THE SOCIAL ACCEPTABILITY OF THE HEAVYWEIGHT ECOTAX

HAJERA BOUGUERRA

College of Science and Humanities of Dawadmi, Shaqra University, KSA
hajra@su.edu.sa

Abstract

The primary objective of this analysis is to study the perception of road freight transport users of different categories (motorist, manager, transport department manager, driver) vis-à-vis eco-fiscal systems. It is a question of clearly identifying the tariff measure best accepted by each category and the reasons for this acceptability. Also, a Multiple Correspondence Analysis (MCA) is carried out in order to highlight the groupings of individuals having a consistent behavior in the face of the implementation of environmental taxes on heavy goods vehicles and the introduction of accompanying policies.

Keywords: eco-fiscal systems, road freight transport, elasticity, Multiple Correspondence Analysis

JEL classification: C38, H23, R41

1. INTRODUCTION

In order to reduce polluting emissions and ensure fluidity in the transport sector, a panoply of measures can be adopted such as the introduction of environmental taxation which is defined by all the "taxes, duties and fees whose base consists of a pollutant, or more generally of a product or service which damages the environment or which results in a drain on renewable or non-renewable natural resources" (OECD, 2001)

Environmental transport taxes can provide many advantages in terms of internalizing the external costs associated with the use of road transport (Tagliapietra et al, 2019), but they face several problems: the effectiveness of the measures proposed, their social effects and the questions they raise. in terms of the conditions of acceptability.

Aware of this reality, we are going to carry out a survey with Tunisian economic agents (managers of establishments using the road mode, driver-deliveryman, motorist) in order to collect information concerning the degree of acceptability of the introduction of eco-taxes which may improve the environment.

2. LITERATURE REVIEW

Faburel et al (2007) describe acceptability as a political attitude which translates more generally systems of beliefs, values and norms in which representations interfere (representations of the environment and mobility being negotiated). Similarly, Comby et al (2009) define acceptability as a disposition to consent in the long term – in this case – to political measures. Acceptability can be defined as ''a specific type of pro-environmental behaviour, that is, it reflects a type of non-activist''. (Schuitema et al. 2018)

Consequently, acceptability corresponds to the coagulation of several orders of judgment relating to the legitimacy of these measures (of those who take them and of those they concern), their effectiveness, their fairness, their necessity, the responsibilities involved, etc. Given the scarcity of studies dealing with the acceptability of environmental taxation in the case of freight transport, we base ourselves on the work carried out for road passenger transport in order to observe the possible methods for a better understanding of social acceptability. environmental transport taxes. When studying environmental taxation, there is a great similarity between road transport for passengers and that for goods. The regulatory approach in the case of travelers and for goods is based on a price signal mechanism. It is therefore very interesting to study studies relating to road passenger transport in order to extend them to road freight.

Entitled "Eco-fiscality and sustainable transport: between premium and tax?", the work of Séverine et al (2011) focuses on the issues and levers related to the reduction of car use. Testing the acceptability of the introduction of six eco-fiscal mechanisms (bonus-malus, carbon tax, urban tolls, vignette and voluntary compensation), the authors show that the degree of this acceptability varies according to the nature of the mechanisms submitted. responses from respondents. Similarly, and using the method of Interactive Declared Response Surveys, the study identifies four types of households (the recalcitrant who pay the tax or buy back allowances rather than changing their behavior, the flexible who change their mobility rather than paying the tax or buying back allowances, the constrained who change when they have to and the cornered who totally refuse the change in behavior and the payment of the tax) faced with the introduction of a carbon tax or tradable CO_2 emission allowances.

Reymond (2004) is only interested in the acceptability of tolls as a congestion reduction tool. Using a factorial analysis of multiple correspondences (MCA) carried out on a sample composed of Swiss households, the study reveals a better acceptability of the development of public transport as accompanying policies to tolls and underlines the existence of two antagonistic categories: frequent motorists and occasional motorists.

Inspired mainly by these two studies, we will try to see:

- what importance do economic agents give to environmental problems?
- what instruments are needed to remedy these problems?

- what are the most acceptable eco-fiscal measures?
- do the support policies improve the acceptability of environmental taxation mechanisms?

