

Measure No.11: Marketing and rewarding

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Marketing / social marketing and rewards-based schemes encouraging greater use of more sustainable modes and travel behaviours.

Interventions focus primarily on brand, image, lifestyle, and benefit, and can be used by cities in conjunction with other 'physical' interventions or as stand-alone programs. They are often referred to as 'soft measures', voluntary change measures, psychological and behavioural strategies, or mobility management tools.

11.1 Context and background

The following marketing and rewarding policies and measures might typically be implemented on a local level or as part of a SUMP.

This measure incorporates a range of marketing / social marketing and rewards-based schemes – whilst initiatives under Measures No.9 and No.10 (which are also seen as soft measures) will be more concerned with delivering travel information. Marketing and rewarding schemes are seen to be more persuading than travel plans and travel planning.

11.2 Extent and Sources of Evidence

In general, only little information of high quality is available. None of the documents reviewed used a method which is similar to a cost-benefit analysis (CBA). A 2011 study of gaps in knowledge regarding 'soft' transport policy measures stated that "future research should also find how to quantify certain benefits inherent to "soft" measures in CBA, i.e. the cost-effectiveness of techniques such as motivational support to set goals of changing travel"¹³.

Key messages:

- Marketing 'campaigns' appear to deliver their intended purpose successfully, with positive effects seen for interventions relating to road safety, cycling and travel mode.
- Individual travel marketing interventions can, by definition, deliver more focused actions.
- Reduction in car-driver trips ranging from 5% - 15% have been seen from individual travel marketing while the costs are described as 'low'.
- Rewarding schemes for public transport usage are able to increase the number of customers and to achieve high customer loyalty.
- 'Eco-driving' programmes appear to be a cost-effective way of reducing CO2 emissions. From a business perspective, eco-driving training can achieve pay back through the induced fuel savings.

Potential interventions

- Campaigns: Awareness raising/ marketing focussing on different aspects, e.g. active travel or traffic safety, and target groups, e.g. pupils or commuters
- Individualised travel marketing, which is a technique for changing personal travel behaviour through persuasive communication, also known as "voluntary travel behaviour change" (VTBC)
- Rewarding schemes for choosing public transport
- Eco-driving

11.2.1 Campaigns

A study in 2014 of material from school travel campaigns highlighted the 'striking' absence of systematic evaluations⁶. The study found that effects most widely reported are the number of participants and various stakeholders' impressions of the process. There is less knowledge about the long term effects of such schemes^{6, 13}.

However, there are a number of (high-quality) meta studies discussing effects of soft measures, partly citing effects of the same projects. A meta study published in 2011¹² reviewing evaluations of soft transport policy measures discusses the effects of campaigns on car usage. The authors point to methodological weaknesses of the primary sources. Another meta study analyses the effect of road safety campaigns on accidents¹¹.

Some in-depth information could also be extracted from ex post evaluations of German campaigns promoting cycling^{9, 2}, which had not been cited by the earlier mentioned meta analyses and which give a good indication of the budget which may have to be spent for a successful campaign.

11.2.2 Individualised travel marketing

The effects of individualised travel marketing mainly rely on a 2009 meta study³ of the effectiveness of their "IndiMark" programme. The IndiMark process uses direct contact with households to identify and meet their individual needs for support, and to motivate people to think about their day-to-day travel choices. This meta study is complemented by findings from the following research experiments:

- An experiment conducted at University of Cagliari, Italy in 2009⁷. This was a cognitive-motivational action facilitated by a GPS device (App).
- An experiment at the University of Tsukuba, Japan in 2008¹⁵. This was a persuasive communication program to induce public-transport-oriented residential (PTOR) choice. The experiment targeted students, who were in the process of changing their residential location.

11.2.3 Rewarding schemes

The following ex post evaluations have been reviewed:

- *Corporate PT pass in Massachusetts, USA*⁵
- *Free month travel card for Copenhagen car drivers, Denmark*¹⁰
- *Reward scheme for better public transportation "Belønningsordningen", Norway*¹⁰

11.2.4 Eco-Driving

The following evaluations have been re-viewed:

- The Dutch national ecodriving programme "Het Nieuwe Rijden"¹⁷
- The "SAfe and Fuel Efficient Driving" (SAFED) Programme in the United Kingdom¹

11.3 What the Evidence Claims

11.3.1 Campaigns

Travel awareness campaigns may reduce car usage and accidents in a statistically significant way. A meta-analysis of the effectiveness of soft transport policy measures⁸ published in 2008 found that the proportion of trips not conducted by car increased from 34% before to 39% after implementation of the campaign (evaluating the results of 72 studies). A meta-analysis of the effect of road safety campaigns¹¹ found that the weighted average effect of such campaigns is a 9% reduction in accidents (evaluating the effects of 119 campaigns in 67 studies).

In Munich, the share of cycling increased by four percentage points (from 13.6 to 17.4) in the period between 2008 and 2011. In 2011, the campaign "cycling capital Munich" was implemented, covering a budget of €1.2 million in that year⁹. Sixteen percent of this effect was attributed to the campaign. An evaluation of a campaign in four other German cities², which had an overall budget of €1.2 million (for all the four cities), also showed significant modal shifts. In a representative survey, 26% of respondents indicated to having increased the number of walking and cy-

cling trips on distances less than 5km. The survey was conducted during the campaign's implementation in 2009.

