

Summary:

PUST – a competition for environmentally friendly commuting

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PUST was a competition arranged by Bergens Tidende for environmentally friendly commuting between the employees of different companies. The number of participants in the competition who drove to work was less than among a control group representing the working population in Bergen. PUST participants were also more environmentally conscious than the control group. While only 17 percent of the participants of PUST drove to work, more than half of the control group did so. During the competition period seven percent of the PUST participants changed from car to public transport, walking or cycling, and the number of passengers in the cars increased. The result was an overall reduction in CO₂ emission of about 15 percent.

Can a competition stimulate a change in travel behaviour?

The extent to which competition between companies encourages employees to change their mode of transport to work and the climatic effects of any change were the main questions in the project documented in this report. As the competition developed, further questions concerned who was recruited to this type of competition and what their motives were for participation.

Bergens Tidende, a daily newspaper in Bergen, initiated the competition in the period 4 February to 22 March 2013. Requests were made to a number of companies in and around the city with an invitation to employees to register their commuting during the period. Participants in PUST created their own profile on the newspaper's website to register their travel to and from work.

During the weeks of the contest, the point was that as much of the route as possible to and from work comprised "green kilometres". This was recorded on individual profiles and points were gained. Going on foot or by bicycle, bus, train, light rail, carpool (minimum two people), electric car or other electric vehicle, ferry and boat were all considered "green".

Point tallies registered were updated daily, so that employees could follow how their company was doing in the competition, and businesses were ranked by the average number of green kilometres travelled per participant.

There was thus not necessarily a change in mode of travel, but an "environmentally correct" way awarded points, which meant that those who were already commuting in an environmentally friendly manner had an edge over those who had to make changes in their mode of travel.

The Institute of Transport Economics (TØI) conducted a survey from beginning to end of the competition, the basis for comparison being a control group established to answer most of the questions put to the PUST participants.

PUST participants differ from the average commuter in Bergen

The PUST participants were on average 41 years of age, while the average control group member was three years older. Fifty-one percent were women and in the control group 43 percent. Half of the PUST participants and 40 percent of the control group had university education at high level.

The workplaces of PUST participants were for the most part located in central areas and at Ytrebygd (Sandstli/Kokstad). The distribution of residents was similar between the two groups, except for a small majority of PUST participants who live in Årstad.

In addition to locations of work and abode, access to public transport and to other resources, the norms and attitudes of people have a bearing on the mode of transport they choose when commuting. The survey elicited this type of information for the two groups. Comparing between the groups indicated that the PUST participants differed from the control group in norms and attitudes to traffic and the environment. The PUST participants treated environmental and health problems related to car use and traffic more seriously than the control group did. They are less habitual car users, and the car is not part of the daily routine in the same manner as among the control group. The PUST participants had a positive attitude to walking, cycling and use of public transport, and intended to travel by more environmentally friendly means during the competition period. Social and personal norms relating to restrictions on car use were also stronger among PUST participants than among the control group.

No strong foundation of PUST in the companies

It can be assumed that the more attention the competition receives internally in participating firms, from both management and others, the greater the participation and the better the anchoring.

Only 10 percent strongly agree that "*PUST is a topic of conversation among colleagues*", while 42 percent disagree to varying extents (Figure 1).

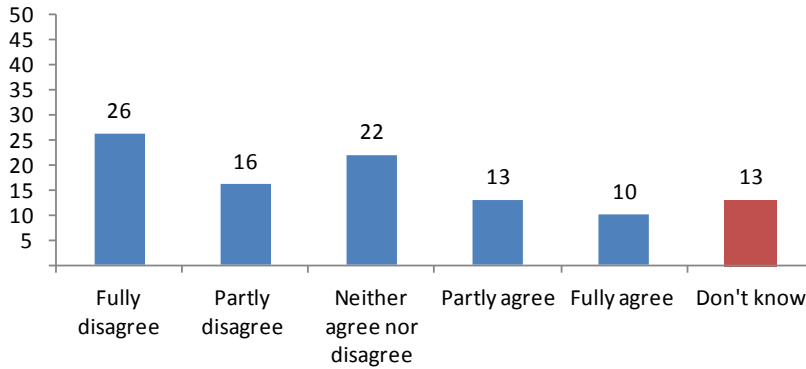


Figure 1 Degree of agreement with the statement – PUST is a topic of conversation among colleagues. Percent. N=1028

The greater the number of employees of a firm taking part in this type of competition, the greater the stimulation and motivation to cooperate enthusiastically during the competition period. However, a rather low level of participation in companies is indicated (Figure 2). While only 17 percent fully agree with the statement that many of their colleagues take part in PUST, nearly 40 percent don't know this.