In order to answer these questions, we opted to carry out a survey of 300 individuals from different categories. The three eco-fiscal instruments tested in this questionnaire are:

- the kilometre tax, also called the ecotax on heavy goods vehicles, is a kilometre charge which varies in particular according to the distance traveled on a road included in the tax zone. The aim is to internalize the external costs of road transport by paying the cost of environmental degradation. (Bouguerra, 2021)
- the carbon tax is an environmental tax which aims to reduce the emission of carbon dioxide (CO_2) responsible for global warming. It applies to the sale price of fuels (petrol, diesel). (Bouguerra, 2021)
- the bonus-malus (or feebates) is a tax measure that consists of encouraging the acquisition of more virtuous new vehicles emitting less CO_2, via a bonus, and penalizing the purchase of energy-intensive models that emit high CO_2 emissions, via a malus, by increasing their costs. (Bouguerra, 2021)

3. METHODOLOGICAL FRAMEWORK

3.1. DATA COLLECTION TECHNIQUES

As part of our research, we have chosen the questionnaire as a practical means of collecting information. This method must translate the objective of the research into questions and elicit from the subjects questioned answers that are sincere and likely to be analyzed according to the object of the investigation (Grawitz, 1993).

We preferred the questionnaire because it allows easy coding of data. It provides data collected in a systematic way and suitable for quantitative analysis (Boukous, 1999). In order to have direct contact with the respondents, face to face is chosen as the method of administration. This method proves to be particularly suitable in our case since there are certain theoretical notions, which can lead to confusion and which require that they be clarified.

3.2. CONTENT AND STRUCTURE OF THE QUESTIONNAIRE

The survey questionnaire includes 27 questions to test four eco-fiscal measures aimed at protecting the environment and achieving the objectives of sustainable transport. It is structured into five sections ordered as follows:

- The first section is made up of eight questions. It is devoted to the identification of the interlocutor (manager of a company using the road mode, delivery driver or motorist), the general characteristics of the company (location, workforce, type of transport carried out) and the characteristics of the respondents (sex, age, level of education). This part includes filter questions that make it possible to distinguish between the

different respondents and thus avoid certain sub-questions and considerably lighten the questionnaire.

- The second section is composed of a single question, it aims to determine the perception of road transport problems that concern the respondents: air pollution, noise, congestion (loss of time) and accidents.
- The third section consisting of a single question focuses on the actions to be taken in order to remedy these problems. This involves asking the interviewees to choose between the introduction of: pricing policies (taxing heavy goods vehicles), regulatory policies (prohibition of the circulation of heavy goods vehicles during peak hours), behavioral measures (the accountability of drivers), technological measures (the use of fuel emitting less pollutants and vehicles that consume less fuel) or the promotion of rail transport as an alternative mode.
- The fourth section concerns the social acceptability of three transport eco-taxes based on different regulatory principles (mileage tax, carbon tax and bonus-malus). We have thus sought to approximate the degree of acceptance of these environmental taxes (existing and possible for the future) that can reconcile environmental objectives with those of economic efficiency and social equity, by the different users.
- The fifth and last section analyzes the point of view of economic actors regarding support policies that may be essential and complementary to an environmental tax.

3.3. THE RESEARCH SAMPLE

Our parent population is made up of all the economic agents who use road transport but given the great difficulty or even the impossibility of conducting research on the entire population, our sampling could only be non-probability. We rely on reasoned or judged sampling, which consists of selecting individuals based on the researcher's judgment and knowledge of the population.

This technique is based on a reasoned choice made by the researcher. The latter wants to focus his research on a type of phenomena or individuals that are distinguished from others according to certain characteristics (Depelteau, 2000).

It is a question of collecting different points of view on the acceptability of eco-taxes from 'resource' individuals who know the themes that interest us. More specifically, the survey is carried out among 300 road transport users distributed as follows:

- industrial, commercial, tertiary companies (own account) or transport professionals (third party account) located in the Sahel region (Sousse, Monastir and Mahdia) which send or receive goods using the road mode. The questionnaires are given to the managers or logistics managers of the establishment and to the delivery drivers of the company (a total of 200 individuals).

- 100 people who use their vehicles every day to go to work. In fact, it seems wise to take the opinion of the motorist on the eco-fiscal systems applied to the transport of goods.

