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Notes and comments

The role of value orientations in evaluating quality of life consequences of a transport pricing policy

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Abstract

This study examines relationships between value orientations and perceived quality of life-changes when the cost of car use is doubled. An Internet based survey shows that people expect only minor decreases in overall quality of life when costs of car use increase. People with a strong egoistic value orientation evaluate quality of life consequences of the policy more pessimistically than people who have a weak egoistic value orientation. On the other hand, people with strong altruistic or biospheric value orientations are more optimistic compared to those with weak altruistic or biospheric value orientations. © 2005 Elsevier Ltd. All rights reserved.

Keywords: Quality of life; Value orientations; Transport pricing

1. Introduction

Many scholars acknowledge that a reduction in the level of car use is needed to reach a sustainable transport system (Greene and Wegener, 1997). However, policies aimed at reducing car use, such as transport pricing, are not seen as popular with the public (Jakobsson et al., 2000) and policy makers seem reluctant to implement such policies believing it will reduce individuals' quality of life (Steg and Gifford, 2005). Policies are likely to be more acceptable, feasible and effective if they do not seriously threaten individual quality of life.

Poortinga et al. (2004) proposed a list of 22 indicators that can be used to assess quality of life consequences of sustainable transport policies now or in the future (Table 1). This instrument proved to be useful in assessing changes in quality of life resulting from environmental policies in different domains including car use (Steg and Gifford, 2005). The changes in quality of life people expect when transport policies are implemented may differ among groups. Groups may be categorised based on socio demographics, but also on general behavioural antecedents, such as values.

Values are considered to be important because they are general and, therefore, affect many different beliefs and behaviours. Schwartz (1992) defines a value as 'a desirable trans-situational goal varying in importance,

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Table 1

Description of 22 quality of life indicators and mean scores of expected change in quality of life when prices of car use would double

Indicator	Description	Expected change (<i>M</i>)
Comfort	Having a comfortable and easy life	−0.9
Material beauty	Having nice possessions in and around the house	−0.2
Status, recognition	Being appreciated and respected by others	0.0
Aesthetic beauty	Being able to enjoy the beauty of nature and culture	0.4
Security ^a	Feeling attended to and cared for by others	0.2
Money, income	Having enough money to buy and do things that are necessary and pleasing	−0.7
Partner and family ^a	Having an intimate relationship. Having a stable family life and good family relationships	−0.1
Health	Being in good health. Having access to adequate health care	0.2
Social justice	Having equal opportunities and the same possibilities and rights as others. Being treated in a righteous way	−0.2
Leisure time	Having enough time after work and household work and being able to spend this time satisfactorily	−0.5
Change, variation	Having a varied life. Experiencing as many things as possible	−0.6
Freedom	Freedom and control over the course of one's life, to be able to decide for yourself, what you do, when and how	−0.7
Privacy	Having the opportunity to be yourself, to do your own things and to have a place for your own	−0.3
Environmental quality	Having access to clean air, water and soil. Having and maintaining a good environmental quality	1.2
Identity, self-respect	Having sufficient self-respect and being able to develop an own identity	0.0
Social relations	Having good relationships with friends, colleagues and neighbours. Being able to maintain contacts and to make new ones	−0.3
Spirituality, religion ^a	Being able to live a life with the emphasis on spirituality and/or with your own religious persuasion	0.1
Education	Having the opportunity to get a good education and develop one's general knowledge	−0.1
Safety	Being safe at home and in the streets. Being able to avoid accidents and being protected against criminality	0.6
Nature, biodiversity	Being able to enjoy natural landscapes, parks and forests. Assurance of the continued existence of plants and animals, maintaining biodiversity	0.9
Challenge, excitement ^a	Having challenges and experiencing pleasant and exciting things	−0.2
Work	Having or being able to find a job and being able to fulfil it as pleasantly as possible	−0.5

^a Attitude studies on car use and energy saving policies suggest that these indicators are not strongly related to transport policies aimed at reducing car use (Anable and Gatersleben, 2005; Ibrahim, 2003; Hagman, 2003; Hiscock et al., 2002), neither do they show strong face validity. They are excluded in further analysis.

which serves as a guiding principle in the life of a person.' Scholars have argued that three general value orientations should be distinguished when studying pro-environmental behaviour: an egoistic value orientation (in which people will especially consider costs and benefits for them personally); an altruistic value orientation (in which people will focus on perceived costs and benefits for other people); and, a biospheric value orientation (in which people will consider costs and benefits for the ecosystem and biosphere) (Stern, 2000). Most studies have found that people with a dominant altruistic or biospheric value orientation have stronger pro-environmental beliefs and are more likely to engage in pro-environmental behaviour, than are people who strongly value their own interests (Karp, 1996; Nordlund and Garvill, 2002).

