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Understanding attitudes towards congestion pricing: a latent variable investigation with data from four cities

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Abstract
Numerous cities around the world are considering the implementation of road pricing to ease urban traffic congestion, following on from the success in cities such as London and Singapore. However, policy makers are also all too aware of the generally negative public opinion towards such measures. This study makes use of data collected in four cities (two in Sweden, one in Finland and one in France) using a very consistent survey probing for citizens' attitudes towards pricing. We find very strong similarities across the four cities in terms of a number of underlying attitudinal constructs that help explain people's answers in a hypothetical referendum on congestion pricing. The similarities across cities indicate that the increase in the opinion towards congestion pricing once they are introduced is not primarily an effect of changes in underlying attitudes, changes in how the underlying attitudes influence the support for congestion pricing, or differences in anticipated versus experienced or perceived self-interest. Instead this effect seems to be caused by a status quo acceptance, tending to increase the support for the current situation.

Keywords: *congestion charging; pricing acceptability; road user attitudes*

JEL codes: R41, R42, R48

1 INTRODUCTION

Despite high congestion levels and strong support from transport economists, public opposition has prevented many cities from implementing congestion charges. One of the most encouraging results of the Stockholm congestion charge is therefore the gradual increase in public support once it was introduced in 2006. Increases in the support have been observed in virtually all cities where tolls or charges have been introduced: London (Schade & Baum, 2007), the Norwegian cities Bergen, Oslo and Trondheim (Tretvik, 2003), Milan (Ozer, Beria, & Pacchi, 2012), Singapore (Menon, P, & Kian-Keong, 2004) and Gothenburg (Börjesson and Kristoffersson 2015). There have also been similar experiences from the US (Anas & Lindsey, 2011).

Previous literature explains the observed increase in support for congestion charges once they are introduced mainly by the hypothesis that drivers experience larger benefits than they expected (Goodwin, 2006). This explanation, however, is not supported by Börjesson et al. (2016). The key issue for understanding why the opinion towards charging is so unstable over time lies in understanding how it is shaped. Previous literature has focused on socioeconomic factors and self-interest, i.e. to what extent drivers benefit and lose from congestion pricing, which is largely determined by

the value of time, and the paid charge, but Börjesson et al. (2015) suggest that they are also dependent on general political attitudes and views. Moreover, the categorization of explanatory variables into self-interest, socioeconomic characteristics and more general attitudes is not without ambiguity because they are highly interdependent (Hamilton et al. 2014).

The purpose of this paper is to explore how attitudes to congesting charges are formed, and which factors influence them. We use data from four European cities, two with congestion charges and two without. We base the study on a survey conducted at one point in time in Stockholm, Helsinki and Lyon, and a similar two-wave survey conducted in Gothenburg, before and after the introduction of congestion charges (Hamilton et al., 2014; Börjesson et al., 2016; Souche-Le Corvec et al., 2016). These cities were chosen because they all have some experience with proposals for congestion charges, but a varying degree of experience with the implementation of these proposals. When the survey was conducted, Helsinki was experiencing a lively debate about distance based road charging to reduce congestion. Lyon had congestion pricing during a short period in 1997 but the charges were abolished due to negative public opinion. Since the Gothenburg survey was conducted after the other three, it could be implemented as a two-wave before-and-after study that would help explore why support might increase after the introduction of charging.

Among other things, respondents are asked how they would vote in a (hypothetical) referendum regarding congestion pricing in their city. We simultaneously model the effect of latent attitudes and self-interest on the opinion towards charges and the answer in a hypothetical referendum, and let them in turn be dependent on socio-economic characteristics.

Eliasson (2014) applies theories from social psychology (Heberlein, 2012) to explain why attitudes towards congestion charges in Stockholm, and other places, have been so unstable over time. These theories suggest that when asked about opinions that are not well developed in the subjects' mind due to limited experience or weak emotional or moral values, they form an opinion based on associated well-established and moral-based attitudes. This is applicable to congestion pricing, because many people do not have strong moral-based attitudes towards economic efficiency. The surveys on congestion pricing opinions applied in the present study are therefore designed to indicate underlying attitudes towards the environment, equity, taxes, public interventions and economic policy instruments. The surveys also include questions indicating socio-economic characteristics and self-interest: monthly paid charge and the value of time (in the two cities not having congestion charges the monthly paid charge is hypothetical).

We define a model structure where the vote in the (hypothetical) referendum is explained by self-interest (measured as the stated (hypothetical) monthly paid charge) and by four latent variables indicating well-established attitudes related to environment, equity, taxes, public interventions and pricing. The survey questions indicating the established attitudes are also assumed to be explained by the latent variables. Factor analysis is used to indicate which questions are indicators of each of the four latent variables. We allow for correlation between the latent variables

and socioeconomic variables (income, education, gender and car-ownership), and allow the latent variables to, along with income, influence the value of time.

We use ordered response models to explain the respondents' vote and value of time (which both have five possible response levels). The questions indicating the established attitudes have seven possible response levels and are explained by continuous response models, since an ordered response model would have resulted in an excessive number of threshold parameters. The model is estimated for each of the four cities and for each of the two years for Gothenburg.

The remainder of this paper is organised as follows. The next section presents the data, before we turn to factor analysis in Section 3. Section 4 discusses our model structure and results, and Section 5 presents some conclusions.

2 DATA

The analysis in this paper is based on a survey conducted in three cities (Stockholm, Lyon, Helsinki) in 2011, and a similar two-wave survey conducted in Gothenburg, before and after the introduction of congestion charges in January 2013 (November 2012 and November 2013). The Swedish and Finish versions were mail-back postal surveys, whereas the French survey was a telephone survey. In all cities a random sample of adult residents was recruited to take part in the survey. There are small deviations between the 2011 surveys to fit to the local context, and slightly larger adjustments in the two-wave Gothenburg survey. The Gothenburg survey is not a panel survey, such that the samples from the two years are independent.

All 2011 surveys included a VOTE question formulated as "How would you vote if there was a referendum about the congestion charges today?". In the Stockholm questionnaire, the existing system is presented, in the Lyon questionnaire, a hypothetical system similar to the Stockholm system is presented, and in the Helsinki questionnaire, a suggested system discussed in the public debate is presented. The congestion charging systems presented in the questionnaires are described in Table 1.

The design of the systems varies across the cites; it is time-dependent in all cities except for Lyon. In the two-wave Gothenburg survey, the existing system is presented and the VOTE question was modified to "How would you vote if there was a referendum about the congestion charges and the related infrastructure package today?", since the main objective of the congestion charges was to collect revenue for financing an infrastructure package. The response alternatives include 'certainly no', 'probably no', 'undecided', 'probably yes' and 'certainly yes' in all surveys. The responses to the question in the four cities are given in Figure 1.

Table 1: Congestion charging systems presented in the surveys.