Travel awareness campaigns vary from relatively general to closely targeted, intensive approaches. The latter tended to achieve higher levels of individual change in car-use reduction^{12, 9}. These results fit well with the recommendations from the evaluation of a cycling marketing campaign in Munich⁹ that the campaign should focus on specific target groups to be more successful. Equally, the road safety campaign meta analysis¹¹ concludes that cam-paigns had a stronger impact on accident reduction when personal communication or roadside media was part of the delivery strategy.

11.3.2 Individualised travel marketing

The results indicate that providing information about sustainable mobility solutions and complementing this with persuasive motivation to act accordingly, may significantly reduce car usage of the participants. The cost of these interventions was described as "low". Reported estimates of travel-behaviour change achieved by Indi-Mark have consistently been in the range of a 5% to 15% reduction in car-as-driver trips³. Other sources report similar effects.

11.3.3 Rewarding schemes

An evaluation of a ticket subscription mechanism used by Massachusetts Bay Transportation Authority (MBTA) in Boston⁵ that offers additional revenue to the transit agency and decreases effective fares for riders found that Corporate Pass customers are using the pass significantly less than their Non-Corporate counterparts. Corporate LinkPass holders use the pass at least 20% less than Non-Corporate LinkPass holders on average, and the disparity in usage increases during summer and popular vacation months. In fact, 47% of Corporate Pass holders are using less than the full "value" of the pass on average, which results in an estimated \$4.4 million in additional annual revenue captured from Corporate LinkPass holders, and over \$9 million estimated for the entire Corporate Pass program. Furthermore, Corporate Passes generate a

steady revenue stream while Non-Corporate Passes have higher fluctuations due to seasonal variability. Additionally, the number of Corporate LinkPasses sold were unaffected by a recent fare rise suggesting (although not definitively proving) that the Corporate Pass may offer some additional insulation to fare increases.

An evaluation was also conducted on the effects of a price promotion in the form of a free month travel card being offered to a random sample of Copenhagen car drivers fulfilling a number of screening criteria¹⁶. The resulting change in the use of public transportation was measured, compared to a control group, together with a number of possible antecedents derived from previous research. The price promotion led to a significant increase in commuting by public transport: the use of public transportation doubled in the experiment group and a positive effect remained half a year after the intervention.

The effects of a Norwegian government public transport reward scheme providing funds to local municipalities were evaluated in 2007¹⁰. Most of the money from the "Belønningsordningen" reward scheme has been used to reduce fares and to improve service delivery. Thus passengers benefited indirectly from the reward scheme by e.g. lower tariffs. Between 2004 and 2007 on average €14 million per year has been given to the participating cities in total. As a result, the scheme has facilitated a small increase in public transport in the cities involved. For example in Trondheim funds have been used for financing a 12% tariff reduction in 2004 and a later tariff freeze at the 2004 level, resulting in an increase in the number of public transport journeys per person per year of 2,8% from 2004 to 2006.

11.3.4 Eco-Driving

The evaluation of the nationwide Dutch "Het Nieuwe Rijden" programme provides an overview of the evidence on the effects of raising awareness and encouraging drivers to drive more energy-efficiently¹⁷. It states some substantial reductions in CO₂ emissions and positive effects on other issues like road safety, traffic noise nuisance and driver stress. The CO₂ emission re-

duction in passenger traffic achieved as a direct result of the programme is claimed to be 0.22 Mton, plus a 0.10 Mton reduction from freight and public transport. The evaluation emphasises the high cost-effectiveness of the measure: It calculates less than €10 costs per ton avoided CO₂ emissions. For calculations of the cost-effectiveness of Eco-Driving measures the study¹⁷ points out that the government loses revenues as a result. For example, tax-exemption for fuel saving in-car devices and less tax revenues due to the fuel savings themselves. This would result in a mean cost-effectiveness for the government of between €40 / ton CO₂ emission avoidance (including tax-exemption) and €300 / ton (including both tax-exemption and less tax revenues through fuel sales). Only when income losses for the government are not taken into account (which is usually the case for CO₂ reduction projects in traffic and transport), the cost-effectiveness for the government goes up to the beforementioned less than €10 per ton.

The Safe and Fuel Efficient Driving (SAFED) programme carried out by the UK Department for Transport also offers results¹. Selected drivers of Heavy Goods Vehicles (HGVs), and later also Passenger Carrying Vehicles (PCVs) like buses and coaches received training on safe and fuel efficient driving techniques by a network of 200 different SAFED trainers. The participating HGV drivers achieved 10% fuel savings, 8 million GBP financial savings and reduced CO₂ by 28.468 tonnes. They also reduced gear changes by 36.9%. For PCVs a feasibility study thus suggested an average of 12% fuel savings per driver, an average 40% reduction in gear changes and a 60% reduction in safety related faults.