This study examines to what extent transport policies aimed at reducing car use affect individual quality of life of people differing in value orientations. Three hypotheses are tested:

- (1) People's overall quality of life will decrease when transport pricing is implemented because the individual advantages of car use generally outweigh the collective problems resulting from such use.
- (2) People with strong egoistic value orientations evaluate quality of life consequences of the pricing policy more negatively than people with weak orientations.

- (3) People who are mostly altruistically or biospherically oriented evaluate quality of life consequences of the pricing policy more positively than people who are less oriented.

2. Method

In 2004 a survey was started in five countries (Austria, Czech Republic, Italy, The Netherlands and Sweden). Questionnaires were distributed via email: acquaintances, students and colleagues were sent a link to the questionnaire with the request to fill it out and to send the link to as many other people as possible (snowball effect).¹ The full dataset includes 490 respondents: 94 from Austria, 106 from Czech Republic, 71 from Italy, 150 from The Netherlands, and 69 from Sweden. Forty-five percent of the respondents were male and 55% were female. Respondents' age ranged from 17 to 72 years.

Expected quality of life effects of transport pricing were measured by asking respondents which consequences the following transport policy would have for their quality of life: 'Imagine that the government doubled prices of car use. ... [This] would mean that for each car you use, you would pay 100% more than you currently do.' This policy measure was chosen because it is easy to understand and imagine for people in different countries. Also, it is quite extreme to guarantee that quality of life would actually be affected by it. Respondents indicated effects of this policy on 22 quality of life aspects (Table 1) on a seven-point scale ranging from -3 'would decrease dramatically' to 3 'would increase dramatically'. Also, an overall judgement about expected quality of life was asked for ('All things considered, to what extent would this policy influence your overall quality of life?') on the same seven-point scale.

Measures of value orientations were based on an instrument conceived by De Groot and Steg (2005) that includes 13 values that reflect three value orientations (egoistic, altruistic and biospheric). Respondents rated the importance of these values 'as a guiding principle in their lives' on a nine-point scale ranging from -1 'opposed to my values', 0 'not important' to 7 'extremely important'.²

3. Results

In general, respondents expected a minor decrease in overall quality of life when prices of car use doubled. Table 1 shows the mean scores of expected changes of this policy for the 22 quality of life indicators. Respondents indicated that comfort, money, freedom, change/variation, leisure time and work would decrease if the price of car use doubled. In contrast, environmental quality, nature/biodiversity and safety were believed to improve if the government would implement this policy.

The three value orientations are significantly correlated with expected changes in quality of life indicators, although the correlation coefficients are not always strong.³ Correlations between the egoistic value orientation and changes in quality of life indicators are negative, suggesting that strong egoistic value orientations are associated with expecting more negative changes in quality of life indicators. Significant relationships are found for the aspects freedom, comfort, privacy, environmental quality, nature/biodiversity, health, education, work, safety, social relations, aesthetic beauty, and change/variation. In contrast, altruistic and biospheric value orientations are positively correlated with expected changes in quality of life indicators, indicating that strong altruistic and biospheric value orientations are associated with expecting less negative and more positive changes in quality of life indicators. Biospheric value orientations showed significant correlations with most quality of life aspects except for status/recognition, health, privacy and education. Strong correlations are found for the aspects nature/biodiversity, environmental quality and change/variation. For altruistic value orientations correlations are weaker and generally not significant, except for the aspects social justice, environmental quality, aesthetic beauty, nature/biodiversity, and education. These results suggest that groups differing in egoistic, altruistic and biospheric value orientations indeed expect different changes in quality of life indicators.

¹ This procedure may not yield representative samples. However, it does provide heterogeneous samples and therefore the method was sufficient for the aim of this study, i.e., examine relationships between values and quality of life-changes.

² Cronbach's alpha was 0.74 for the egoistic, 0.73 for the altruistic, and 0.85 for the biospheric value orientation.

³ An overview of correlations between value orientations and expected changes in quality of life can be obtained from the first author.

Differences between groups varying in value orientations towards the expected changes in 18 quality of life indicators (see note Table 1) were tested by means of a general linear modelling. For this purpose, groups with

Fig. 1. Expected changes in quality of life indicators: (a) introducing transport pricing for people who score low and high on egoistic value orientations, (b) introducing transport pricing for people who score low and high on altruistic value orientations, (c) introducing transport pricing for people who score low and high on biospheric value orientations.

