Table A3.b. Efficacy belief

In your opinion, how effective will the measure be in achieving the goals listed below? (frequency and percentages)

	1 = Very ineffective	2 = Ineffective	3 = Neutral	4 = Effective	5 = Very effective
Reduce traffic jams	119 17%	263 37%	134 22%	156 3%	20 2%
Making sustainable mobility more attractive	104 15%	251 40%	134 19%	134 24%	171 5%
Slowing down climate change	136 19%	222 32%	163 23%	145 4%	25 2%

III. socio-economic status (SES)

SES was measured through combining three items: education, income satisfaction, and estimated income (Cronbach's alpha equal 0.66) (Carlsson et al., 2012; Kotchen et al., 2013; Tobler et al., 2012). An simple additive index was established; higher values correspond with a higher SES.

Table A3.c. What is your highest obtained degree?

	frequency	percentage
1, 2, 3, 4 = no, only primary school, or secondary school	130	26%
5= bachelor	167	33%
6, 7 = master, PhD	209	41%

Table A3.d. Do you estimate your income to be higher or lower than that of the average Flemish person?

	frequency	percentage
1, 2 much lower/lower	97	19%
3= the same	170	34%
4, 5 = higher/much higher	232	47%

Table A3.e. How satisfied are you with your income?

	frequency	percentage
1, 2 = completely dissatisfied/dissatisfied	73	15%
3= neutral	138	28%
4, 5 = satisfied/completely satisfied	287	58%

References

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Tobler, C., Visschers, V. H. M., & Siegrist, M. (2012). Addressing climate change: Determinants of consumers' willingness to act and to support policy measures. *Journal of Environmental Psychology*, *32*(3), 197–207.

APPENDIX A4. Robustness checks: models with control variables

Table A4. Modeling overall acceptance, policy acceptance and procedure acceptance

	M1: acceptance	M2: policy acceptance	M3: procedure acceptance
Intercept	3.07 (0.40)***	3.63 (0.51)***	2.50 (0.44)***
VIGNETTES			
control condition	-	-	-
I consultation-uniform	0.04 (0.21)	-0.73 (0.26)**	0.82 (0.23)***
II consultation-proportional	0.56 (0.20)**	0.28 (0.25)	0.87 (0.22)***
III no consultation-uniform	-1.26 (0.20)***	-1.32 (0.25)***	-1.19 (0.22)***
IV no consultation-proportional	-0.33 (0.18)	-0.08 (0.23)	-0.58 (0.20)**
CAR USE			
no car/very infrequent use	-	-	-
frequent use	-0.66 (0.18)***	-0.80 (0.23)***	-0.53 (0.21)**
very frequent use	-0.82 (0.18)***	-0.99 (0.23)***	-0.66 (0.21)***
CONTROL VAR			
climate skepticism	-0.10 (0.03)***	-0.13 (0.03)***	-0.07 (0.03)*
efficacy belief	0.19 (0.04)***	0.14 (0.05)**	0.23 (0.04)***
SES	0.33 (0.02)***	0.39 (0.03)***	0.26 (0.03)***
	F=56.60 p<.0001 R^2=.54	F=45.37 p<.0001 R^2=.49	F=42.81 p<.0001 R^2=.47

Index: N=437; OLS-regression coefficients; SE between brackets; *** p<.001, **p<.01, *p<.05

APPENDIX A5. Robustness checks: residence and work transportation

The intensity with which individuals use a private car related to their place of residence or their dependence on private transport for professional reasons. As Table A5.a shows individuals living in the country side are much more prevalent among the very frequent car users and this who use a private car for commuting are also very frequent car users (except for the group that without a job). We tested some alternative models as a robustness check for the models reported in Table 4. These models basically confirm our expectations: individuals living outside city centers and those who use a private car for professional purposes find the decision outcome less acceptable.

