

Private car mobility. Problem awareness, willingness to change, and policy evaluation: a national interview study among Dutch car users

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Abstract

This paper reports on a field study, based on personal interviews with 539 car users. Problem awareness appears to be an important condition for any attempts to make people voluntarily reduce car use. Problem awareness also is an prerequisite for the acceptance of policy measures aimed at reducing car use. Problem awareness is higher the more people are confronted with the problems of car use. The provision of information in a brochure did not influence respondents' problem awareness.

1. THEORETICAL BACKGROUND

The social dilemma paradigm is a useful model to understand and to manage problems in which numerous individual benefits are running up against cumulative collective costs and risks, such as from car use [1]. In large scale social dilemmas it is attractive to continue to act in one's own interest. Individual contributions to collective costs and risks, as well as to their reduction, seem negligible. Moreover, most people are pessimistic about the cooperation of others. So, individuals tend not to feel responsible for collective problems. This makes individual contributions to collective solutions unlikely.

Members of the public as well as policy makers will only contribute to resolving large-scale social dilemmas if two conditions are fulfilled. First, people must perceive motorised traffic as a source of serious societal problems. This requires a clear and unambiguous description of the various negative consequences. Second, people have to balance the collective disadvantages against the personal advantages of car use, and they must be convinced that the problems need to be solved. Thus, *problem awareness* is an important condition for any attempts to make people voluntarily reduce car use [2-3].

For this study, we hypothesised that the higher people's problem awareness, the more they are willing to reduce car use, and the more favourably they evaluate relevant policy measures. Furthermore, we expected that the more people are confronted with problems of car use (in densely populated areas, in city centres, or by reading information about these problems), the higher their problem awareness would be, the more they would be willing to reduce their car use, and the more favourably they would evaluate policy measures.

2. METHOD

We studied problem awareness, possible behaviour change, and the evaluation of policy measures for reducing car use through in-depth interviews with 539 car users selected as living within 7 kilometres, between 7 and 15, and further than 15 kilometres away from the centre of Amsterdam, Eindhoven, and Groningen, three cities having rather different mobility profiles. The collective problems of car use are most visible in the Amsterdam region, because of the high traffic volume, while in the Groningen region traffic volume is low and a lot of problems are not visible yet. The Eindhoven region takes a middle position. Within each geographic condition, a few days before the interview two thirds of the respondents received systematically different amounts of prior information in a brochure about the most important societal problems of the massive use of cars and possible solutions for them. One third of the respondents received information about the present problem situation. Another third received information about the present and future problem situation. The remaining respondents received no information. Twenty people were interviewed in each (19 in one) research condition.

Structured interviews were conducted at respondents' homes by trained interviewers. The questionnaire contained, amongst other things, several items measuring the key concepts of 'problem awareness', 'willingness to reduce car use', and 'evaluation of policy measures'. Prior to the interview, respondents were given a travel diary in which they recorded all movements on the Friday, Saturday, Sunday and Monday prior to the interview. Interviewers checked to what extent the respondents had actually studied the brochure.

3. RESULTS

We will concentrate on subjects' problem awareness, their willingness to reduce car use, and their evaluation of policy measures. Only differences which are statistically significant at $p < .05$ will be reported.

On average, the respondents perceive various collective consequences of car use as 'a problem'. The scores on '*problem awareness*' could vary from -10 ('not a problem at all') to +10 ('a very big problem'). The mean score (M) was 3.1. As hypothesised, on average people living in Groningen ($M = 2.5$) do have a lower score on 'problem awareness' than people living in the Eindhoven ($M = 3.5$) and Amsterdam ($M = 3.2$) region. People living in or near the city centre ($M = 3.6$) do have a higher score on 'problem awareness' in comparison to people living outside the city centre ($M = 2.8$). No significant differences were found between the information conditions.

Only 30% of the respondents appear to be actually *willing to reduce their car use*. People living in the Eindhoven region (38%) have a greater willingness to reduce their car use in comparison to respondents living in the regions of Amsterdam (25%) and Groningen (24%). Among the 'distance' groups, also, there is a significant difference in 'willingness to reduce car use'. Respondents living within 7 kilometres of the city centre (34%) are more willing to reduce car use than people living between 7 and 15 kilometres of the city centre (24%). No significant differences were found between the information conditions.