City	Stockholm	Helsinki	Lyon	Gothenburg
Population city (region)	851,000 (2.1 million)	596,000 (1.1 million)	481,000 (2.1 million)	550,000 (1 million)
The congestion charging	In/out passages from the inner city	Zone 1: 0.8€/km 06:00-09:00 and	Passages in Lyon (except for the	In/out passages from the inner city

systems described in the survey used in the hypothetical referendum.	06:30-18:30. 1€, 1.5€ or 2€ per passage. Max charge per day and car is 6€. Evenings, nights and weekends free of charge	15:00-18:00; 0.4€/km 9-15. Zone 2: 0.4€/km 6-18. Max charge per day and car is 6€. Evening, night and weekend traffics not charged.	5th and the 9th districts) and Villeurbanne priced at 3€/day or 50 €/month. Operating 24h/24 and 7 days a week.	06:00-18:30. 0.8€, 1.3€ or 1.8€ per passage. Max charge per day and car is 6€. Evenings, nights and weekends free of charge

The figure shows that the respondents in the cities having congestion charges, Stockholm and Gothenburg 2013, are more positive to congestion charges than the respondents in the cities that don't have charges. In Gothenburg, the share of respondents in favour of the charges increased from 33% to 50% (excluding the undecided) after congestion charges were introduced.

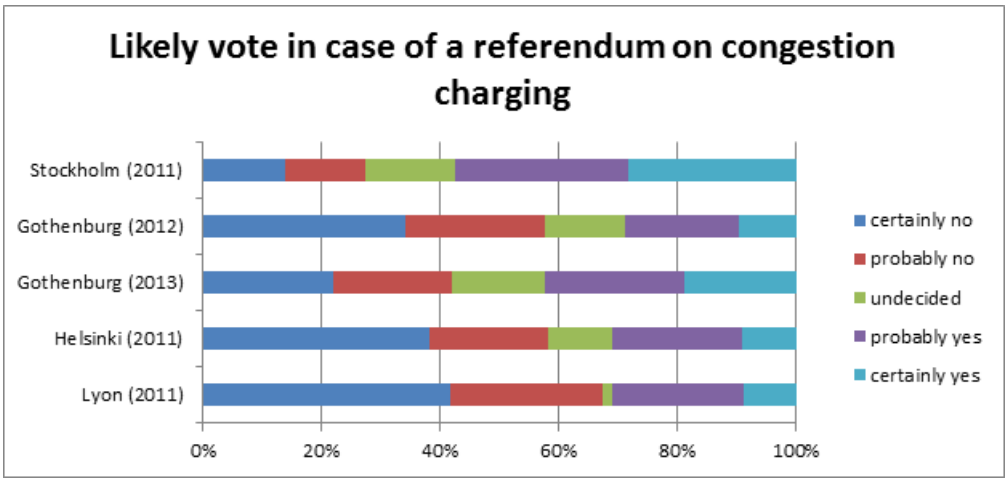

Figure 1: Stated opinion to congestion charges in four cities.

The surveys also include a number of questions designed to capture well-established and moral-based latent preferences or attitudes, anticipated to form or influence the support for congestion charges. They are related to the environment, equity, taxes, public interventions and economic policy instruments. Much effort was spent formulating the questions so that they did not directly relate to congestion charging but to more fundamental opinions assumed to be better developed in the respondents' minds and therefore more stable over time.

For the questions indicating established attitudes, the responses are given on a seven-point scale from disagree completely to agree completely. Questions designed to capture socioeconomic characteristics, asking about gender, age, household composition (number of adults and children in the household), income, employment status, and education attainment coded on four levels (0 = 'compulsory school', 1= 'college ', 2 = '<= three years of university', 3 = '> three years of university') are also included.

The responses to the statements designed to indicate established attitudes are summarised in Table 2. The responses are in general rather similar across the cities. However, there is a tendency for French respondents to agree more with statements raising equity concerns. The Swedes, and in particular respondents in Stockholm, tend to agree more with statements

proposing pricing as a means of allocating scarce resources. The Finnish respondents are least positive in relation to pricing policies. The French respondents tend to have more negative views of taxation, whereas the Swedes are most positive on taxation. Responses to the statements relating to environmental concerns are similar acrosscities . For Gothenburg, the average responses to all questions are in general stable between the two years. This is reassuring and indicates that they are indeed rather well-established stable attitudes.

Self-interest with regard to congestion charging, free public transport and building more roads is indicated by survey questions on: value of time (this question is described in Section 4), number of cars available in the household (coded on a four-level scale: 0, 1, 2, >2 cars), and trip frequencies by car, public transport and bicycle (trip frequencies are coded on a four-level scale: 0 = 'rarely or never', 1 = 'a couple of times per month', 2 = 'a couple of times per week', 3 = 'every or almost every day').

The survey in Lyon, Stockholm and Gothenburg also included a question about the number of trips per month that the respondent pays the charge (or would pay if the system was implemented). It is coded on a four-level scale: 0 = 'rarely or never', 1 = 'a couple of times per month', 2 = 'a couple of times per week', 3 = 'every or almost every day'. The survey in Helsinki asked about the number of kilometres per weekday the responded would travel within the charged zones if the suggested system was implemented.

Table 2. Average responses to questions aimed at capturing latent preferences (1= disagree completely, 4=neutral, 7= disagree completely).

	Helsinki	Lyon	Sthlm	Gbg -12	Gbg -13
Number of observations (response rate)	1837 (0.43)	1178 (0.39)	1500 (0.37)	1582 (0.40)	1426 (0.38)
It is reasonable that air tickets are more expensive for departures in the peak hours	4.2	3.5	4.6	4.5	4.6
Charges and taxes to own, park and drive a car are too high	-	-	-	4.9	4.7
It is reasonable that air traffic is subject to a special environmental tax	5.6	5.0	4.3	-	-
It is reasonable that a highway user charge is lower outside rush hours	3.9	4.5	4.3	-	-
It is reasonable that new bridges/roads are financed by road user charges	2.8	3.6	3.7	-	-
It is reasonable that charter operators raise prices when weather is bad	2.2	-	2.4	2.7	2.7
Traffic congestion is one of the worst problems in [city name]	4.7	4.9	5.1	5.0	4.9
It is fair that the authority determines who need to use a ferry with capacity constraints	2.5	2.3	3.3	3.5	3.6
It is fair to price a ferry with capacity constraints	5.1	4.2	5.6	5.1	5.3
The government should prioritize reducing differences between rich and poor	5.1	5.5	4.9	5.3	5.5
If low low-income drivers get a discount, I would become more positive to charging	4.1	4.4	3.8	3.9	3.8

Motor traffic is a large threat to Nature	4.1	5.0	4.6	4.5	4.5
It is reasonable that the noisiest cars and motorcycles are subject to a noise tax	3.6	4.5	3.8	3.7	3.8
It is reasonable that public transport fares are cheaper outside peak times	4.1	4.7	4.7	5.1	5.1
More resources should be used to protect the natural environment	5.3	6.1	5.4	5.3	5.4
If the revenue was used for public transport, I would become more positive to charging	5.0	4.5	5.8	4.6	4.7
Automated speed camera surveillance is a reasonable way to save lives in traffic	5.7	4.4	5.5	5.4	5.5
Taxes are too high in [country name]	5.2	5.3	4.8	4.5	4.2

3 FACTOR ANALYSIS

We assume that the responses to the statements in Table 2 are indicators of a set of latent attitudinal factors. To reduce the dimensionality of the statements in Table 2 and to define a set of latent attitudinal factors, a principal component analysis (PCA) with VARIMAX rotation was applied for each of the four cities. The PCA analysis resulted in four factors in all cities. In Gothenburg, the analysis resulted in the same factors for both survey years and we therefore pooled the data in the PCA analysis. The rotated factor loadings are displayed in Table 3. Only variables with factor loadings of at least 0.35 are used for interpretation.