Table A5.a. Residence, commuting and car usage (frequencies, column percentages, and Chi^2-test)

Residence	no car/very infrequent use	frequent use	very frequent use
urban (large city)	34	20	6
	38%	12%	3%
suburban area	17	36	29
	19%	21%	20%
small city	17	38	38
	19%	22%	20%
countryside	20	79	113
	23%	46%	61%
Chi^2=76.5354, p<.0001, Cramer's V=.2926			
How do you commute to work	no car/very infrequent use	frequent use	very frequent use
private car	0	7	53
	0%	4%	28%
company car	0	2	17
	0%	1%	9%
public transport, bicycle, pedestrian	43	48	19
	49%	28%	10%
I work from home	5	11	10
	6%	6%	5%
I do not work	40	105	87
	45%	61%	48%
Chi^2=114.4836, p<.0001, Cramer's V=.3579			

Table A5.b. M1, M2 and M3 and residence

	M1: acceptance	M2: policy acceptance	M3: procedure acceptance
Intercept	3.45 (0.42)***	3.72 (0.54)***	3.18 (0.44)***
VIGNETTES			
control condition	-	-	-
I consultation-uniform	0.08 (0.21)	-0.63 (0.26)*	0.80 (0.21)***
II consultation-proportional	0.57 (0.19)**	0.30 (0.25)	0.85 (0.20)***
III no consultation-uniform	-1.27 (0.19)***	-1.37 (0.25)***	-1.17 (0.20)***
IV no consultation-proportional	-0.37 (0.18)*	-0.07 (0.23)	-0.68 (0.19)***
CAR USE			
urban (large city)	-	-	-
suburban area	-0.96 (0.22)***	-0.80 (0.27)**	-1.12 (0.22)***
small city	-0.60 (0.21)**	-0.49 (0.27)	-0.71 (0.22)**
countryside	-0.60 (0.18)**	-0.54 (0.24)*	-0.66 (0.20)***
CONTROL VAR			
climate skepticism	-0.14 (0.03)***	-0.17 (0.03)***	-0.07 (0.03)*
efficacy belief	0.21 (0.05)***	0.16 (0.06)**	0.23 (0.04)***
SES	0.33 (0.02)***	0.40 (0.03)***	0.26 (0.03)***
	F=57.34 p<.0001 R^2=.54	F=44.06 p<.0001 R^2=.47	F=46.39 p<.0001 R^2=.49

Index: N=489; OLS-regression coefficients; SE between brackets; *** p<.001, **p<.01, *p<.05

Table 5.c. M1, M2 and M3 and commuting

	M1: acceptance	M2: policy acceptance	M3: procedure acceptance
Intercept	2.32 (0.41)***	2.61 (0.53)***	2.04 (0.44)***
VIGNETTES			
control condition	-	-	-
I consultation-uniform	0.10 (0.20)	-0.62 (0.25)*	0.83 (0.21)***
II consultation-proportional	0.61 (0.19)***	0.36 (0.25)	0.93 (0.20)***
III no consultation-uniform	-1.28 (0.14)***	-1.37 (0.24)***	-1.19 (0.20)***
IV no consultation-proportional	-0.33 (0.20)	-0.02 (0.22)	-0.63 (0.19)***
CAR USE			
private car	-	-	-
company car	0.44 (0.24)	0.27 (0.31)	0.61 (0.26)*
public transport, bicycle, pedestrian	0.98 (0.21)***	1.10 (0.27)***	0.85 (0.23)***
I work from home	0.25 (0.30)	0.31 (0.38)	0.19 (0.32)
I do not work	0.43 (0.20)*	0.48 (0.25)	0.38 (0.21)
CONTROL VAR			
climate skepticism	-0.12 (0.03)***	-0.15 (0.03)***	-0.09 (0.03)***
efficacy belief	0.21 (0.05)***	0.15 (0.06)*	0.25 (0.05)***
SES	0.32 (0.02)***	0.39 (0.03)***	0.26 (0.03)***
	F=52.90 p<.0001 R^2=.54	F=42.09 p<.0001 R^2=.48	F=40.84 p<.0001 R^2=.48

Index: N=489; OLS-regression coefficients; SE between brackets; *** p<.001, **p<.01, *p<.05