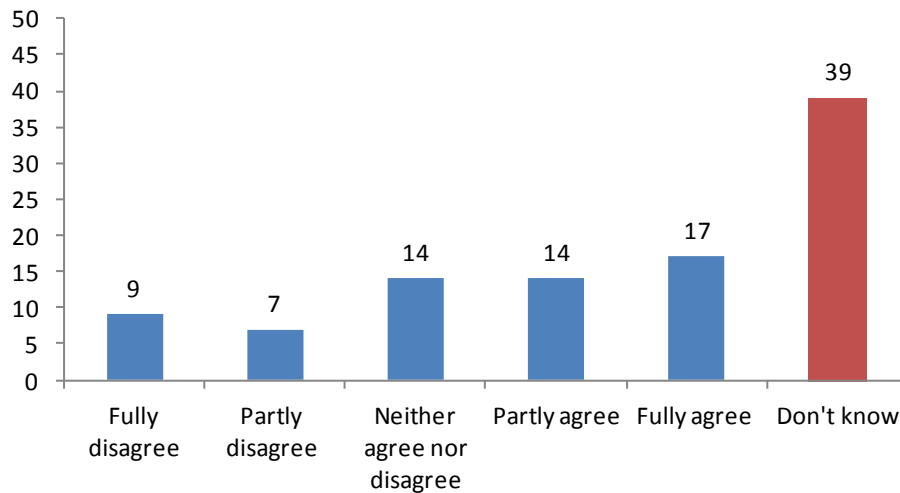


Figure 2 Degree of agreement with the statement – Many of my colleagues participate in PUST. Percent. N=1028

The attitude of management to this type of competition can have an impact on participation and effort. Figure 3 shows the response to the statement "The management expects employees to participate in PUST". The results indicate that expectations of management are relatively low, with only 12 percent strongly agreeing that it is expected of them to participate in PUST. Nearly one-third do not know what the management's expectations are.

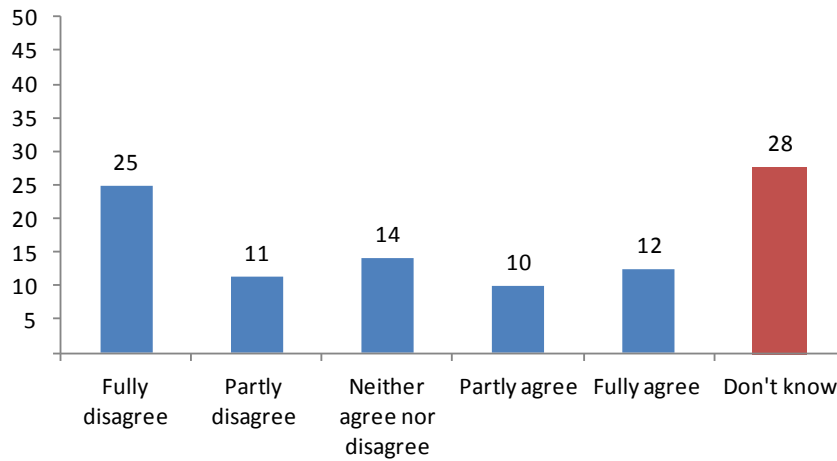


Figure 3 Degree of agreement with the statement – The management expects employees to participate in PUST. Percent. N=1028

The responses given in Figure 3 do not convey the impression that PUST is firmly anchored in companies at either management or collegiate level. Relatively high proportions who do not know what the expectations of the management are, and their knowledge about whether their colleagues are involved or not, is poor. It is not a big topic of conversation among employees, which suggests that it is a more individualized competitive situation than one might think. About 60 percent say they took the initiative to participate in the competition themselves.

Good starting point – modest change

Only 17 percent of the PUST participants drove to and from work when the competition started (Figure 4), while more than half of the control group did. Forty-four percent of the PUST participants travelled by public transport and only 22 percent of the control group did.

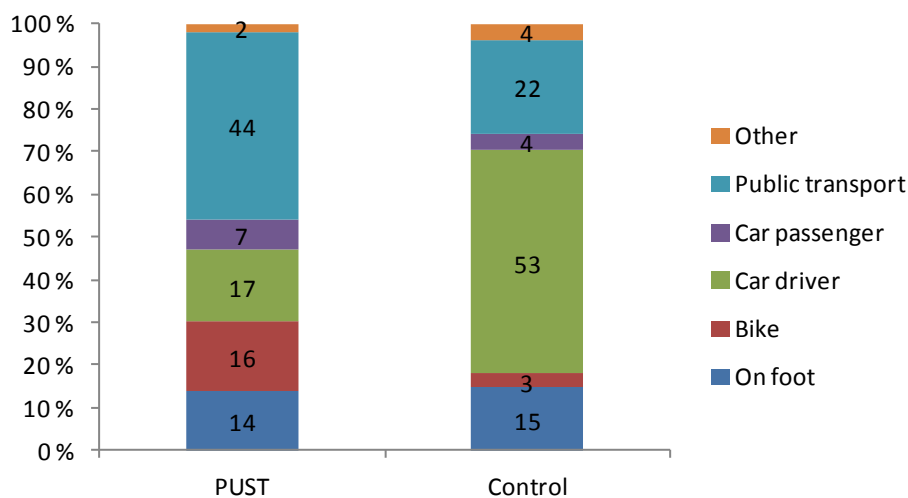


Figure 4 Most frequently used transport mode in the two weeks before PUST started. N=1028. Percent