The resulting factors all make sense and can be interpreted as latent attitudinal factors in all cities. The results of the factor analysis are shown in Table 3. The first factor indicates environmental concerns. We refer to this factor as the Green (G) factor or the environmentally friendly attitude. It is also linked to support for public interventions (including opinions such as being in favour of speed cameras or reducing differences between rich and poor). The second factor indicates a positive attitude to taxation. We refer to this as the Tax (T) factor or the pro-taxation attitude. In all cities, a negative attitude towards taxation is associated with low environmental concerns and car use.

The third factor indicates equality concerns. We refer to this as the Equity (E) factor or the pro-equity attitude. Statements indicating concerns for equity in society are negatively correlated with statements proposing pricing (such as allocating the space on the ferry to those who are willing to pay for it). The fourth factor indicates being in favour of pricing external costs (such as pricing noisy vehicles) and of pricing as an allocation mechanism of scare resources. We refer to this as the Pricing (P) attitude or the pro-pricing attitude

We stress that the factors reflect the correlation of the responses to the statements, which is an empirical issue. In other words, there is nothing fundamental showing that support for taxation is associated with low environmental concerns, but this is an empirical finding. The interpretation will be elaborated in the modelling section, where we will show how the statements factors are related to the socio-economic variables income, gender, education and the number of cars in the household.

There are not surprisingly some differences in the factors between the cities, possibly arising because each statement can be related to more than one established attitude. For instance, Statement 6 is correlated with the Pricing factor for Stockholm and Helsinki but with the Equity factor for Lyon, which makes sense since equity are often seen a negative effect of pricing policies. Moreover, Statement 14 is correlated with the Pricing in Helsinki and the Equity factor in Lyon. Statements 11 and 10 are correlated with in the Equity factor in two cities and with the Pricing factor in two cities, presumably for the same reason.

Statement 7 is correlated with the Green factor in all cities but also with the Tax factor in Lyon and Gothenburg. This indicates that in Lyon and Gothenburg, environmental concerns are negatively correlated with a pro-tax attitude. Statement 12 is correlated with the Tax factor in Lyon and Stockholm. In Gothenburg Statement 7 is instead correlated with the Tax factor and Statement 12 with the Green factor. These results suggest that respondents opposing taxes also have fewer concerns with car use and environmental degradation. Statement 9 is correlated with the Equity factor in Helsinki, Stockholm and Gothenburg and with the Green factor in Lyon, Stockholm and Gothenburg. The correlation between environmental concern and left-wing attitudes (pro-equity and pro-taxation) is plausible given that green parties are now well established as being left-wing in all these counties.

In Helsinki Statement 13 is correlated with the Tax factor, whereas it is correlated with the Pricing factor in the Swedish cities. Statements 16 are correlated with different factors in the cities (Tax, Green or Pricing factor), which makes sense since a noise tax can be associated with all these attitudes.

4 JOINT MODEL FOR FORMATION AND IMPACT OF ATTITUDES

The factor analysis work in Section 3 has highlighted the existence of key groupings of the 18 attitudinal questions. This suggests the presence of a number of underlying attitudes that could help explain respondents' views on congestion pricing. In the present section, we go one step further, by investigating, in a joint model, how these attitudes are formed, i.e. what socio-demographic characteristics can help explain attitudes, and what their impact is on the answers to questions on referendum voting and willingness-to-pay for travel time reductions.

4.1 Specification

We follow the developments in Section 3 by using the same four attitudinal constructs, which we refer to as:

- environmentally friendly attitude
- pro-taxation attitude
- pro-equity attitude
- pro-pricing attitude

City	Helsinki				Lyon				Stockholm				Gothenburg			
Factor	G	T	E	P	G	T	E	P	G	T	E	P	G	T	E	P
Taxes are too high in [country name]		-0.58				-0.71			-0.37	-0.68				-0.88		
Automated speed camera surveillance is a reasonable way to save lives in traffic	0.57								0.62				0.66			
If the revenue was used for public transport, I would become more positive to charging									0.56							
More resources should be used to protect the natural environment	0.62				0.7				0.77				0.65			
It is reasonable that public transport fares are cheaper outside peak times				0.59				0.76								
It is reasonable that the noisiest cars and motorcycles are subject to a noise tax				0.52			-0.52					0.49				
Motor traffic is a large threat to Nature	0.7				0.46	-0.43			0.79				0.67	0.36		
If low low-income drivers get a discount, I would become more positive to charging			0.72				0.5				0.71				0.72	
The government should prioritize reducing differences between rich and poor			0.7		0.68				0.49		0.62		0.47		0.47	
It is fair that the authority determines who need to use the ferry															0.71	
It is fair to price the ferry[3]				0.46			-0.55				-0.49		0.47			0.39
Traffic congestion is one of the worst problems in [city name]			0.49			-0.7				-0.67			0.56			
It is reasonable that charter operators raise prices when weather is bad		0.5										0.73				0.79
It is reasonable that new bridges/roads are financed by road user charges				0.7			-0.48									
It is reasonable that a highway user charge is lower outside rush hours				0.75				0.76		-0.45		0.53				
It is reasonable that air traffic is subject to a special environmental tax		0.57			0.58				0.55	0.39		0.36				
Charges and taxes to own, park and drive a car are too high														-0.82		
It is reasonable that air tickets are more expensive for departures in the peak hours.		0.72					-0.43	0.47				0.74				0.78

Table 3: Factor analysis results: The factors are denoted Green (G), Tax (T), Equity (E) and Pricing (P)

Let $\alpha_{n,1}$ be one of the four attitudinal constructs for respondent n, say the environmentally friendly attitude. In common with extensive recent work in choice modelling (see e.g. Ben-Akiva et al., 2002; Bolduc et al., 2005), we recognise that attitudes themselves are not observed and hence are latent constructs, for which only part of the value can be attributed to observed respondent characteristics. We thus have that:

$$\alpha_{n,1} = f(z_n, \gamma_1) + \eta_1, \quad (1)$$

where η_1 is a random component which follows a standard normal distribution, i.e. $\eta_1 \sim N(0,1)$. The first component, $f(z_n, \gamma_1)$, represents the deterministic part of the latent attitude, where $\gamma_1$is a vector of estimated parameters which explain the role of a set of socio-demographic characteristics, z_n (through an interaction defined by the functional form of *f()*, which is typically linear), in the formation of $\alpha_{n,1}$. In our work, four socio-demographic attributes were used for this purpose, namely:

- income
- gender
- education (university degree or not)
- number of cars in the household

Income and the number of cars could influence the latent attitude through self-interest. For instance respondents with more cars may enjoy or rely more on driving than others and may therefore be less concerned about damage to the environment. The education attainment and gender would influence the attitudes for other reasons, such as experiences and understanding of the society. Of course, for car ownership, it is also possible that the causality goes in the opposite direction.

