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**Draft paper**

Paper Title : « Resistance to reform : what's new 20 years after ? »

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**Abstract**

Based on an exploratory empirical study, our goal is to understand why individuals prefer a situation that maintains the status quo to a change. Our hypothesis is that resistance to change is linked to unfairness perception. We have applied the Structural Equation Modelling to a new pricing instrument. Our results show that resistance to change can be perceived through latent variables, which are linked to the perceived unfairness of the change. In accordance with the literature, we found that there is a personal dimension to fairness that involves the expected compensation and a moral dimension that involves compliance with moral principles. However, a hierarchy in favour of moral dimension is revealed. Our findings also show that if justice is context-dependent, this context is also behaviour's motivation dependent.

**Keywords:** justice, decision making, behaviour

**Classification J.E.L.:** D63, D78, C91

## Introduction

Why governments fail to adopt certain reforms when economists consider they would increase the efficiency of the economy? Though, the issue is not new, every decision maker want to find the answer, especially during crisis period when he has to decide new and strong reforms. Usually, the economic explanation highlights the existence of a preference for the *status quo* to change. The *status quo* protects individuals from uncertainty about the distribution of the losses and gains resulting from a change (Fernandez et Rodrik, 1991).

However, this answer makes economists face criticism. The stronger one points out one's of the economical basic principle that is to say: people is not motivated by self-interest satisfaction. For Baron and Journey (1993), Frey and Oberholzer-Gee (1996), Frey and *al.* (1996), Kunreuther and Easterling (1996), Brekke and *al.* (2003), Kirchgässner (2010), individuals are also motivated by the search of fairness by compliance with moral principles (Frey and *al.*, 1996; Kunreuther and Easterling, 1996; Kirchgässner, 2010) and by altruistic behavior (Fehr and Fischbacher, 2003; Khalil, 2004). If this fairness motivation has been used by non economists to show the limits of the economists' model, its also a reference for a part of the economists who try to introduce fairness in behavioral experimental model (Konow, 2000; Konow, 2003; Dana and *al.*, 2007; Bradsley, 2008; Croson and Konow, 2009; Duffy and Kornienko, 2010). They underline that both motives are behind behavior, however Duffy and Kornienko (2010) show that self-interest satisfaction prevails on the moral principles respect.

Our general goal is to understand why individuals prefer a situation that maintains the *status quo* to a change. Clearly, the issue involved is whether we are condemned to oppose change or if reforms can be conducted under the best conditions of efficiency and fairness. We make the hypothesis that resistance to change is linked to the perception of its unfairness. This perceived fairness includes a personal economic dimension (what will I receive in compensation?) and a moral dimension (does the change bring my moral principles into question?).

Based on an exploratory empirical study rather than a controlled laboratory experiment, and in order to perceive resistance to change we have applied Structural Equation Modelling (SEM) to the case of a new pricing instrument, the urban road pricing. If its efficiency is well-known<sup>1</sup>, this measure is face to a strong resistance, such as those in Europe (Lyon, Edinburgh and Manchester). The acceptability of an urban congestion pricing is always in debate and subject to a significant literature (for a survey see for example Schade et Schlag, 2003).

Our results show that resistance to change can be perceived through latent variables, which are linked it to the perceived unfairness of the change. In accordance with the literature, we found that there is a personal dimension to fairness that involves the expected compensation and a moral dimension that involves compliance with moral principles. However, a hierarchy in favour of moral dimension is revealed. Our findings also show that if justice is context-dependent, this context is also behaviour's motivation-dependent.

Based on a literature survey, we have formulated questions, which we then attempt to validate empirically. We shall then explain our theoretical model. We shall end by presenting and discussing our results.

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<sup>1</sup> Since the seminal work of Pigou, (1920), Vickrey (1963) and Walters (1961), economists know the benefit of the urban road pricing to finance a new infrastructure or to regulate demand.

## 1. Literature survey and questions

As Fernandez and Rodrik (1991) ask, why governments fail to adopt certain reforms that economists consider they would increase the efficiency of the economy? The usual answer relies on the nonneutrality. This answer leads that the gains and losses from the reform are distributed within society with a nonneutral manner. A reform failure means that « the gainers from the *statu quo* are taken to be politically « strong » and the losers to be politically « weak » » (Fernandez and Rodrik, p.1146).