Respondents were asked to evaluate the *effectiveness and acceptability of 'push' and 'pull' measures*. Push measures are directed at making car use less attractive, such as

through higher fuel prices. Pull measures are aimed at improving the alternatives for car use, such as improving the quality of public transport. Scores could range from -10 ('not at all effective' or 'not at all acceptable') to +10 ('very effective' or 'very acceptable'). On average, people evaluate neither push measures ($M = -4.3$) nor pull measures ($M = -3.7$) as effective. Respondents evaluate pull measures as 'acceptable' ($M = 4.4$). Push measures were evaluated as 'not acceptable, nor unacceptable' ($M = -0.1$). Again, people living in the (quieter) Groningen region evaluate push measures as well as pull measures as less effective and less acceptable in comparison to the respondents living in the more populated regions of Eindhoven and Amsterdam (see table 1). There are also significant differences in the evaluation of policy measures among the distance groups. This only pertains to the evaluation of the acceptability of pull measures: respondents living within 7 kilometres of a city centre evaluate pull measures more favourably ($M = 5.1$), especially in comparison to respondents living between 7 and 15 kilometres of the city centre ($M = 3.9$).

Table 1
Evaluation of push measures and pull measures per region¹

	Amsterdam	Eindhoven	Groningen
effectivity 'push'	-4.3 ^a	-3.9 ^a	-4.9 ^b
effectivity 'pull'	-3.6 ^a	-3.0 ^b	-4.3 ^c
acceptability 'push'	-0.1	0.4 ^a	-0.5 ^b
acceptability 'pull'	4.8 ^a	4.5 ^a	3.7 ^b

¹ Means with unequal superscripts differ at $p < 0.05$.

The 539 respondents were divided into three equal groups, on the basis of their scores on the concept of 'problem awareness'. Table 2 shows that respondents with a higher 'problem awareness' are more willing to reduce their car use in comparison to people with a lower problem awareness. Moreover, respondents with a higher score on 'problem awareness' evaluate policy measures more favourably.

Table 2
Willingness to change and evaluation of push measures and pull measures for groups differing in problem awareness (all percentages and means differ at $p < 0.05$)

problem awareness	low	middle	high
willing to reduce	18%	29%	39%
effectivity 'push'	-5.7	-4.0	-3.2
effectivity 'pull'	-4.7	-3.6	-2.7
acceptability 'push'	-1.7	-0.2	1.7
acceptability 'pull'	3.5	4.2	5.4

4. DISCUSSION

On average people perceive car use as 'a problem'. However, most people are not willing to reduce car use. Respondents evaluate current Dutch push measures as well as pull measures as rather ineffective. They judge pull measures to be acceptable, while push measures are evaluated as 'acceptable nor unacceptable'. So, on average people believe that policy measures aimed at reducing car use are acceptable, but not very effective (or they think the measures are acceptable because they are not very effective).

There are several explanations for the perceived ineffectiveness of policy measures. First, problem awareness may not be as high as to make people actually do something about it. Second, problem awareness by itself is not a sufficient condition for reducing car use. People also must have the impression that the collective problems *can* be solved, that their own contribution is useful, and that others will also contribute to the solution of the problems [3].

As hypothesised, there is a positive relationship between problem awareness, willingness to reduce car use, and the evaluation of policy measures. Heightening problem awareness, therefore, seems a useful strategy, provided there are sufficient feasible alternatives available to reduce car use.

Our expectation that the more people are confronted with the problems of car use, the higher would be their problem awareness, is only partly confirmed. Respondents living within 7 kilometres of a city centre do indeed have a higher problem awareness, are more willing to reduce car use, and evaluate policy measures more favourably. Moreover, respondents living in the quieter Groningen region have a lower score on problem awareness, are less willing to reduce car use, and evaluate policy measures less favourably. However, there were no differences between respondents who did or did not receive prior information. Maybe the information, which can regularly be read in the newspaper, was not new to the respondents. It is also possible that people perceive the information as unreliable, and deny or downplay the information as valid.

Collective costs and risks of car use are difficult to control. Effective solution strategies require, besides problem awareness, clear policy objectives, and a forceful and consistent government policy, based on several different policy instruments.

5. REFERENCES

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