Let us now define I to be the set of attitudinal questions which have been used in the factor analysis, say $I = < I_1, \dots, I_K >$. The latent variables above are then be used to explain the answers to these attitudinal questions. While the attitudinal questions have an ordered response format, the use of an ordered measurement model would, given the high number of levels for each indicator, have necessitated the estimation of a very large number of threshold parameters. For this reason, we use a continuous response model.

We start by centering each of the attitudinal indicators on zero, i.e. subtracting the mean, such that, for example for respondent n, $I'_{n,1} = I_{n,1} - \overline{I_1}$, where $\overline{I_1}$ is the sample mean for the first attitudinal indicator. Again using the example of $I'_{n,1}$, we would then write

$$I'_{n,1} = \zeta_{1,1}\alpha_{n,1} + \zeta_{1,2}\alpha_{n,2} + \zeta_{1,3}\alpha_{n,3} + \zeta_{1,4}\alpha_{n,4} + \xi_{n,1}, \quad (2)$$

where $\xi_{n,1}$ is a random disturbance, with $\xi_{n,1} \sim N(0, \sigma_1)$, where σ_1 needs to be estimated. The estimated parameter $\zeta_{k,j}$ gives the impact of the latent variable j on the attitudinal indicator k, where the decision on whether to estimate a given $\zeta_{k,j}$ parameter as opposed to fixing it to zero is informed by the factor analysis from Section 3. In model estimation, we seek to maximise the likelihood of the observed value for each indicator.

This requires the probability of the actual observed value for a given indicator variable, which, under the above error assumptions, is given by

$$LI_{n,k} = \frac{e^{-\frac{\left(I'_{n,k}-\zeta_{k,1}\alpha_{n,1}-\zeta_{k,2}\alpha_{n,2}-\zeta_{k,3}\alpha_{n,3}-\zeta_{k,4}\alpha_{n,4}\right)^2}{2{\sigma_k}^2}}}{\sigma_k\sqrt{2\pi}}. \quad (3)$$

This specification is used for the 18 different attitudinal indicators used in our study, not all of which apply to every dataset. In addition, the model uses the latent attitudinal constructs to explain respondents' answers to the VOTE question described in Section 2, and a WTP question. The latter question is formulated as a choice to pay a charge or not on a hypothetical commuting trip:

"On your commute by car you pass a bridge crossing a river, but one day the bridge closes for repairs. Another bridge is available if you are willing to make a detour increasing the travel time by 20 minutes. Commuters also have the option to use a ferry to save these 20 minutes. What is the maximum price you would be willing to pay for a ferry ticket?"

The response alternative ranged from 0 to 18 €/h on a seven level scale. The answer to the WTP question can be interpreted as a crude assessment of the value of time, and the resulting value of time distribution is close to that estimated in the Swedish value of time study (Börjesson and Eliasson, 2014). However, the response to this question can also be interpreted as a proxy for the willingness to pay congestion charges and not merely as a (neutral) WTP question. This is the main motivation for assuming that also the WTP question depends on the latent attitudes.

Hence, for the WTP question, we have seven possible response levels, while for the VOTE question, there are only five. In both cases, we use an ordered response model to explain the answers, where with only two such dependent variables, the number of thresholds to estimate is manageable.

In addition to using the four latent attitudes to explain the responses, we also factor in a direct impact of income on the WTP response, and of the anticipated frequency of toll payment on the VOTE response. Our rationale for not using the anticipated frequency of toll payment in the attitudinal constructs is that we wish them to relate to long term underlying attitudes. Figure 2 explains the structure of the model.

Let us first define two new constructs as follows:

$$\begin{aligned}\alpha_{n,WTP} &= \zeta_{WTP}\alpha_{n,1} + \zeta_{WTP}\alpha_{n,2} + \zeta_{WTP}\alpha_{n,3} + \zeta_{WTP}\alpha_{n,4} + \gamma_{inc,WTP}income_n \\ \alpha_{n,VOTE} &= \zeta_{VOTE}\alpha_{n,1} + \zeta_{VOTE}\alpha_{n,2} + \zeta_{VOTE}\alpha_{n,3} + \zeta_{VOTE}\alpha_{n,4} + \gamma_{freq,VOTE}freq_n,\end{aligned} \quad (4)$$

with $income_n$ and $freq_n$ giving the income and anticipated toll frequency, respectively, for person *n*.

Using the example of the WTP, we would then have that the probability for the actual observed response for respondent *n* is given by:

$$LI_{n,WTP} = \sum_{s=1}^{7} \delta_{WTP,n,s} \left(\frac{e^{t_{WTP,s} - \alpha_{n,WTP}}}{1+e^{t_{WTP,s} - \alpha_{n,WTP}}} - \frac{e^{t_{WTP,s-1} - \alpha_{n,WTP}}}{1+e^{t_{WTP,s-1} - \alpha_{n,WTP}}} \right), \quad (5)$$

where $\delta_{WTP,n,s}$=1 if and only if respondent n chooses answer s for the WTP question. The $t_{WTP,s}$ parameters are thresholds that are to be estimated, with the normalisation that $t_{WTP,0} = -\infty$ and $t_{WTP,7} = +\infty$. A corresponding approach is used for the VOTE question, with the difference that the summation is across just five levels, and $t_{VOTE,5} = +\infty$.

The combined likelihood function for respondent n is now given by:

$$L_n = LI_{n,WTP} \cdot LI_{n,VOT} \cdot \prod_{k=1}^{K} LI_{n,k} \quad (6)$$

The individual elements on the right hand side of this likelihood function are all conditional on a given value for the four attitudinal constructs $\alpha_{n,1}$ to $\alpha_{n,4}$. These terms however follow a random distribution, and the unconditional (on a given value of the latent variables) likelihood function is then given by:

$$L_n(\gamma, \zeta, t, \sigma) = \int_{\eta} LI_{n,WTP} \cdot LI_{n,VOT} \cdot \prod_{k=1}^{K} LI_{n,k} \, \phi(\eta) d\eta, \quad (7)$$

where η is a vector comprising the four standard normally distributed error terms and where $\phi(\eta)$ is the associated standard normal density function. This likelihood for respondent n is conditional on:

- the vectors of socio-demographic interaction parameters γ;
- the parameters ζ explaining the impact of the latent variables on the attitudinal indicators, the WTP and VOTE questions;
- the threshold parameters t for the ordered response model; and
- the standard deviation parameters σ for the continuous response models.