Fernandez and Rodrik (1991)<sup>2</sup> show that uncertainty regarding the distribution of gains and losses from reform is a source of nonneutrality. Under an uncertainty situation, information is uncompleted and the individuals do not know if their situation will be improved or not by reform. Uncertainty induces a bias toward the *statu quo* and so against reform. People resist because of uncertainty on the improvement or not of their self-interest (how much would I have to pay for? How much would I receive from reform? ). Thus, certain reform that would have been popular *ex post* when uncertainty disappears, may not muster support *ex ante*. Uncertainty is also a part of the potential compensations. People do not know them or maybe can not assess their impact on his own self-interest. Authors do not discuss this point. However compensation can counterbalance negative impact of a reform. Furthermore, their model induces that we can vote for each reform, but it's impossible in practice.

This explanation by nonneutrality is submitted to a stronger critic : individuals won't be motivated only by the self-interest satisfaction but they are also motivated by the search of fairness by compliance with moral principles. This argument has been used by non economists to show the limits of the economists' model. Then a part of the economists try to integrate this idea to improve their model.

Frey and *al.* (1996) point out the limits of the economic approach and their result is important in the literature. Frey and *al.* have examined the behaviours of Swiss citizens in response to the siting of nuclear waste repositories in their vicinity. They have shown that the sites were rejected when they were perceived as leading to the payment of bribes and a denial of civic duty. The rejection of bribes is explained by moral behaviour. When civic duty dominates, monetary compensation obtains a lower level of acceptance for the siting of nuclear waste repositories because the monetary reward deprives the individual of the possibility of expressing altruistic feelings.

Baron and Jurney (1993), Frey and Oberholzer-Gee (1996), Frey and *al.* (1996), Kunreuther and Easterling (1996), Brekke and *al.* (2003), Kirchgässner (2010) have shown empirically that a compensation mechanism that is intended to bring about the acceptance of certain policies may be insufficient if it ignores the influence of moral principles. Non-monetary compensation and the attention given to the procedure itself may provide better results. When introducing compensation mechanisms, the interactions between morality and the market must be considered. Decision-makers can then reduce the perceived moral cost of accepting compensation by making a clear distinction between financial incentives and bribes.

Alvi (1998) recognizes that economic model based only on the individual selfish behavior are weakly efficient on certain topics<sup>3</sup>. For him, the fairness objective is motivated by compliance with moral principles and by self-interest, even if some conflicts or be effective between

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<sup>2</sup> Piaser (2004) criticises the model of Fernandez and Rodrik, in demonstrating that it could be inefficient in terms of Pareto's welfare improvement.

<sup>3</sup> « Economic models based on the view that man is purely selfish have performed poorly in some areas » Alvi, E, p.245, 1998.

them. Moore and Loewenstein (2004) find an original result. Both self-interest and moral principle motivate the individual behavior but self-interest motive is an automatic behavior which can be assimilated to a primitive power. Consequently, even when policy makers try to act with moral motives, self-interest motive is dominant because decisions have to be taken under impulsion and intuition which are more linked to primitive power.

Face with the limits of their explanation, some of the economists try to use self-interest satisfaction motive and moral principle together. Using the theoretical framework of game theory Konow (2000), Croson and Konow (2009) have shown that self-interest may distort the expression of collective preferences and responses to unfairness. Put another way, the distortions generated by self-interest can obscure measures of social preferences. These authors also show that “stakeholders” are less inclined to respond to the generosity of others than are “spectators”. They identify and separate self-interest, distributive preferences and reciprocal preferences, concluding that all three influence the response of individuals to allocation decisions.