What has happened in the period? Figure 5 indicates the changes in transport use during the competition period of both PUST participants and the control group. We can see that 73 percent of the PUST participants went on foot, cycled or travelled by public transport before the competition started and at the end of the contest period. For the control group this is 36 percent. In the PUST group, 7 percent changed from car to more environmentally friendly modes of transport, and 5 percent in the control group. As we can see, the changes were not dramatic.

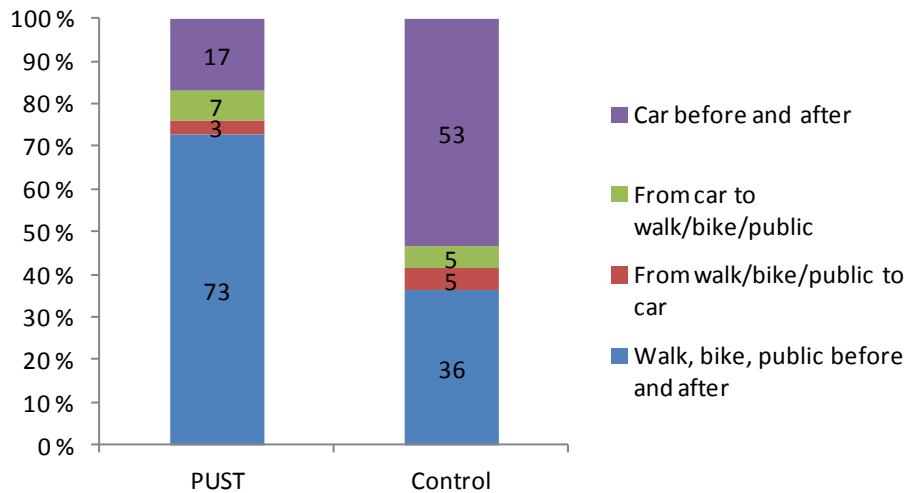


Figure 5 Changes in transport mode during the competition period in PUST. Percent.

To determine the climatic and environmental effects of the competition, the emissions of CO₂, PM, NO_x and NO₂ were calculated for car users during the course of one week (the most used transport mode). Emissions were allocated to all in the car, and the type of car (year and type of fuel) was taken into account. Increased occupancy in the car, in addition to the relatively modest decline in the proportion of drivers, is the main reason for PUST participants showing 15-20 percent reduced emissions (Table 1). For the control group the change is very small, but the emission much higher due to the high level of car use both before and after.

Table 1 Emission from cars per working week calculated (distributed) on the basis of all respondents.

	CO ₂ (kg) Carbon dioxide	Climate impact ¹ CO ₂ (kg)	PM (g) Exhaust particles	NO _x (g) Nitrogen oxides	NO ₂ (g) Nitrogen dioxide
PUST – before	3.6	4.0	0.3	7.7	1.9
PUST – after	3.0	3.2	0.2	6.7	1.6
Change	-18.0 %	-18.0 %	-21.0 %	-13.1 %	-15.3 %
Control – before	11.0	12.0	0.4	22.4	7.0
Control – after	11.0	11.9	0.4	22.1	6.9
Change	-0.2 %	-0.2 %	1.8 %	-1.2 %	-0.7 %

¹ CO₂-emission in a life-cycle perspective

A competition for those already travelling green?

The results presented in this report show that the PUST participants differed, in different ways, from the average employee (the control groups). Contrary to the control group, PUST participants drove to work much less when the competition started and were more positive to environmental issues.

The competition rules required participants to record the number of "green" kilometres travelled while commuting. Those who were already travelling by environmentally friendly means had a particularly good starting point and high motivation to participate in the competition. However, for a car driver with a long way to work and not a particularly good public transport supply available, the motivation to participate was probably significantly lower. It would take substantial willpower to leave the car at home and instead cycle, take the bus, or alternatively a lift from a colleague. Basically, recruitment to the competition was skewed. Those who signed up were those who were already travelling by environmentally friendly means. For many it was not necessary to change their mode of travel to work to earn points in the competition. They could merely continue in the same manner and at the same time gain points in the competition. No big change was necessary for the vast majority.

Despite this, there was still an environmental improvement among participants, primarily because the number of people in the car increased in addition to 7 percent who switched from car to going on foot, cycling or by public transport. PUST participants were also well motivated by their environmental conscience, which was stronger than among the control group.