In model estimation, we maximise the log-likelihood function, given by:

$$LL(\gamma, \zeta, t, \sigma) = \sum_{n=1}^{N} \ln L_n(\gamma, \zeta, t, \sigma) = \sum_{n=1}^{N} \ln \left(\int_{\eta} LI_{n,WTP} LI_{n,VOT} \prod_{k=1}^{K} LI_{n,k} \, \phi(\eta) d\eta \right). \quad (8)$$

The integral in this likelihood function does not have a closed form solution, and numerical approximation is used instead, with:

$$SLL(\gamma, \zeta, t, \sigma) = \sum_{n=1}^{N} \ln \sum_{r=1}^{R} LI_{n,WTP}(\alpha_{n,r}) LI_{n,VOT}(\alpha_{n,r}) \prod_{k=1}^{K} LI_{n,k}(\alpha_{n,r}). \quad (9)$$

where $\alpha_{n,r}$ is a draw from the randomly distributed α_n vector, which comprises $\alpha_{n,1}$ to $\alpha_{n,4}$. In model estimation, we made use of 100 Halton draws, and all models were coded and estimated in Ox 6.2 (Doornik, 2001).

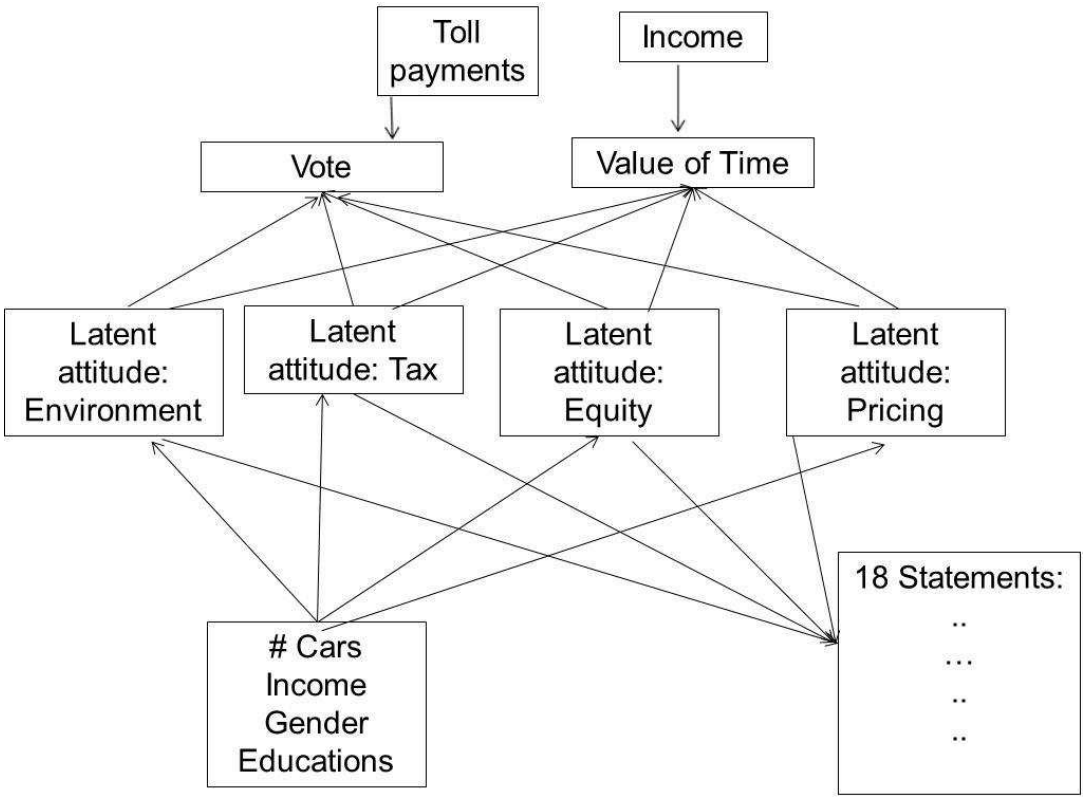

Figure 2: Model structure

4.2 Results

Before turning to the detailed results, it is worth noting that the Gothenburg sample consisted of data from two years, before and after the introduction of pricing. We initially estimated a generic model and two year specific models. A χ^2 test of parameter restriction rejected the assumption of homogeneity in estimates across the two samples (LR-test value of 242.8, with a critical χ^2_{63} value of 82.53). We next allowed for separate effects by year (2012 and 2013) for the following components:

- the impact of gender (i.e. male-female differences) on the four latent attitudes
- the impact of the number of cars on the pro-environment attitude
- the thresholds for the measurement model for the VOTE question

After treating these parameters as year-specific, and once again conducting a χ^2 test of parameter restriction comparing the model to one with year specific estimates for all parameters, we can no longer reject the assumption of homogeneity in the remaining parameters (LR-test value of 62.6, with a critical χ^2_{54} value of 72.15). The year specific threshold parameters take care of the more positive response to the VOTE in the 2013 sample.

The detailed estimation results are presented in Table 5. The table contains a large number of estimated parameters, and we see strong consistency in terms of the impacts of latent variables on attitudinal statements with our findings from the factor analysis. We thus focus instead on the role of socio-demographics in the formation of attitudes, and the impact of the latent attitudes on the responses to the WTP and VOTE questions.

These findings are summarised in Table 4 where a simplified notation is used. For impacts that are significant at the 99% level, we use --- and +++ for negative and positive impacts, respectively, with --/++ used for impacts that are significant at the 95% level, and -/+ for impacts that are significant at the 90% level.

We first see that income has a positive and significant impact on the stated WTP in all four cities, where this is significant at the 90% level for Helsinki, and at the 99% level in the remaining three cities. Similarly, the anticipated toll frequency has a negative impact on the response to the VOTE question, significant at the 99% level in all four cities. This indicates that respondents become more negative to charging the more they are (expecting to be) charged.

Turning to the environmentally friendly attitude, across all four cities, those respondents with more environmentally friendly attitudes respond more positively in the referendum question. They also indicate a higher WTP except in Lyon, despite the fact that, in two of the three cities with a significant effect, they tend to have lower income than average. The sign of that effect is consistent with the answer to the VOTE question, i.e. an environmentally friendly attitude also makes the respondents more willing to pay a higher charge reduce their commuting time. We cannot rule out the possibility of some reversed causality or confounding in the relationship between the latent attitudes and the WTP (i.e. both WTP and the latent attitude correlate with the third unobserved variable). Reversed causality and confounding are however not likely to influence the relationship between the latent attitudes and the VOTE, given that the former are so stable between the years, even when the response to the VOTE becomes more positive.