Always with a game theory framework, Dana and *al.* (2007) like Duffy and Kornienko (2010) point out situations which act on the self-interest satisfaction. Dana and *al.* (2007) have two interesting results. First, they show that individual auto-judgement limits the self-interest research: a lot of people believe in fairness because they don't want to be unfair or selfish ; On the other side, this self-interest research is encouraged by a reduction of the game transparency. For Duffy and Kornienko (2010), a subject tends to give more when they are placed in a “generosity tournament” than when placed in a “profit tournament”. Over time, the “selfish treatment” discourages giving more than the “controlled treatment”<sup>4</sup>. On the other hand, the social incentives of the altruistic treatment encourage giving. Yet, this effect is found to erode over time as subjects gain experience with the environment. They conclude that in their experience, behaviour is guided by innate competitive motives. The impact of the situation on the player behaviour is an example of the importance of the context in the fairness preoccupations. Young (1995), Easterlin (1995), Konow (2003), Eckel and Wilson (2006), Bolton and Ockenfels (2006), Schokkaert and *al.* (2007), have considered that the principles of fairness differ according to the individual, on their values and beliefs and on their characteristics, the nature of the goods being divided, and even the country and its historical factors<sup>5</sup>. Konow gathers all these elements under the notion of context. Konow considers that the principles of fairness depend on an appraisal of what is fair in a specific context. For this author, fairness is context-dependent. However, he has also taken the view that the principles of fairness have an independent existence: although a judgement about fairness depends on the context, the principles do not change according to the context.

Faravelli (2007) adopts the context-dependent principle but he wants to identify the possible differences between individuals on perceived fairness of different compensation mechanisms. He shows that the type of education induces differences in fairness perception. When the information is weak, individuals put the compensation problem into a particular context, based on their attitudes and personal history. This particular context is the ideology. But, Faravelli shows that this ideology is different if we have done sociologist or economist studies. Faravelli has another important result : the more we clarify the context the more we encourage consensus to find that the compensation principles judged as the fairest.

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<sup>4</sup> In the “altruistic” treatment, dictators are ranked in descending order according to the amount they give away; in the “controlled” treatment, ranks are known to be awarded spuriously; in the “selfish” treatment, the dictators are ranked in descending order according to the amount they keep for themselves.

<sup>5</sup> For a survey of the authors who have brought this approach to the fore, see Konow (2003). For a more specific survey of the role of the environment on individuals' moral behaviour, see Forsyth and Nye (1990).

Raux and *al.* (2009) are also interested in the education impact in fairness judgement. In a situation of scarcity, they have shown that educational level has an influence on whether allocation rules are judged to be fair or not. The less educated individuals consider the moral allocation rule to be fairer (giving priority to pregnant women) and queuing, and consider peak period pricing to be less fair. More generally, these authors have shown that attitudes towards allocation rules depend on the type of good in question, even if this does not change how the perceived fairness of allocation rules is classified. Moreover, attitudes vary according to how frequently scarcity occurs (recurring scarcity reduces the perceived fairness of allocation rules), which confirms that attitudes towards fairness are context-dependent.

In reference to the main survey problematic, we try to answer to the following questions:

- Does resistance to change include an economic dimension, where individual wants to satisfied its own self-interest, and a moral dimension where individual wants to enforce moral principles of fairness?
- Does resistance to change vary in accordance with motive, that is to say is the weight of the two motives similar ?
- Does the context notion be identical for both motives?

## 2. The model

In answering to the previous three questions, our objective is to understand what is the respective weight of the economic and non economic argument in the resistance to change motivation. The SEM method provides a way of modelling behaviours on the basis of latent variables and in our case to identify individuals' resistance to change and to evaluate the causal links between their socioeconomic profile and their attitudes towards the fairness or unfairness of a change. Many authors have described the different stages involved in a successful application of the SEM method, from the theoretical construction of the model to the interpretation of the statistical results<sup>6</sup> (Bollen, 1989, 2002; Hair and *al.*, 1998; Roussel and *al.*, 2002; Iriondo and *al.*, 2003; Golob and Reagan, 2005; McCoach and *al.*, 2007).

So that the theoretical model has two latent variables of resistance to change, because of a personal interest motive on the one hand, and because of a moral motive in the other hand. Latent variables are linked together and to endogenous variables which were formulated as questions in the survey. To take into account the context effect, latent variables are also linked to exogenous variables.

