Rewards for avoiding rush-hour driving and impacts on commuting behaviour

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Results

Background

Congestion is common on Dutch Roads and is forecasted to increase and worsen. Economist state that road pricing is the most efficient solution for congestion. However, Dutch public opinion is not acceptable of road pricing. Rewards for avoiding peak-hour driving have been suggested as an alternative to pricing. Psychologists assert incentives promote wanted behavior in the long run. Incentives can reinforce learning and support behavioral changes.

Objectives

1. Investigate the impact of rewards on commuters’ time-use decisions.
2. Effectiveness of different reward types.
3. Response rates of different sub groups and classes.
4. Identify constraints / supports to behavior change.
5. Impacts of travel-time information.

Study Area

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Cars were fitted with OBU’s. EIV’s placed in main exit to high-way A12 westbound.

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Conclusions

Rewards are a necessary condition to behavior change behavior. However other factors play a role as sufficient conditions:

Personal / Socio-demographic factors, Experience, Information.
Constraints / Supportive measures.

Experiment Design

340 participants:
Panel: 13 weeks x 5 work days = 65 obs/part.

Between Subjects:
2 Groups: Money (N=232), Yeti (N=108).
4 Reward Classes by weekly trip frequency levels (1, 2, 4 or 5 trips/week) – base level.

Within Subjects:
3 Treatments for monetary reward:
3 € x 3 weeks
7 € x 4 weeks
Mixed x 3 weeks - 3 € for avoiding low-peak, 7 € for high-peak

2 Treatments for Yeti reward:
• Credit x 5 weeks + traffic info
• No credit x weeks + traffic info

Participants with Yeti also receive real-time information

Experimental task

Earn a daily reward (money or 1 Yeti credit) if you avoid driving in the morning peak-hour between 7:30-9:30 by:
• Shift to earlier/later driving
• Switch modes: public transport, bike carpool.
• Work from home.

Data Collection

Preliminary survey
13 week field trial:
• 2 weeks – no reward
• 10 weeks with reward
- Money: 3x3€, 4 x 7€, 3 x Mixed
- Yeti: 5 x with credit, 5 x no credit
• 1 week – no reward (Yeti + traffic info).

Posterior evaluation survey.

Yeti provides travel time information and includes also GPS.

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