Table 4: Summary results for joint models

		impact on		explanators			
		VOTE	**WTP**	**income**	**female**	**university**	**cars**
Income	Helsinki	N/A	+				
	Stockholm	N/A	+++				
	Lyon	N/A	+++				
	Gothenburg	N/A	+++				
anticipated toll frequency	Helsinki	---	N/A				
	Stockholm	---	N/A				
	Lyon	---	N/A				
	Gothenburg	---	N/A				
ENVIRONMENTALLY FRIENDLY ATTITUDE	Helsinki	+++	++	---	+++		
	Stockholm	+++	+++		+++	+++	---
	Lyon	+++			+		
	Gothenburg	+++	+++	---	+++ (2012) --- (2013)	++	--- (2012)
PRO-TAXATION ATTITUDE	Helsinki	+++	+++				
	Stockholm	+++	+++			+++	---
	Lyon	+++			---	+++	
	Gothenburg	+++	+++	+++		+++	---
PRO-EQUITY ATTITUDE	Helsinki			---	+++		
	Stockholm	---	---	---	+++		

	Lyon	---	---	-	+++	--	
	Gothenburg			---	+++ (2012) + (2013)		+++
PRO-PRICING ATTITUDE	Helsinki	+++	+++	+			
	Stockholm	+++	+++	+++	---	+++	---
	Lyon					---	
	Gothenburg	+++	+++	+++	--- (2012)	+++	---

We observe that higher income leads to a less environmentally friendly attitude in Helsinki and Gothenburg. Self-interest could play a role here, because high income people consume more and tend therefore to use more energy. Likewise, those with more cars exhibit less environmentally friendly attitudes in Stockholm and Gothenburg (2012 only). This effect might also arise from self-interest or being subject to reversed causality. The effect of self-interest on the VOTE might in this way be reinforced through the environmental attitude. Women overall have a more environmentally friendly attitude, where this is however only weakly significant in Lyon, and where, in Gothenburg, the trend between women and men is reversed between 2012 and 2013. Higher education makes respondents in Stockholm and Gothenburg more environmentally friendly.

For the pro-taxation attitude, the impacts on the VOTE and WTP questions are consistent with expectation, showing, across all four cities, a more positive response to the VOTE question for respondents who are more pro-taxation. For the WTP question, there is again a positive impact in all cities except for Lyon, i.e. positive attitudes to taxation imply a higher willingness to pay for the ferry ticket. Higher income respondents in Gothenburg are more pro-taxation, while those with more cars in Stockholm and Helsinki are more anti-taxation. The latter suggests again that being negative about taxation is associated with car use as indicated by the factor analysis in Section 3. The impact of having more cars on the pro-taxation attitude probably also reinforces the effect of self-interest on the VOTE, tending to make respondents with more cars being less positive to charging. Women in Lyon are more anti-taxation, while except for Helsinki, more highly educated respondents are more pro-taxation.

For the pro-equity attitude, the impact of this latent variable on the VOTE and WTP question is significant only in Stockholm and Lyon, where we see that respondents who are more pro-equity respond more negatively to the referendum question and also indicate a willingness to pay for the ferry ticket. We see that higher income respondents have a less positive attitude to equity (possibly due to self-interest), where the effect has a lower level of statistical significance in Lyon. The opposite applies to respondents with more cars in Gothenburg. Across all four cities, female respondents have a more positive pro-equity attitude, while, perhaps more difficult to explain, those with higher education in Lyon are less pro-equity.

In all cities but Lyon, pro-pricing respondents give a more positive response in the referendum question and indicate a higher WTP. Hence, respondents with a positive attitude to pricing are also more inclined to pay a charge to reduce commuting time. However, in Lyon there is no impact of the latent attitude on the VOTE and WTP question in this sample. It should be noted that, in Lyon, the three attitudinal questions

with significant impacts by the latent attitude all related to differences in pricing between peak and off-peak, as opposed to pricing in general. This could be a potential reason for the difference in results because the suggested changing scheme in Lyon is not time-differentiated as in the other cities. The pro-pricing attitudes also seems to pick up a different effect in Lyon, with higher education making respondents respond more negatively to the attitudinal questions regarding peak-pricing. In the other cities higher education makes respondents more pro-pricing.

For the two Swedish cities we see a very consistent pattern with higher income people more pro-pricing (also in Helsinki, albeit only significant at the 90% level), while respondents from households with more cars are less pro-pricing. Both effects could at least partly be explained by self-interest. As before, the effects on the latent attitude tend to reinforce the effect of self-interest on the VOTE. Male and more highly educated respondents are more pro-pricing.

The above discussion has highlighted some key differences across the four cities, but has also showed strong similarities. In all cities, our results indicate how policy makers can increase the support for congestion charging by framing or marketing the policy in a certain way. For instance, our results suggest that by framing congestion pricing as a green policy and a pricing policy targeted specifically at reducing peak congestion (rather than just punishing car drivers in general or as a fiscal policy) might increase the support for the charges through these more stable attitudes. Likewise, designing the system and framing it so as to avoid negative equity effects (for instance by spending the revenue for subsidising lower public transport fares) could improve the attitude towards congestion charges. Finally, a clear message to policy makers is not to frame congestion charges as a fiscal policy to increase taxes.

Before closing, it is worth briefly revisiting the differences between the 2012 and 2013 surveys for Gothenburg. We noted that women (relative to men) become less environmentally friendly, less pro-equity but also less anti-pricing, while the relationship between the number cars and the environmental attitude disappears in 2013. We noted that a χ^2 test of parameter restriction does not reject the assumption of homogeneity in the remaining parameters after treating these parameters, including the thresholds for the measurement model for the VOTE question, as year-specific. This indicates that the latent attitudes have a similar impact on the VOTE before and after the introduction of the charges. However, from studying the results for thresholds in Table 5, we can see that the change in the threshold parameters for the measurement model for VOTE clearly reflects the more positive referendum answers in 2013 compared to 2012, with a shift to the left for all thresholds.

This gives an indication of the underlying driver of the more positive attitude to the charges. The support has not increased because the charges have been reframed or marked as being associated with different underlying attitudes. Instead the change in the threshold parameters for the measurement model for VOTE indicates that it is simply status quo acceptance that is driving the increased support for the charges.

5 CONCLUSIONS

We find that the latent attitudes and self-interest strongly influence the support for congestion charges (VOTE) and the willingness to pay (WTP) a charge to reduce commuting time. This supports the hypothesis from the introduction, stating that when respondents are asked about an opinion regarding a new issue where they do not have a well-developed opinion, they construct an opinion based on a set of more well-defined and stable latent attitudes or values and their (anticipated or experienced) self-interest. The hypothesis that the option towards congestion charges is a relatively shallow construct based on other more well-defined attitudes would also explain why the opinion towards congestion pricing can change so rapidly over time, as observed in cities introducing congestion pricing.

From a policy perspective, the insight that the opinion towards congestion charges is formed based on a set of more well-defined and stable attitudes can be used by policy makers to increase the support for congestion charges by framing or marketing them in a favourable way. Heberlein (2012) gives a number of examples where the public support for a policy has been influenced by how the policy makers have framed them. One of the reasons for the high support for the charges in Stockholm might be the strong framing of them as a green policy specifically targeting peak road congestion. One reason for the lower support for the charges in Gothenburg might be the strong framing of them as a fiscal policy increasing taxation and less focus on the congestion reduction.

Our factors capturing stable attitudes can also be interpreted in light of a right-left political spectrum, where environmentally friendly and pro-equity attitudes would be on the left and pro-pricing and anti-taxation attitudes on the right. Interestingly, there is one attitude on the left and one on the right increasing with support for congestion charges, and one attitude to the left and one on the right reducing the support. This divide on the right-left political spectrum regarding the support for congestion pricing might be one reason for the difficulty of getting a majority for implementing it in most cities.