The survey was carried out in January 2003<sup>7</sup>, and was conducted face-to-face, with a representative<sup>8</sup> sample of 401 residents of the Lyon conurbation (1.2 million inhabitants). The respondents were told a story about a situation, which was fictional but close to reality. The story related to a traffic congestion situation in Lyon, which required the implementation

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<sup>6</sup> Roussel and *al.* (2002) have made an instructive and not too formalized description of the different stages involved in applying the SEM method: developing a model with a theoretical basis, constructing a representation of the linear relationships, transposing the representation of linear relationships into a structural measurement model, selecting a type of data matrix and testing the proposed model, evaluating the structural model, interpreting the model's results and interactions, if they have a theoretical justification.

<sup>7</sup> As this was an exploratory study, we do not need absolutely recent data.

<sup>8</sup> On the basis of the quota method (residential location, age category, gender, economically active/inactive status).

of an urban toll, along the lines of that in London, to enter and travel within the city. Various solutions for resolving the situations of excessive demands were proposed as well as a variety of compensation measures: the respondents were asked whether they thought each solution was essentially fair or essentially unfair<sup>9</sup>.

Exogenous variables corresponding to the socio-professional characteristics of the individuals considered significant after the estimation in ordered probit. The responses to the survey may be considered to be ordinal insofar as they could take on the values of 1 (very unfair), 2 (unfair), 3 (fair) 4 (very fair)<sup>10</sup>. This is the very reason for which we can use an ordered probit model (McCullagh, 1980).

Among the 8 socio-professional variables integrated in the survey<sup>11</sup>, the ordered probit estimation allows us to select only variables which have significant correlation with endogenous latent variables. So that, they will be integrated in the model as exogenous variables. Significant variables are the followings: holding a driving license (x1), the socio-professional category (x2), the residential location (x3), the transport mode used (x4). As correlation between those variables are not significant, we will made the hypothesis that exogenous variables are not linked.

A more detailed model structure is now presenting.

We try to study the following relation:

$$V = AF + E$$

with  $V$  vector ( $m \times 1$ ) of exogenous variables which corresponds to the individual answer to change, where each element is an independent indicator of the resistance to change, called  $F$ .  $F$  means exogenous and endogenous latent variables in the model. Matrix  $A$  includes structural coefficients and factor loading.  $E$  is a vector ( $m \times 1$ ) of measurement errors.

Let,  $N$  the number of observations,  $m$  the number of endogenous latent variables,  $n$  the number of exogenous latent variables,  $p$  the number of endogenous latent variables indicators,  $q$  the number of exogenous latent variables indicators. We can also write the following structural and measurement sub-models :

$$\eta_i = \beta\eta_i + \Gamma\xi_i + \zeta_i$$

$$y_i = \Lambda_y \eta_i + \varepsilon_i$$

$$x_i = \Lambda_x \xi_i + \delta_i$$

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<sup>9</sup> The four responses that were initially possible (very unfair, essentially unfair, essentially fair, very fair) were grouped together to form two categories (unfair, fair) in order to present the results. The order in which the solutions were presented was systematically varied from one respondent to the other in order to avoid the bias which would arise if all the solutions were presented in the same order. The questionnaire can be obtained from the author.