4. PRESENTATION OF SURVEY RESULTS

4. 1. PERCEPTION OF HEAVYWEIGHT EXTERNALITIES

Beyond any doubt, the truck has a negative impact on the fauna and flora, it constitutes a vector of upheaval of the environment. Among the various negative impacts of the truck (pollution, noise, congestion, accident), we ask respondents to specify the most irritating type of nuisance.

Despite the undeniable contribution of road transport of goods in society, it is strongly accused. In fact, respondents say that congestion takes first place with 42% followed by accidents (26%), noise (23%) and pollution with 9%. Although congestion is a phenomenon familiar to all road transport users, a congested network is increasingly unbearable. Respondents highlight that heavy goods vehicles generate environmental damage, mainly congestion which causes loss of time, additional fuel costs and vehicle use. Congestion is particularly penalizing when it is added to accidents, noise and pollution. For these reasons we invite our respondents to express themselves on the establishment of eco-taxation as a remedy for the externalities so long announced.

4.2. THE ACCEPTABILITY OF ENVIRONMENTAL TAXES

The internalization of road transport system costs remains a necessity in order to ensure sustainable transport. The introduction of regulatory policies and tax incentives generally encounter opposition from most road transport users.

In order to reduce nuisance related to heavy goods vehicles, we offer our respondents the following policies:

- truck tax
- ban on the circulation of heavy goods vehicles during rush hour
- driver accountability
- use of fuel emitting less pollutant and vehicles consuming less fuel
- promotion of rail transport as an alternative mode

The answers to the following question "In your opinion, what action should be taken to remedy these problems? make it possible to obtain the judgment of the subjects on the adoption of regulatory policies.

These results tend to show that "the incentive to use fuel that emits less pollutants and vehicles that consume less fuel" is the most acceptable policy, deemed capable of reducing greenhouse gas emissions. On the other hand, "traffic bans on trucks" and "taxation of heavy goods vehicles" receive less attention, although they have considerable implications for traffic flow and fuel consumption. These two pricing policies are considered costly and restrictive. Reluctant to pay more for the same trips they make.

In other words, the interviewees are more hostile to actions that involve them directly (taxation) while they are more favorable to solutions that come under the public power, whether these are policies for the development of alternative modes or technological measures such as encouraging the use of vehicles that consume less fuel, fuel that emits less pollutants, the development of engines and auxiliaries (fairing, tyres, etc.) reducing fuel consumption per kilometre and the empowerment of drivers by training them in eco driving.

Our study will focus particularly on the level of acceptance of Eco fiscal policies, so we ask the following questions respectively:

Do you agree that the kilometre tax is an effective pricing solution?

Do you agree that the carbon tax is an effective pricing solution?

Do you agree that the bonus-malus is an effective pricing solution?

Let's start by presenting the attitudes of the subjects towards the introduction of a kilometre tax:

Respondents express a greater rejection of the kilometre tax, almost 66% of respondents say they are against the application of this eco-fiscal device. Only 33% consider this tax to be effective. This policy of taxing heavy goods vehicles in proportion to the number of kilometres traveled seems like an unpopular measure that is the subject of great mistrust.

For the second instrument "the carbon tax", we note that the majority of respondents (88%) say they are against the carbon tax. They consider this system as an additional cost which weighs on their budgets, particularly with the surge in fuel prices which should continue in the coming days given the country's economic situation and the fluctuation in the price of a barrel of oil. Some respondents mention the notion of unfairness of this measure given that it does not consider the size and financial situation of the company using the road mode. In fact, it penalizes small firms that do not have the capacity to acquire new trucks that emit less pollutants and favors large companies that are able to renovate their fleets and even pay more if they have old vehicles.

To the question "Do you agree that the bonus-malus constitutes an effective pricing solution?", we note a positive assessment of the majority of respondents (94%) on the adoption of this policy. They consider it a win-win system since the financial aid (the bonus given) incentivizes companies to buy vehicles that meet CO_2 standards and the long-term disappearance of old vehicles.

In order to understand the reaction of respondents to the Eco fiscal measures mentioned above, we ask the following question: In your opinion, what consequences flow from the introduction of the kilometre tax?