11.3.5 Methodologies and Caveats

Evidence found on the effectiveness of campaigns suffers from significant methodological weaknesses. An important problem is the issue of weak quasi-experimental designs that have been used by most of the primary studies on campaigns. For example, due to the lack of control groups, the 'one group pre-post-test designs' do not permit strong causal inferences. This in turn limits the policy recommendations that might be drawn from the results.

The Cycling Capital Munich campaign⁹ is part of a series of policy measures. The (potential) interrelation between these policy measures or any influence on this campaign coming from the other independent developments was not part of the methodological approach (e.g. by using a control group). The authors acknowledge this fact and develop their own methodology to isolate the campaign's effects. This methodology assigned stated preferences to responsiveness to certain kinds of policy measures. This approach has never been peer-reviewed.

Evidence about individualised travel marketing is based on using control group data and other statistical tests, and can thus be considered significant^{3, 15}.

The evidence on rewarding schemes is partly based on using control group data and field experiments and can also be considered significant¹⁶.

The studies on eco-driving did not gauge whether and how long-term effects may occur or not. However, eco-driving training as part of the driving training and test has the potential to reveal long-term effects¹⁴.

11.4 Lessons for Successful Deployment of this measure

Behavioural changes are easier to achieve if one connects soft and hard measures, i.e. campaigns with physical improvements. Such couplings are easier to achieve if the campaign activity is an integrated part of transport plan, mobility- or health strategy⁶. In particular, supportive hard policy measures are able to increase effectiveness of campaigns and individualised travel marketing^{12, 3}. A number of VTBC projects in German cities called "IndiMark" (see above) led to an average increase of 23 additional public transport trips per person and year³. When IndiMark was delivered alongside infrastructure improvements, the average increase in PT trips per person per year was more than doubled (+48 trips per person and year). Some argue, however, that it remains unclear in what ways hard transport policy measures (e.g. cycling infrastructure improvements) impact on the effectiveness of soft policy measures (e.g. cycling cam-

paings) as well as possible effects in the reverse direction¹³.

Some argue that there is limited understanding about the long-term effects and the associated time-scale of behavioural responses, including what other factors may account for long-term effects¹³. However, the evaluators of IndiMark claim “increasing evidence that behaviour changes generated by IndiMark [Individualised travel marketing] are sustained over time”, justifying this by “repeat travel surveys conducted up to four years after”, which had shown “that the behaviour change achieved by the original VTBC interventions – a 14% reduction in car-use – has been ‘locked in’ with a 13% reduction in car-use measured three and four years after the intervention”.

Regarding upscaling of rewarding schemes, the evaluation of the Norwegian scheme to reduce fares¹⁶ point out that although the increase in the number of trips by public transportation due to the free one month travel card is impressive, it needed to be acknowledged that this was an increase from a low level of 5% of commuting trips to 10% and only 7% remained six months after the intervention. The low absolute percentages illustrate the limitations of this measure.

As regards target groups, there appear to be no political, social or economic barriers to suppose that the approaches used are not transferable. As regards other local conditions, there are no systematic reasons to suppose that the evidence findings would not be relevant in other locations. On the contrary, it is argued that persuasive communication programmes to induce public-transport-oriented residential (PTOR) choice could be implemented at any university, workplace, or housing agency, leading to less car use¹⁵. The IndiMark programme was successful in three continents³. Accordingly, there is no indication that eco-driving may be more successful or less promising under other circumstances than the reported schemes in the Netherlands¹⁷ and the UK^{1, 14}.

11.5 Additional benefits

As well as the evidence of economic and financial benefits of interventions discussed above, there are a number of additional benefits that are claimed for these policies:

- *Personal rewards:* ‘Social benefits’ are likely to accrue indirectly from the measures being marketed, rather than the marketing campaigns themselves. Rewards for public transport use may accrue social benefits for the individuals receiving them,
- *Safety Benefits:* Changes in driving styles and approach that follow from promoting Eco-driving may also bring about safety benefits, as well as reduced noise and less stress for drivers.
- *Community benefits:* The mode shift from car to public transport brought about by campaigns has the potential to bring wider air quality and noise benefits to communities.

11.6 Summary

In summary, the evidence reviewed here suggests that the following conclusions might be drawn:

- Campaigns can successfully deliver their intended purpose. The effect size depends on several factors such as budget, target groups and delivery strategy. The more focussed an approach, the more successful it is. The exact results of the campaigns on car usage are neither consistent nor reliable.
- Individualised travel marketing is by definition more focussed than campaigns. Participants of such programmes consistently reduce their car-as-driver-trips in the range of 5% to 15%.
- To be effective, marketing and rewarding schemes should also be supported with “hard” policy measures such as infrastructure schemes. This bundling of measures appears to be a successful strategy.
- Rewarding schemes for public transport usage are able to increase the number of customers and to achieve

high customer loyalty.

- Ecodriving programmes appear to be a cost-effective way of reducing CO₂ emissions. From a company's point of view, eco-driving training pays back through the induced fuel savings.

Marketing and rewarding schemes as defined in this review do not depend on favourable circumstances. However, they should be shaped to specific target groups to be most effective.

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