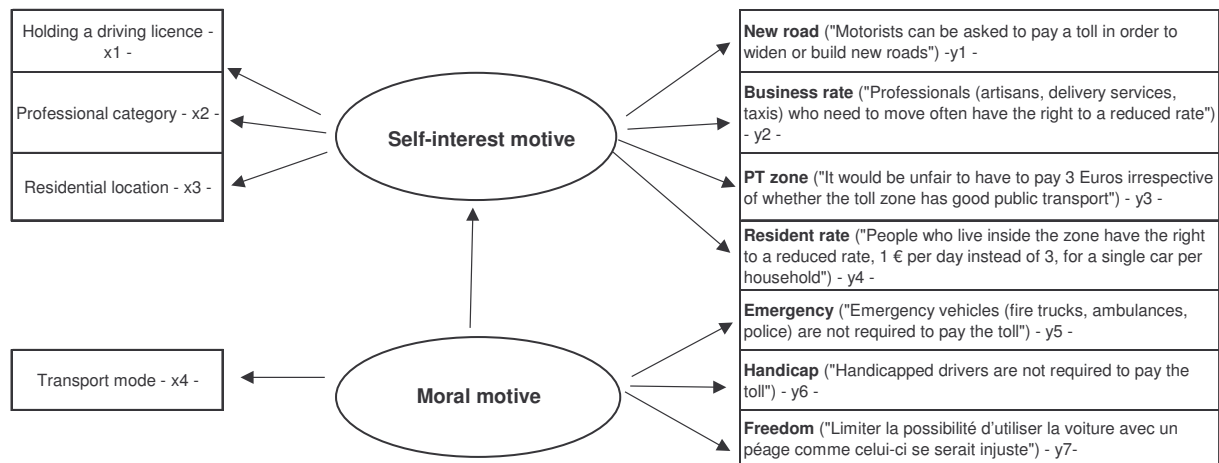
<sup>10</sup> If  $Y$  is the response factor with  $k$  levels, the model is written as follows:  $P(Y \leq k|x) = \Phi(\theta_j - \beta'x)$  where  $\Phi$  is the cumulative normal function of the thresholds,  $\theta_0 = -\infty < \theta_1 < \Lambda < \theta_k = \infty$ ,  $x$  is the vector of the explanatory factors and  $\beta$  the vector of the unknown parameters.

<sup>11</sup> After several trials, a certain number of significant socio-demographic variables are selected, which we then seek to simplify. A likelihood test which compares a model based on the simplified socio-demographic variables with a model containing the non simplified variables is used. In both cases, the tests showed that the null hypothesis could not be rejected (likelihood ratio test for F1: -25.02 and the  $p$ -value of 1; likelihood ratio test for F2: -34.14 and the  $p$ -value of 1). In other words, we can use the simplified models with a ordered probit estimation. Holding a driving licence, the socio-professional category, the residential location, the transport mode used are significant variables ( $t$ -value  $> 1.96$ ). See Annex 1.

with  $\eta_i$  ( $m \times 1$ ) the endogenous latent variables for  $i$  observations,  $\beta$  ( $m \times m$ ) the structural parameter which lies endogenous latent variables,  $\Gamma$  ( $m \times n$ ) the structural parameter which lies endogenous latent variables to exogenous variables,  $\xi_i$  ( $n \times 1$ ) the exogenous latent variables for  $i$  observations,  $\zeta_i$  ( $m \times 1$ ) the structural specification errors of the model and the random errors measurement of the latent variables for  $i$  observations,  $y_i$  ( $p \times 1$ ) the endogenous latent variables indicators. Their factor loading is  $\lambda^y$ ,  $\Lambda_{y(p \times m)}$  the factor loading linked the endogenous indicators,  $\varepsilon_i$  ( $p \times 1$ ) the measurement errors of the endogenous indicator for  $i$  observations,  $x_i$  ( $q \times 1$ ) the exogenous latent variables indicators. Their factor loading is  $\lambda^x$ ,  $\Lambda_{x(q \times n)}$  the factor loading linked the exogenous indicators,  $\delta_i$  ( $q \times 1$ ) the measurement errors of exogenous indicators for  $i$  observations

In order to estimate the structural equation model, we used the free SEM package in R developed by J. Fox (2006). For the SEM estimation, we use a statistical method that supplements the chi-square test with other absolute criteria and incremental criteria the results from which are compared. However, we did not use parsimony indices which, as we have seen above, are all used to estimate models with too many parameters or to see if the poor fit of a model is not the result of a shortage of free parameters (too many fixed parameters). However, this is not the situation in which we find ourselves. We have also tested several models, but we choose the better in terms of statistical results.

The **Figure 1** summarizes the theoretical model tested. It presents relations between resistance to change, fairness principles and the socio-professional characteristics of the individuals.



**Figure 1** : The theoretical relationships studied with the SEM method

### 3. Results and discussion

We first present our final model and we discuss its relevance. Then we present our results.

#### 3.1 Results

The final model we obtained with the SEM method is presented below (Table 1).