We also find that the attitudes have consistent effects on the VOTE and on the WTP, i.e. respondents with a more positive opinion towards congestion pricing in their city are also more willing to pay a higher charge to reduce their own commuting time. We cannot rule out the possibility of reversed causality or confounding in the relationships between some of the latent attitudes and the WTP, i.e. that a high WTP makes a respondent more positive to pricing and taxation in general, and less concerned about equity issues due to self-interest.

Our results further suggest that the attitudes are influenced by self-interest, for instance that high income respondents are more pro-pricing and less concerned about equity and that respondents having more cars are less concerned about environmental damage. The effect of self-interest on the attitudes is likely to reinforce the direct effect of self-interest on the opinion to congestion pricing. This implies that it is less meaningful trying to distinguish the impact of self-interest and latent attitudes on attitudes/preferences for congestion pricing.

The model also shows that attitudes are not only influenced by socio-economic characteristics related to self-interest, such as income and number of cars in the

household, but also by educational attainment and gender that do not reflect self-interest.

Both attitudes and self-interest have a similar impact on the support for congestion pricing in all cities, although the baseline support differs considerably depending on the experience of congestion pricing. These impacts differ the most between Lyon and the other cities, possibly due to the different survey method in Lyon, but possibly also because the design of the proposed charging system was different in Lyon (a flat rate rather than a time-dependent one). The otherwise similar patterns across cities indicates that the increase in the opinion towards congestion charges once they are introduced is not primarily an effect of changes in underlying attitudes, in how the congestion charges are framed or marked in relations to this attitudinal values, or anticipated versus experienced or perceived self-interest. This effect rather seems to be caused by a status quo bias, tending to increase the support for the current situation in both situations. This conclusion is also supported by the result of the analysis of the Gothenburg samples, showing that the main difference between the two yearly samples before and after introduction of congestion charges, 2012 and 2013, is a shift in the baseline VOTE intention, but that the effect of the attitudes and (anticipated or experienced) self-interest on the VOTE otherwise remained relatively stable.

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Table 5: Detailed estimation results for joint models

			Helsinki		Stockholm		Lyon		Gothenburg	
		Respondents	**1,178**		**1,837**		**1,500**		**3,111**	
		Final LL	**-36,359.90**		**-52,512.80**		**-42,313.80**		**-75,471.00**	
			est.	**rob. t-rat.**	**est.**	**rob. t-rat.**	**est.**	**rob. t-rat.**	**est.**	**rob. t-rat.**
		impact of income on WTP	0.0887	1.76	0.0143	3.67	0.1656	3.69	0.0127	4.20
		impact of anticipated toll frequency on VOTE	-0.0138	-5.73	-0.0314	-3.15	-0.0593	-6.11	-0.0404	-7.68
		impact on VOTE for frequency non-reporters	0.3986	2.14	0.0000	-	0.0000	-		
ENVIRONMENTALLY FRIENDLY ATTITUDE	*impact of latent attitude on attitudinal questions and VOTE/WTP*	*It would be reasonable if air traffic was subject to a special environmental tax*			1.0448	17.97	0.7538	7.71		
		Traffic congestion is one of the worst problems in [city name]							0.7328	15.93
		It is fair to price the ferry							0.2057	3.89
		The government should prioritize reducing differences between rich and poor			0.8359	13.44	0.6957	8.42	0.7424	16.64
		Motor traffic is a large threat to Nature	1.1649	18.22	1.2329	27.07	0.7106	9.64	1.2149	27.27
		More resources should be used to protect the natural environment	0.8167	14.38	1.1147	22.62	0.7135	12.38	1.0261	27.32
		I the revenue was used for public transport, I would be more positive to congest. charging			0.8002	16.34				
		Automated speed camera surveillance is a reasonable way to save lives in traffic	0.7641	11.65	0.8004	15.51			0.8828	19.74
		Taxes are too high in [country name]			-0.6311	-10.56				
		impact of latent variable on VOTE	0.8354	7.62	1.2198	13.21	0.8086	5.91	0.7771	11.13
		impact of latent variable on WTP	0.1738	1.98	0.1998	3.44	-0.0754	-1.03	0.2525	4.89
	impact of socio-demographics on latent variable	income	-0.1166	-4.71	-0.0029	-1.36	-0.0393	-1.39	-0.0038	-1.95
		female (all datasets except 2013 sample for Gothenburg)	0.6150	7.67	0.4018	7.24	0.1090	1.64	0.4574	7.47
		female (only for 2013 sample for Gothenburg)							-0.2307	-3.26
		university educated	-0.1139	-1.26	0.1599	2.69	-0.0149	-0.17	0.0676	1.31
		number of cars in household (all datasets except 2013 sample for Gothenburg)	0.0039	0.92	-0.1460	-4.70	0.0018	0.45	-0.1298	-4.40
		number of cars in household (only for 2013 sample for Gothenburg)							0.0279	1.03
PRO-TAXATION ATTITUDE	*impact of latent attitude on attitudinal questions and VOTE/WTP*	*I would be reasonable if air tickets are more expensive for departures in the peak hours*	1.1923	8.58						
		It would be reasonable if air traffic was subject to a special environmental tax	0.5352	6.83	0.5409	8.39				
		It is reasonable that a highway user charge is lower outside rush hours			-0.5106	-6.50				
		Charges and taxes to own, park and drive a car are too high							-1.6491	-49.00

		Charter operator raises its prices when weather is bad	0.6953	6.78						
		Traffic congestion is one of the worst problems in [city name]			-0.6532	-11.03	-0.7659	-10.40		
		Motor traffic is a large threat to Nature					-0.4863	-6.36	0.4602	12.52
		Taxes are too high in [country name]	-0.7051	-6.55	-1.2593	-18.59	-0.9531	-11.87	-1.4023	-37.79
		impact of latent variable on VOTE	0.4714	3.81	0.6485	8.19	0.3613	2.92	1.1336	20.07
		impact of latent variable on WTP	0.4262	3.61	0.2025	2.84	0.0806	1.14	0.4999	11.25
	impact of socio-demographics on latent variable	income	0.0183	0.60	0.0003	0.11	0.0254	0.79	0.0091	4.66
		female (all datasets except 2013 sample for Gothenburg)	-0.1379	-1.46	-0.0780	-1.16	-0.5074	-6.65	-0.0326	-0.66
		female (only for 2013 sample for Gothenburg)							-0.0087	-0.15
		university educated	0.1329	1.24	0.4816	5.89	0.6596	7.17	0.6103	11.40
		number of cars in household	-0.0068	-1.21	-0.1141	-3.03	-0.0059	-1.26	-0.2712	-11.33
PRO-EQUITY ATTITUDE	*impact of latent attitude on attitudinal questions and VOTE/WTP*	*I would be reasonable if air tickets are more expensive for departures in the peak hours*					-0.5621	-7.43		
		It would be reasonable if new bridges/roads were financed by road user charges					-0.7149	-9.45		
		Traffic congestion is one of the worst problems in [city name]	0.5888	8.22						
		It is fair that the authority determines who need to use the ferry							0.6682	9.38
		It is fair to price the ferry			-0.3682	-4.91	-1.0253	-13.35		
		The government should prioritize reducing differences between rich and poor	1.0428	12.42	0.9252	11.22			0.6435	11.77
		If low low-income drivers get a discount, I would be more positive to congest. charging	0.9302	14.19	0.8611	11.99	0.2976	8.56	1.1625	15.32
		It would be reasonable if the noisiest cars and motorcycles were subject to a noise tax					-0.7341	-9.54		
		impact of latent variable on VOTE	0.1534	1.54	-0.2377	-2.41	-1.8702	-7.99	-0.0292	-0.41
		impact of latent variable on WTP	-0.1305	-1.47	-0.2886	-3.34	-0.6818	-7.87	0.0942	1.45
	impact of socio-demographics on latent variable	income	-0.2110	-6.58	-0.0152	-4.98	-0.0464	-1.71	-0.0164	-5.98
		female (all datasets except 2013 sample for Gothenburg)	0.6087	6.56	0.2995	3.71	0.1688	2.91	0.2689	3.77
		female (only for 2013 sample for Gothenburg)							0.1388	1.87
		university educated	0.1050	0.95	0.0378	0.45	-0.1432	-1.95	0.0622	0.94
		number of cars in household	-0.0038	-0.61	0.0654	1.62	0.0013	0.32	0.0828	2.49
PRO-PRICING ATTITUDE	*impact of latent attitude on attitudinal questions and VOTE/WTP*	*I would be reasonable if air tickets are more expensive for departures in the peak hours*			1.2011	17.85	0.4844	5.98	1.2599	25.34
		It would be reasonable if air traffic was subject to a special environmental tax			0.5658	9.17				
		It is reasonable that a highway user charge is lower outside rush hours	1.4952	15.91	0.6521	9.34	1.2317	10.48		
		It would be reasonable if new bridges/roads were financed by road user charges	1.3176	17.39						