We seek their views on the following proposals:

- improved traffic flow
- improved air quality

- damage to business productivity
- improvement of safety in road transport

Thus, we find that the majority of individuals questioned think that the kilometre tax (almost 66%) is an attack on the productivity of companies, regardless of their size or sector of activity. It only serves to increase transport costs and subsequently increase the cost price of several products, which affects the competitiveness of firms.

For the introduction of the carbon tax, the respondents do not deny its role in improving air quality since this policy reduces CO_2 emissions and helps to correct environmental dysfunction. But the majority thinks that it is a punitive and restrictive measure and is nothing more than a new tax which will increase the coffers of the State. According to most, the government must be aware of the difficulties of companies.

For the most acceptable "bonus-malus" eco-fiscal device, several respondents think that the purchase and the putting on the road of a truck with low fuel consumption makes it possible to counteract the problems of atmospheric pollution and improve the fluidity of traffic. . The acquisition of new vehicles thanks to the granted subsidy (bonus) makes it possible to increase the productivity of the company. This productivity which depends on the average speed of the vehicle, the fluidity of traffic and the improvement of the performance of the fleet by the acquisition of new vehicles equipped with high technology.

Environmental taxation, which includes the kilometric tax, the carbon tax and the bonus-malus, appeared more or less "socially acceptable". Under these conditions, the difficulties experienced by some respondents in accepting the implementation of these policies can be overcome by insisting on the fair redistribution of revenue from these environmental taxes.

4.3. THE IMPORTANCE OF REVENUE REDISTRIBUTION

One of the main obstacles to the installation of an Eco fiscal system is the lack of transparency of the authorities on the question of the allocation of the accumulated sums. This is why we offer our respondents several support measures for each Eco fiscal system.

In order to achieve this objective, attention must be focused on the following different actions:

- Development of road infrastructure
- Dedicate motorway lanes to heavy goods vehicles
- Development of rail transport

Based on the opinions of our respondents on the allocation of revenue from the kilometre tax. It follows that of the 300 people questioned, almost 94% prefer to see the revenue going towards the installation of motorway lanes dedicated to the road transport of goods, 92% agree with the upgrading and development of the road transport infrastructure and only 38% are for the development of the rail mode by

setting up, for example, logistics platforms linked to the railways. Generally, we notice an improvement in the acceptability of the kilometre tax when it is accompanied by consideration of an accompanying measure.

Secondly, when we ask respondents to specify their attitudes towards the policies that can accompany the carbon tax, nearly 97% accept the introduction of this tax with the installation of motorway lanes dedicated to the road transport of goods, 89% support the idea of road infrastructure development and only 50% are for the development of rail transport. Similarly, we find that acceptability has improved except that which is associated with a policy of improving rail transport. While remaining within the same approach, the "bonus-malus" eco-tax is perceived as an effective policy by most of those questioned with accompanying measures interested in the road mode: almost 96% of respondents are in favor of the development of road infrastructure, 98% are in favor of laying motorway lanes for heavy goods vehicles. On the other hand, 44% of respondents are clearly against the development of the rail mode as a bonus-malus support policy.

4.4. MULTIVARIATE ANALYSIS: A MULTIPLE CORRESPONDENCE ANALYSIS

The MCA (Multiple Correspondence Analysis) is a method of descriptive exploratory factor analysis, which aims to reduce the dimension of the data like that of the Principal Component Analysis (PCA) carried out in the second part of our work. On the other hand, it is particularly suitable for qualitative data presented in the form of complete disjunctive tables or multiple contingency tables (Burt's table). To perform the MCA, we have 300 individuals and 7 active variables with 31 modalities. To each variable and each modality, we assign a code to simplify the task. The coding of the variables selected is presented in the following table:

Table 1. Coding of active variables and modalities

Variables	Modalities
-Status	- Company manager - Transportation Manager - Driver - Motorist
- Acceptability of kilometre tax (acptk)	- not agree at all - disagree - neither agree nor disagree - agree - totally agree
- Carbon tax acceptability (acptc)	- not agree at all - disagree - neither agree nor disagree - agree - totally agree
-Acceptability of bonus-malus (acpbm)	- not agree at all - disagree - neither agree nor disagree - agree - totally agree