Table 1: Measurement coefficients defining the latent variables in terms of the observed variables ( $z$ -statistic given in brackets)

	Latent variables	
	Resistance to change with self-interest motive $\eta_1$	Resistance to change with moral motive $\eta_2$
<b>Endogenous variables</b>		
Resident rate	1.000(fixed) <sup>12</sup>	
New road	0.879904 (5.12000)	
Business rate	0.987023 (5.85992)	
PT zone	0.727721 (4.25444)	
Freedom		1.000 (fixed)
Emergency		0.315252 (2.77788)
Handicap		0.426457 (3.41701)
<b>Exogenous variables</b>		
Driving licence x1	0.529968 (3.62998)	
Professional category x2	0.393928 (2.82549)	
Residence x3	-0.428835 (-3.09937)	
Mode x4		-0.333443 (-3.20692)
$\beta_{12}$ (recursive linear relation of $\eta_2$ on $\eta_1$ )	0.81(4.12)	
Chi-square Model = 101.82 Df = 37 Pr (>Chisq) = 5.7572e-08 Chi-square (null model) = 448.84 Df = 55 GFI = 0.95351 AGFI = 0.91708 RMSEA index = 0.066179 90% CI: (0.05103, 0.081686) Bentler-Bonnett NFI = 0.77315 Tucker-Lewis NNFI = 0.75535 Bentler CFI = 0.83542 SRMR = 0.056882 BIC = -119.96		

### 3.2. What relevance ?

Our results do not allow us to make an immediate interpretation<sup>13</sup>. They are fairly contrasted and require detailed analysis of the validity of the tested theoretical model.

The result of the chi-square test merits particular attention. The *p-value* expresses the error risk of falsely accepting the null hypothesis (the model is able to reproduce the data). A model will be accepted if the *p-value* is higher than the level fixed for the error risk, for example at 5% (Golob and Reagan, 2005). Our chi-square value (chi-square = 101.82, df = 37, p = 5.7572e-08), should in principle lead us to reject the model. However, as Bagozzi and *al.* (1988); Roussel and *al.* (2002); McCoach and *al.* (2007) have explained there is often a problem concerning the significance of the chi-square value with the SEM method. This applies above all to samples with more than 150 observations as the size of chi-square increases with the sample size. In our case, the sample size was N=401, so we may well be affected by this problem. This is why we have used other criteria in addition to the chi-square test. The BIC criterion allows us to adjust the likelihood ratio of the chi-square test to the

<sup>12</sup> An observed variable must have a fixed value in order to fix the scale of the latent variable.

<sup>13</sup> Bagozzi and *al.* (1988) emphasize the crucial role of the researcher who, with this method, must make a judicious interpretation of the empirical rules whether statistical or not, as well as the conceptual and philosophical criteria. Taking a similar view, Iriondo and *al.* (2003) consider that the statistical results on their own are insufficient in the context of an exploratory study.

number of parameters in the model, the number of observed variables and the size of the sample (Raftery, 1993). A negative value, as is the case here (BIC = -119.96), indicates that the model in question is supported more by data than by the impartial model that has been identified for which the BIC is null<sup>14</sup>.

Furthermore, the results of the structural equation test shows that our theoretical model fits the data very well. The fit of the model is good as the GFI and the AGFI values are higher than 0.9 as recommended by Jöreskog and Sörbom (1984) and Igalens and Roussel (1999). In addition, even if they are not very significant, the RMSEA and SRMR indices are satisfactory. According to Browne and Cudeck (1993), the first should be lower than 0.08, which is the case here. According to Pedhazur and Pedhazur-Schmelkin (1991)<sup>15</sup>, the highest acceptable value is 0.05 for the SRMR, so we are at the limit. The null model or Bentler and Bonett's independent model (1980) measures the improvement in fit when the tested model is compared with a more restrictive model referred to as the basic model. Bentler and Bonett (1980) consider that a value  $\geq 0.9$  indicates good fit. Even if our result is not very far from this, we are slightly below the required value. But literature shows that a limited difference cannot be an handicap for the analysis. Arhonditsis and *al.* (2006) nevertheless investigated a model with a GFI of 0.834. In addition, this indicator is also linked to the size of the sample, and we have already emphasised that this plays a role here and may interfere with the results.

To sum up, we consider that our model is satisfactory, as on the one hand, the large size of our sample may explain the significance problems associated with the chi-square test, and, on the other hand, the fit of our model to the data is highly significant, and last, the other indices are at, or near, the required levels.