		Charter operator raises its prices when weather is bad			0.9871	17.76			1.1383	23.66
		It is fair to price the ferry	0.6487	8.29					0.3465	6.43
		It would be reasonable if the noisiest cars and motorcycles were subject to a noise tax	1.0057	11.91	0.7151	10.25				
		It would be reasonable if public transport fares were cheaper outside peak times	0.8127	7.84			1.4820	10.40		
		impact of latent variable on VOTE	1.1186	9.70	0.6267	8.15	0.0420	0.46	0.4146	6.84
		impact of latent variable on WTP	0.5735	6.26	0.5006	7.02	0.0238	0.35	0.4571	7.64
	impact of socio-demographics on latent variable	income	0.0435	1.84	0.0129	5.48	0.0193	0.79	0.0123	5.45
		female (all datasets except 2013 sample for Gothenburg)	-0.0458	-0.70	-0.3930	-6.11	0.0477	0.82	-0.2544	-4.16
		female (only for 2013 sample for Gothenburg)							0.0425	0.62
		university educated	-0.0683	-0.80	0.4336	5.85	-0.2478	-3.55	0.4468	7.40
		number of cars in household	0.0014	0.36	-0.1832	-5.36	0.0012	0.34	-0.2268	-7.96
shape parameters for measurement models	*threshold parameters for ordered logit measurement model for VOTE*	threshold 1 (all datasets except 2013 sample for Gothenburg)	-1.0252	-9.47	-2.6724	-26.14	-1.0070	-7.57	-1.4917	-17.16
		threshold 2 (all datasets except 2013 sample for Gothenburg)	0.2738	2.54	-1.4884	-19.13	0.8780	6.89	-0.0059	-0.07
		threshold 3 (all datasets except 2013 sample for Gothenburg)	1.0000	8.60	-0.5147	-7.22	1.0115	7.68	0.9108	10.82
		threshold 4 (all datasets except 2013 sample for Gothenburg)	3.1070	17.41	1.2239	14.75	3.4549	11.83	2.8156	24.14
		threshold 1 (only for 2013 sample for Gothenburg)							-2.0881	-23.04
		threshold 2 (only for 2013 sample for Gothenburg)							-0.6922	-8.95
		threshold 3 (only for 2013 sample for Gothenburg)							0.2816	3.61
		threshold 4 (only for 2013 sample for Gothenburg)							2.0006	19.85
	threshold parameters for ordered logit measurement model for WTP	threshold 1	-0.6413	-4.48	-1.3765	-10.89	-0.1070	-1.17	-0.9211	-10.52
		threshold 2	0.6408	4.53	0.0412	0.36	1.0467	10.96	0.6828	8.03
		threshold 3	2.1391	13.46	1.6750	14.14	2.4315	20.12	2.3069	24.26
		threshold 4	3.2272	17.54	2.7226	20.88	3.4948	22.71	3.3726	29.60
		threshold 5	3.6615	18.42	3.3090	23.22	3.9205	22.20	4.0834	30.02
		threshold 6	5.8337	13.87	4.4408	24.49	5.9125	15.07	5.1435	27.14
	standard deviations for normal density measurement model for attitudinal questions	*I would be reasonable if air tickets are more expensive for departures in the peak hours*	1.6391	18.33	1.6750	36.10	1.9760	59.06	1.6403	45.61
		It would be reasonable if air traffic was subject to a special environmental tax	1.4112	31.01	1.5954	43.52	1.8675	40.36		
		It is reasonable that a highway user charge is lower outside rush hours	1.7122	23.65	2.0221	55.89	1.7628	21.77		
		It would be reasonable if new bridges/roads were financed by road user charges	1.4291	24.72			1.9323	56.93		
		Charges and taxes to own, park and drive a car are too high							1.0495	30.24

	Charter operator raises its prices when weather is bad	1.4927	30.38	1.6555	43.33			1.6445	49.04
	Traffic congestion is one of the worst problems in [city name]	1.6889	48.43	1.6041	47.88	1.5173	33.69	1.7189	74.20
	It is fair that the authority determines who need to use the ferry							2.0528	72.56
	It is fair to price the ferry	1.8154	46.83	1.7127	45.69	2.0855	51.97	1.9106	78.07
	The government should prioritize reducing differences between rich and poor	1.4980	24.51	1.3960	24.58	1.6610	37.37	1.4321	48.35
	If low low-income drivers get a discount, I would be more positive to congest. charging	1.5354	33.44	1.5045	36.13	0.9562	56.31	1.6376	31.89
	Motor traffic is a large threat to Nature	1.3444	25.58	1.3405	35.54	1.4577	31.72	1.3350	41.80
	It would be reasonable if the noisiest cars and motorcycles were subject to a noise tax	1.9722	46.80	2.1497	68.11	2.1145	63.47		
	It would be reasonable if public transport fares were cheaper outside peak times	2.0579	48.89			1.5912	12.82		
	More resources should be used to protect the natural environment	1.2728	32.70	1.0952	30.48	1.0651	25.99	1.1936	46.66
	I the revenue was used for public transport, I would be more positive to congest. charging			1.3450	39.59				
	Automated speed camera surveillance is a reasonable way to save lives in traffic	1.6068	35.75	1.5166	46.81			1.5407	56.78
	Taxes are too high in [country name]	1.6393	33.19	1.4700	28.82	1.6476	31.34	1.5240	50.04

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