- Consequences of the introduction of the kilometre tax (csqtk)	- improved traffic flow - improved air quality - damage to business productivity - improvement of road transport safety
- Consequences of the introduction of the carbon tax (csqtc)	- improved traffic flow - improved air quality - damage to business productivity - improvement of road transport safety
- Consequences of the introduction of bonus-malus (csqbm)	- improved traffic flow - improved air quality - damage to business productivity - improvement of road transport safety

During data processing by MCA, one can encounter the problem of scarcity of modalities. These are little-chosen methods and can significantly distort the analysis results. To circumvent this problem, SPAD is based on the technique of the threshold of clearance, it breaks down the active modalities of workforce lower than a percentage determined in advance. In our case, by preferring a clearance threshold of 2%, six modalities were affected by the breakdown (modality 'neither agree nor disagree' of the variable 'Acceptability of the kilometric tax', modality 'neither agree or disagree' of the variable 'Acceptability of the carbon tax', category 'totally disagree' of the 'Acceptability of bonus-malus', category 'neither agree or disagree' of the variable 'Acceptability of bonus-malus' and 'Improvement of traffic fluidity' and 'improvement of road transport safety' of the variable 'Consequences of the introduction of the carbon tax').

The MCA can only be carried out after having transformed the protocol table (initial table representing the data collected) into a complete disjunctive table or a Burt table (table comprising the crossing of all the modalities). In order to determine the number of factorial axes to keep, we can base ourselves on Kaiser's rule which consists in retaining only the eigenvalues which are greater than their average, that is to say $1/p$ (with p number of active variables). In other words, we will keep the first 7 eigenvalues ($1/7=0.142$) which give a total inertia of 67.44% and which thus lead to determining the number of axes necessary for the graphic representations. However, based on the criterion of the elbow, which is founded on the curve of the eigenvalues, we will retain considering the first setback the first 2 values explaining 31.85% of the total inertia of the cloud of points.

4.4.1. ACCEPTABILITY OF ENVIRONMENTAL TAXES WITHOUT ACCOMPANYING POLICIES

In order to determine the characteristics of the respondents who are against the introduction of the various Eco fiscal measures and to describe the associations between the different modalities of the variables studied, we base ourselves on the method of factorial analysis of multiple correspondences (MCA). This method is implemented using SPAD software.

Before any interpretation, it is important to observe for each modality its coordinate on the factorial axes, its contribution indicating its importance for the interpretation of the axis, and its square cosine describing the quality of representation. In our analysis, the examination of a table summarizing the information relating to the coordinates, contributions and square cosines of the modalities provides us with the following information:

Table 2. *Coordinates, Contributions and Cosine Squares of Modalities*

Modalities			Coordinates		Contributions (%)		Cosine square (%)	
	real.P	Disto	Axis1	Axis2	Axis1	Axis2	Axis1	Axis2
1 . stat								
- Company manager	3.14	3.55	0.95	-0.86	**5.3**	**8.2**	**0.26**	**0.21**
- Transportation Manager	1.62	7.82	0.72	0.19	1.6	0.2	0.07	0.00
- Driver (ch)	4.76	2.00	0.36	0.69	1.1	**8.0**	0.06	**0.24**
- Motorist (aut)	4.76	2.00	-1.23	-0.19	**13.4**	0.6	**0.76**	0.02
2. acptk								
- not agree at all	3.81	2.75	0.70	0.00	3.5	0.0	0.18	0.00
- disagree	5.67	1.52	0.59	0.10	3.7	0.2	0.23	0.01
- agree	2.48	4.77	-1.18	0.01	**6.4**	0.0	**0.29**	0.00
- totally agree	2.33	5.12	-1.34	-0.25	**7.8**	0.5	**0.35**	0.01
3. acptc								
- not agree at all	5.29	1.70	0.77	-0.07	**5.9**	0.1	**0.35**	0.00
- disagree	7.33	0.95	-0.15	0.30	0.3	2.3	0.02	0.09
- agree	1.10	12.04	-1.72	-1.05	**6.0**	**4.3**	**0.25**	0.09
- totally agree	0.57	24.00	-1.91	-1.09	**3.9**	**2.4**	**0.15**	0.05
4. acpbm								
- not agree at all	0.62	22.08	1.58	-3.68	**2.9**	**29.6**	**0.11**	**0.61**
- agree	8.57	0.67	-0.11	0.23	0.2	1.6	0.02	0.08
- totally agree	5.10	1.80	0.00	0.06	0.0	0.1	0.00	0.00
5. csqtk								
- improved traffic flow	2.57	4.56	-1.29	-0.22	**8.0**	0.4	**0.37**	0.01
- improved air quality	0.67	20.43	-1.41	-0.41	**2.5**	0.4	**0.10**	0.01
- damage to business productivity	9.43	0.52	0.64	0.06	7.3	0.1	0.80	0.01
- improvement of road transport safety	1.62	7.82	-1.11	0.17	**3.8**	0.2	**0.16**	0.00
6. csqtc								
- improved air quality	1.62	7.82	-1.82	-1.09	**10.0**	**6.8**	**0.42**	0.05
- damage to business productivity	12.67	0.13	0.23	0.14	1.3	0.9	0.42	0.15
7. csqbm								
- improved traffic flow	2.62	4.45	-0.37	0.54	0.7	**2.7**	0.03	0.06
- improved air quality	10.19	0.40	-0.08	0.12	0.1	0.5	0.02	0.04
- damage to business productivity	0.8	16.65	1.48	-3.25	**3.3**	**30.1**	**0.13**	**0.63**
- improvement of road transport safety	0.67	20.43	0.84	-0.03	**0.9**	0.0	0.03	0.00