### 3.3 Results interpretation

Resistance to change because of a personal interest motive is strongly linked to all endogenous variables. Whether we introduce a toll system to finance larger roads or build new ones, whether the inhabitants and professionals within the toll area benefit from a reduced fare or whether we offer a modal alternative, results are the same : individuals resist change and stand against the questioning of the *status quo*.

Resistance to change due to moral principles motive is also positively linked to all endogenous variables. For moral reasons, individuals will resist change if it challenges the emergency vehicles being free of charge or the possibility for disabled people to travel free of charge for instance.

This resistance is different according to the professional category of an individual. In the case of resistance for personal interest, it is positively linked to holding a driving license and to the professional category but negatively linked to the residential location. In the case of resistance for a moral justice principle, it is negatively linked to the mode of transport used.

There is a linear recursive relation between the two latent variables. However, only the moral principle motive acts on the personal interest motive ( $\beta_{12} = 0.81$ , *z-value* 4.12).

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<sup>14</sup> We also use this indicator to compare the different models that are tested in order to retain the most significant. A difference of 5 between two models indicates that there is strong evidence that one is better than the other, and a difference of 10 provides conclusive evidence, Raftery (1993). This is the basis for our comparison between the most significant models that we obtained.

<sup>15</sup> Cited by Igalens and Roussel (1999, p.1010).

### 3.4 Discussion

We discuss now our results and we answer to our previous three questions.

Our results show that resistance to change can be explain by two motives : a motive linked to self-interest satisfaction translated into compensation in our case and a motive by compliance with moral principles. This finding concurs with the recent literature which try to integrate fairness in the economic model.

This finding concurs also with research on the road pricing acceptability. They point out that road pricing introduction is non acceptable if individuals perceived they have no more right to move freely and if no compensation measure are implement in the same time. Jakobsson and *al.* (2000) show that individuals rejected road pricing if they think its a coercive measure and they do not see its advantage in terms of well-being improvement. This coercive dimension is strong because road pricing doesn't make a difference between the individual in function of their income classes. A compensation measure allows this measure to be less disadvantaged for low income classes. (Small, 1983; Guiliano, 1992; de Groot and Steg, 2006).

Studying the Lyon Northern Boulevard Périphérique in France, Raux and Souche (2004) show how a specific measure that restricts traffic on the parallel roads leads to a virtual obligation to pay new toll infrastructure. Paying for a service on some links does not always counterbalance the absence of liberty of choice

Then we can answer to our first question.

Answer to the first question : *Resistance to change has an economic dimension where individual researches his self-interest and a moral dimension where individual researches compliance with moral principle of fairness.*

Our results show that our two latent variables are linked to endogenous variables but that resistance to change behaviour depends on motive. If both motives, of the research of self-interest and compliance by moral principle, have a positive impact on attitude to change, we show that are not equivalent. Firstly because endogenous variables are not the same.

Measures that compensate for the new pricing system are viewed favourably. Examples consist of building new roads, providing lower prices for professional users who are forced to travel or for public transport users. The moral motive corresponds to free new infrastructure for emergency vehicles (fire service, ambulances, police), and for disabled users.

Afterwards, because there is a recursive linear relation between the two latent variables, only moral motive has an influence on self-interest motive. Moral motive seems to produce a distortion effect on self-interest motive. This finding concurs with results, like Rawls one's<sup>16</sup>, which establish a priority rules between fairness principles (liberty principle is priority on equality of chances or on difference principle). However, this finding seems to be quite different from Moore and Loewenstein (2004) or Duffy and Kornienko (2010) who point out the major importance of self-interest motive. One of the explanation can be that we do not take into account the temporal dimension whereas Duffy and Kornienko (2010) show that behavior can be modified by this temporal dimension in favor of self-interest research.

Then we can answer to our second question.

Answer to the second question : *Resistance to change varies in terms of behavioral motive with a moral one which acts on the self-interest motive.*

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<sup>16</sup> See also Raux and *al.* (2009).

Our results give also a new light on the context notion. This notion is different for both motives.