Table 2

Between-subjects effects for expected changes in quality of life indicators between people varying in egoistic, altruistic and biospheric value orientations

	Egoistic <i>F</i> values	Altruistic <i>F</i> values	Biospheric <i>F</i> values
Comfort	11.39 ^a	0.06	4.11 ^b
Money	1.31	0.46	4.76 ^b
Freedom	6.03 ^b	5.90 ^b	7.01 ^c
Change	2.36	2.79	19.48 ^a
Work	3.67	5.90 ^b	8.08 ^c
Leisure	1.50	1.95	9.68 ^c
Privacy	7.81 ^c	0.46	3.70
Relations	4.12 ^b	0.68	9.66 ^c
Material beauty	0.94	2.92	7.27 ^c
Justice	0.47	8.35 ^c	9.82 ^c
Education	7.12 ^c	9.05 ^c	3.22
Identity	0.52	1.38	2.99
Status	2.26	0.26	1.43
Health	6.84 ^c	0.09	1.03
Aesthetic beauty	3.90 ^b	3.48	12.03 ^a
Safety	6.48 ^b	0.38	16.60 ^a
Nature	4.92 ^b	2.29	31.65 ^a
Environment	8.99 ^c	6.85 ^c	21.20 ^a
	df (1,354)	df (1,354)	df (1,336)

^a $p < .001$.

^b $p < .05$.

^c $p < .01$.

low respectively high scores on each value orientation were formed. Thirty-five percent of respondents who scored highest on each value orientation were compared to the same percentage of the respondents who scored lowest on the same value orientation.

Fig. 1a shows that people with a high egoistic value orientation are consistently more pessimistic about the quality of life consequences of the policy compared to those who score low on the egoistic value orientation. More specifically, tests of between-subjects effects reveal they are less positive about the negative consequences for the quality of life indicators comfort, freedom, privacy, social relations, and education. Furthermore, people who strongly value egoistic aspects are more negative about the positive consequences for health, aesthetic beauty, safety, nature/biodiversity and environmental quality.

As expected, results for the altruistic and the biospheric value orientation show the opposite pattern. People high and low in altruistic value orientation differ significantly and systematically in perceived quality of life consequences of transport pricing (Fig. 1b). People high in altruistic value orientation are less negative about the negative consequences of the policy for the quality of life indicators freedom, work, social justice and education. They are more positive about the possible positive consequences for environmental quality. When people are strongly biospherically oriented, a similar pattern is found (Fig. 1c). Here, the more optimistic view of people high in biospheric value orientation is shown by them expecting less negative changes in almost all quality of life indicators that are expected to decrease, with an exception of privacy and education. Furthermore, the more people are biospherically oriented, the more strongly they expect positive effects in aesthetic beauty, safety, nature/biodiversity and environmental quality. An overview of all relevant *F*-values for tests of differences between groups differing in egoistic, altruistic and biospheric value orientations is provided in Table 2.

4. Discussion

The results of the survey support the hypothesis that doubling the price of car use would have more disadvantages than advantages and, thus reduce the perceived quality of life (Hypothesis 1). However, people expected only a minor decrease in their perceived quality of life and even a stringent measure, such as doubling costs of car use, seems hardly to affect people's general well-being.

Furthermore, the findings validate the hypotheses related to the relationships between values and perceived quality of life effects. People high in egoistic values evaluate the quality of life consequences of the transport measure more pessimistically than people who have a low egoistic value orientation. They are more negative about expected negative consequences and less positive about positive consequences for quality of life indicators. The opposite is true for people with strong altruistic and biospheric value orientations. People who are altruistically or biospherically oriented are more optimistic about the possible consequences of the policy on their quality of life. They evaluate possible positive consequences for their quality of life more positively, and they are less negative about expected negative consequences for quality of life compared to people with weak altruistic and biospheric value orientations. The latter is especially true for those with a strong biospheric value orientation. This provides further support for the claim that pro-environmental beliefs and behaviour are positively related to altruistic and biospheric value orientations and negatively related to egoistic value orientations (Stern and Dietz, 1994; Stern et al., 1998).

5. Conclusions

Studies like these reveal whether and how perceived quality of life could be affected by transport policies. Based on this, recommendations may be given on how to adjust or supplement policies to prevent or compensate negative outcomes or promote positive outcomes. Considering quality of life consequences of policies would be an improvement of the current situation, in which decisions are based on expectations set by some minority groups that have a powerful say in decision-making processes. These groups can obstruct particular solutions or compromises, that leaves governments with opinions that would have negative consequences for or would be unacceptable for the majority. Knowing how specific quality of life aspects may be influenced positively may enhance policy acceptability. This will facilitate the implementation of sustainability policies and guarantee effective and efficient decision making.

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