It is a question of first examining the modalities which have a good square cosine, these are those which are well represented on the axes. Second, we detect the modalities with contributions greater than their weights and finally, we rely on the coordinates of the modalities to determine their positions on the different axes. In order to refine the results, we are interested in the analysis of the signs of the modalities which have the largest absolute contributions and whose relative contributions (cosine squared) are at least 0.1.

Table 3. *Variables most contributing to the explanation of axis 1 and axis 2*

	Positive coordinates	Negative coordinates
Axis1 (20.83%)	- company manager - not agree at all (acptc) - disagree (acpbm) - damage to business productivity (csqbm)	- motorist - agree (acptk) - totally agree (acptk) - agree (acptc) - totally agree (acptc) - improved traffic flow (csqtk) - improved air quality (csqtk) - improvement of road transport safety (csqtk) - improved air quality (csqtc)
Axe2 (11.03%)	- driver	- company manager - disagree (acpbm) - damage to business productivity (csqbm)

4.4.1.1 INTERPRETATION OF THE FIRST FACTORIAL AXIS (F1)

According to the previous table, the first factorial axis alone explains 20.83% of the total inertia of the analysis characterizing the individuals (managers) who reject the idea of introducing the carbon tax and the bonus-malus ecotax on the pretext that it deteriorates the productivity of companies and people (motorists) who appreciate the kilometre tax given its positive role in improving traffic flow, safety and air quality and accept the tax carbon which has an undeniable effect on the atmosphere.

4.4.1.2 INTERPRETATION OF THE SECOND FACTORIAL AXIS (F2)

The second axis represents 11.03% of the inertia putting in opposition on one side the drivers and on the other side the managers who are skeptical to the implementation of bonuses - malus given that it is considered as an attack on the firm productivity. In order to obtain a global vision of the different results of the factorial analysis, we use the graphic representation of the projections of the cloud of modalities in the main plane composed of the first 2 factors of the MCA.

Thanks to the first factorial plane explaining 31.85% of the total inertia of the point cloud, we can distinguish three distinct groupings. The first batch is characterized by individuals who do not find it inconvenient to introduce a kilometre

tax and a carbon tax to improve user safety and reduce greenhouse gas emissions and traffic congestion on the roads. The 'status' variable modality that is close to this group is 'motorist'. Motorists blame heavy goods vehicles, they see that they cause much more environmental damage, they are also the cause of major accidents on the roads and generate more traffic congestion. Considering the harmful effects of heavy goods vehicles oblige them to take their responsibilities and pay for the damage caused.

The second lot is made up of managers who are hostile to the introduction of bonus-malus despite the fact that in flat sorting this eco-fiscal system seems the most acceptable by the majority of respondents (94%). They believe that this measure is unfair since it does not distinguish between small and large companies, those who have the ability to renovate their vehicles and those who are unable. Similarly, they reject the idea of taxing the sale of fuels (gasoline, diesel). The reasons for this disagreement lie in the fact that fuel costs are already high.