Resistance to change with self-interest motivation is positively linked to having a driving license and to professional category but negatively linked to residence location. Clearly, individuals who have to pay road pricing, that is to say working car users, wait for a compensation. If not so, they resist this measure. This result has been identified in many road pricing experiences even if compensation measures used have been different. London congestion charging is completed by 90% of price reduction for resident (Leape, 2006). For Stockholm, road pricing was completed by a new public transport supply (Armeliu and Hultkrantz, 2006).

Resistance to change with moral motivation is not linked to these context elements but only to transport mode. Under this circumstance, we can ask why transport mode using is only linked to moral motive? Maybe one of the possible explanation could be that transport mode using is correlated to the freedom to move. Schlag and Teubel (1997) find that freedom to choose « when, how and where to move » is a fundamental rights. This result is reinforce by the fact that a lot of research have shown that car users have a special relation with their car. Measures perceived as reducing this relation are against freedom to move and privacy.

Then we can answer to our last question.

Answer to the third question : *Context notion depends on the individual behavior motive.*

## Conclusion

Our objective was to understand why (under which conditions) individuals prefer a situation which maintain *statu quo* rather change.

Even though it is imperfect, we consider our model to be satisfactory. This work is exploratory, as our theoretical model has only been tested on a single case. As stated by Bollen (and echoed by McCoach and *al.*, 2007, p.465), Aquino and *al.* (1999, p.1078), but also Dalbert and Umlauf (2001) and Fehr and Fischbacher (2003), the true validity of the model obtained with the SEM method depends on the possibility of applying it to other independent samples. This is the task that we must undertake next.

Our results show that resistance to change may be perceived by means of latent variables. Resistance to change appears to be linked to a perception of unfairness generated by the change in question. The perception of the fairness of a situation appears to be linked to the self-interest satisfaction, linked to envisaged compensation, and compliance with the moral rules of fairness. A hierarchy exists between these two dimensions, on behalf of the second. In the future, we have to test our result validity in integrating the temporal dimension.

Last, we show that fairness is context-dependent but this context is different in accordance with the behaviour motive's. Among altruistic individuals, the moral dimension would seem to dominate, while among egotistical individuals it would seem that self-interest dominates. The difficulty is that very few individuals belong to either of these extremes. The real issue is therefore to improve our understanding of the concept of context, for example by identifying standard contexts, which bring into play certain principles of fairness more than other contexts.

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## Annex 1

### Final model for the latent variable “Self-interest” with simplified exogenous socioeconomic variables

Coefficients:	Value	Std. Error	t value
No driving licence <sup>17</sup>	0.2216413	0.07998738	2.770953
Inactive	0.1244216	0.06014427	2.068720
Living out of tolling zone	-0.1760536	0.05756924	-3.058119
Self-interest-business rate	1.0344069	0.08136030	12.713903
Self-interest-PT zone	-0.8845771	0.08509655	-10.394982
Self-interest-resident rate	0.8725285	0.08066393	10.816837

Intercepts:

	Value	Std. Error	t value
0/1	-3.1462	0.1865	-16.8714
1/2	-0.3857	0.0703	-5.4842
2/3	0.4303	0.0702	6.1324
3/4	1.5955	0.0794	20.0873

Residual Deviance: 3480.149  
AIC: 3500.149

### Final model for the latent variable “Moral” with simplified exogenous socioeconomic variables

Coefficients:	Value	Std. Error	t value
Mode-car <sup>18</sup>	-0.2049522	0.07445430	-2.752724
Moral-freedom	-2.2288648	0.10242659	-21.760607
Moral-disability	-0.9344400	0.09932524	-9.407881

Intercepts:

	Value	Std. Error	t value
0/1	-4.8414	0.2636	-18.3691
1/2	-2.7715	0.1053	-26.3253
2/3	-2.0526	0.0954	-21.5229
3/4	-1.1346	0.0840	-13.5150

Residual Deviance: 2180.047  
AIC: 2194.047

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<sup>17</sup> For example, the variables “No driving licence” means that the responses of individuals with a driving licence are compared to those of individuals who do not have a driving licence.

<sup>18</sup> The variables “Mode-car” means that the responses of individuals who use transport modes other than the car are compared to those who use the car exclusively.