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Executive summary

Increasing congestion is threatening accessibility of urban regions and is causing economic damages. Because of the typically low public support for charging instruments, recently interest has increased for a new type of instrument to reduce congestion: Tradable Peak Credits (TPC). The fundamental idea behind this instrument is that a certain amount of credits is allocated to people free of charge and that each ride during peak hours in a certain area costs one credit. The amount of credits that is distributed will be determined based on how much traffic can be allowed in a certain area without causing congestion. People can buy credits from others if they need more, and sell them to others if they do not use them. It is hypothesized that a TPC system has a higher public support in theory compared to conventional congestion pricing. However, this has not been studied. This study therefore aims to answer the following research question: *What is the expected support for the introduction of a TPC system considering different TPC system designs compared to maintaining the current situation, and compared to the introduction of other road pricing policies?*

To answer this question, a survey research including a stated choice experiment was conducted among residents of the transport regions Amsterdam and Utrecht. They were introduced with TPC and were presented six choice sets. Each choice set consisted of two TPC systems, which differed with regard to four design variables: who receives credits, how the credits are distributed, how often credits are distributed and how often the price of a credit fluctuates. These design variables were chosen based on a literature review and consultation of road pricing scientists. For every choice set, respondents indicated which TPC design they preferred and whether they would vote for or against the introduction of their preferred TPC system. Also a questionnaire was included to measure socio-demographic variables, mobility habits, attitudes towards TPC and car use, and the support for TPC, congestion charging and kilometer charging.

Based on the data obtained from 505 respondent, it was found that when you present respondents with three road pricing policies, namely TPC, congestion charge, and kilometer charge, then there is the least support for TPC (26.5%) and the most support for kilometer charge (35%). The support for a congestion charge is quite similar to the support for TPC (28%). The support for a kilometer charge is considerably lower than the support that was found in another recent research in the Netherlands, which was 59% (I&O Research, 2019). TPC thus does not have a higher public support than a congestion charge and a kilometer charge as was hypothesized.

When presenting people with more specific designs of TPC, where it is specified who receives credits, how credits are distributed, how often credits are distributed and how often the credit price changes, then support for the introduction varies between 33.8% and 53.2%. From the observed choices in the stated choice experiment, a mixed logit model is estimated which revealed the following insights into how preferences depend on the implementation of TPC. Residents prefer that credits are also given to people who work but not live in the municipality and own a car, instead of only giving credits to residents of the municipality. Equal distribution of credits is the preferred distribution principle, followed by giving more credits to people who drive more kilometers, followed by giving more credits to people who work more hours. The most unsupported distribution principle is giving more credits to people with lower incomes. This indicates that there is a lack of support for TPC as a tool to redistribute welfare. Opinions are however very divided about which distribution

principle should be applied. Furthermore, people prefer to receive credits every month over receiving them every week. As expected, people prefer a lower frequency of credit price fluctuations. People are more in favor of introducing TPC when: (1) they consider TPC a fair system, (2) they believe that TPC can effectively reduce the impact of car use on the environment, (3) they trust that TPC is feasible and that the government is able to implement and maintain the system, (4) they do not perceive TPC as an infringement on their personal freedom, (5) they expect the trading of credits to be fun.

This study also made clear that people are quite critical about TPC. For example, only a limited number of them expect that TPC reduces congestion, and a lot of people think that trading credits will take a lot of time and effort. By giving more information about TPC and familiarizing people with the measure, these types of attitudes might become more positive and this might increase support for TPC. Considering this, and considering the fact that the highest support level for a specific TPC design (53.2%) is almost equal to support levels for other road pricing policies, there is sufficient reason to continue investigating TPC as an alternative to a congestion charge and a kilometer charge.

If policymakers wish to implement TPC, the main recommendations are the following. (1) Take the public's preferences as discussed under 'findings' into account in order to design a TPC system that can count on sufficient public support. (2) Investigate if a cooperation with employers is possible, so that credits can be provided to them which can in turn be used by their employees that need to commute. (3) Have investigated what credit allocation interval and price fluctuation are necessary for an effective TPC system. (4) When developing the trading platform, pay attention not only to functionality, but especially to how credit trading can be made fun for people. Involve future users in the entire development process. (5) Let people experience credit trading before TPC would actually be introduced, for example with a mock-up or via a simulation game. In this way, future users can get a better idea of what the system would entail and they can already discover whether they like trading credits.