The third batch is made up of 'drivers' and 'managers of the transport department within the company' who express their refusal to pay the kilometre tax and the carbon tax, thus opposing motorists. "Faced with this pricing that is both necessary and impossible, the economist must not abdicate. Acceptability problems are partly the result of simple opportunistic behavior on the part of users, who prefer to retain the advantage of free access". (Crozet and Marlot, 2001)

4.4.2. ACCEPTABILITY OF ENVIRONMENTAL TAXES WITH ACCOMPANYING POLICIES

No one could deny the responsibility of heavy goods vehicles with regard to the damage suffered by the environment and the various users of road transport. Conversely, the taxation of road transport of goods does not require the acceptance of the whole community. The Eco fiscal tax with its several forms (mileage tax, carbon tax, bonus-malus) does not seem to be an effective solution. This is an approach that is strongly criticized, mainly by business leaders.

In order to make tariff policies more acceptable, the authorities can advocate the redistribution of tax revenues towards support policies. Pricing is not necessarily confiscatory. With better redistribution, it can be economically and ecologically efficient and socially acceptable. In this perspective, we seek to understand the impact of the various support policies on the points of view of our respondents, also based on a Multiple Correspondence Analysis (MCA) given that "the perceptions and attitudes of the people surveyed determine broad acceptance, or rejection, of pricing measures. These attitudes may be different for each user and each group because, depending on how each person will see their daily practices affected by each measure, the acceptability will be greater or less" (Viegas & Macario, 2001). In order to make the taxes mentioned above more acceptable, we are offering our respondents a range of accompanying measures to adopt (upgrading and development of the road transport infrastructure, dedicating motorway lanes to road freight transport, development of rail transport by setting up logistics platforms

linked to the railways). We have chosen precisely the allocation of revenue to actions related to the transport sector.

From the graphical representation resulting from the multiple correspondence analysis, we can distinguish two conglomerates. The first conglomerate is made up of motorists who agree with all taxes and their accompanying policies. They insist on the need to tax road freight transport in order to circumvent the problems caused by the massive use of heavy goods vehicles. Encouraging ecologically virtuous behavior by encouraging companies to use the rail mode is highlighted in the choice of support policies by motorists. At this stage the question arises: what will be the attitude of motorists faced with the introduction, for example, of an urban toll? Do they react the same way?

In contrast, the second conglomerate relates to managers and drivers who are unfavorable to directing revenue towards the development of the rail mode, however they support the idea of introducing any kind of tax (carbon tax, kilometre tax, bonus -malus) provided that their tax revenues are directed towards the development of the quality of road service. They see that improving the quality of rail freight service is a counter-productive measure since they do not change their behavior and no longer give up the road mode even if they are obliged to pay the tax. A striking finding but which can be explained by the fact that companies and drivers reason in order to optimize their utility. Based on the trade-off between gains and costs, the environmental objective is poorly perceived. Most do not trust rail transport as the mode of transport of the future. This distrust is largely due to a lack of knowledge of the many economic advantages of rail transport and combined rail-road transport (reduced cost of transport, more energy efficient, faster, etc.). We even noticed the low degree of familiarity with key concepts of combined rail-road transport (logistics platform, intermodal transport units, etc.).

The conclusion that can be drawn from this is that the acceptability of a tax is linked above all to the purpose of the accompanying measure. Greater acceptability is based on an orientation that maximizes user profit. In fact, it is rare to agree to pay more without knowing the counterpart. This is why the purposes of the introduction of taxes must be clear, precise and concrete.

5. CONCLUSION

The awareness of the harmful problems of road transport of goods on the one hand and the low price of road mode push the authorities to implement tariff measures. Ecological taxation is seen as an ambitious policy that helps to internalize external costs. However, in practice, the introduction of eco-taxation is more or less accepted, particularly by drivers and company managers who see their situation worsen following an additional tax.

Faced with this observation, the introduction of an environmental tax combined with a support policy is a solution for better collection. Similarly, an information and awareness-raising campaign seems necessary to better understand

these measures. Tunisia still has a long way to go to limit the use of the road mode and encourage the transfer to a more environmentally friendly mode (the rail mode).

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