BACKGROUND
The necessity of changing travel habits in a more environmental friendly direction is a major concern in most city areas. In Norway, increased use of public transport, at the expense of car use, is a common political objective. In order to reach this goal, it is necessary to get through to the youngest travellers. Earlier studies have shown that it is difficult to change travel habits when you have become used to travelling by car.

When it comes down to travel mode choice, young people who recently have obtained a driving licence, are in an important phase. In this paper, we use results from a panel survey in order to discuss what happens in this transition from being a captive public transport user, to having a car as an alternative when they get their driving licences. In what way do changes in car access influence travel activity, choice of transport mode and attitudes towards public transport? More knowledge on these issues is important for identifying possible strategies in order to change travel habits in a more environmental friendly direction.

METHOD
The data referred to here were gathered in connection with the realisation of packages of measures for public transport, partly financed by the Norwegian Ministry of Transport and Communications. There were conducted panel surveys, where the same persons are interviewed in the before and after study. The studies were carried out in 8 medium sized Norwegian urban areas over a 2 year period. The panel data has made it possible to investigate the effect of changes in attitudes, knowledge and individual conditions related to mode choice. The benefit of using a panel survey is the possibility to control for different changes between the before and after period, and to follow specific user groups (Kjørstad and Norheim 2005).

We have used the panel survey as a means to analyse the group of young people under 26 years old in the after study. Our goal was to find out more about the changes in their travel patterns etc. when they obtain driving licence.

When we refer to the "before situation" we mean results from the first survey, before public transport measures were undertaken. When we refer to the "after situation", we mean results from the second survey, conducted after the measures where undertaken. Nevertheless, the main focus in the paper is not...
on the effects of the public transport measures. We focus on changes in travel activity etc. caused by driving licence holding.

The panel survey consists of a total of 4826 respondents, of which 322 respondents are younger than 26 years and therefore included in our analysis. The relatively small number of respondents means that it is necessary to be cautious with the interpretation of the results. We discuss some tendencies we have found in our data material, which need to be the object of further discussions in order to draw any conclusions. Nevertheless, we see this paper as a beginning of further discussions and analysis.

**WHO WERE OUR RESPONDENTS?**

16 per cent of the young people under 26 years old have acquired a driving licence from the before to the after study (chart 1). 39 per cent have their licence both in the before and after situation, while 15 per cent, which are the 18 year-olds and older still have not acquired a driving licence in this period.

![Chart 1: Changes in driving licence holding in the age group 18-25 years, from the before to the after study. Average age from the before to the after study. Panel surveys in 8 Norwegian city areas. N: 276.](chart1)

<table>
<thead>
<tr>
<th>Percent</th>
<th>Age (average.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obtained driving licence</td>
<td>16</td>
</tr>
<tr>
<td>Driving licence both before and after</td>
<td>39</td>
</tr>
<tr>
<td>No driving licence before or after</td>
<td>15</td>
</tr>
<tr>
<td>Too young to get dl (&lt;18 years)</td>
<td>29</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
</tr>
<tr>
<td>N</td>
<td>322</td>
</tr>
</tbody>
</table>

The average age among the respondents is 20 years. The average age is higher - 23 years - among the young people who have a driving licence both in the before and the after study (referred to as the "old" driving licence holders).

Not surprisingly, the change in occupation is greatest among the youngsters who have obtained driving licence during the survey period (referred to as "new" driving licence holders) (chart 2). 25 per cent has changed their occupation from student to employee. In the after situation, 38 per cent of the "new" licence holders are working, but more than half of them are still students.

The occupation has not changed significantly among the "old" driving licence holders or among the young people who are younger than 18 years in the after study.

The share of students has decreased from 82 to 69 per cent among those over 18 years who still do not have a driving licence. The share of employees have increased from 14 to 24 per cent from the before to the after study.

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This indicates, not surprisingly, that a change in occupation from student to employee have an influence on whether you give priority to acquiring a driving licence or not. Both economy and changes in the journey to work do probably influence on people’s choice.

### Changes in travel activity when obtaining a driving licence

A Swedish study among young people shows that access to car is seen as an important determinant of freedom of movement (Bernow 1991). The connection between access to a car and travel activity is found in a number of studies in Norway as well as other countries (Vibe et.al 2005). The independency increases because respondents no longer have to act in accordance with time tables. Respondents can get in their car and travel whenever and wherever they want, which makes it easier to travel. Therefore, it is not surprising that the travel activity increase among the youngsters who obtain a driving licence during the period from the before to the after study (chart 3).

When we look at the before situation, there is no significant difference between the young peoples travel activity, although it seems to be a higher travel activity among the group who has got a driving licence. This is confirmed by the latest Norwegian National Travel Survey (NTS), carried out in 2005. In average, the young people under 26 years old who have a driving licence undertake 0,5 more journeys per day than those without a driving licence.

Among those who obtained a driving licence during the period from the before to the after situation, the travel activity increases significantly. Except from this group, there is a general tendency of decrease in travel activity. The travel activity among those who don't have a driving licence neither in the before nor the after situation have decreased quite a lot.

The young people under 18 years old in the after study do have a high travel activity both in the before and the after situation.
Not surprisingly, journeys by car constitute the increase in travel activity among the “new” licence holders (chart 4). Journeys made by bike and especially journeys made as pedestrians and by public transport are significantly reduced among the “new” licence holders. In other words, it is not only the increased travel activity that is "absorbed" by car use; also journeys which before was undertaken by other transport modes are transferred to car journeys.

The reduced travel activity among young people over 18 years old who have not got a driving licence is first and foremost connected to a decrease in the use of public transport.

The youngest travel more by public transport and as car passengers, and less by bicycle and as pedestrians.

In sum, our analysis indicates that it is first and foremost public transport that looses market shares when youth obtain their driving licences. Nevertheless, the public transport also seems to loose market shares among the young people over 18 years old without driving licences. The difference is that the public transport journeys are transferred to car journeys among the “new”
licence holders - while the young people without driving licence have reduced their travel activity altogether.

**THE COMPETITION FOR THE HOUSEHOLD’S CAR INCREASE WHEN YOUTH OBTAIN A DRIVING LICENCE**

Having a driving licence does not necessarily mean that you have access to a car. Especially young people who still don't have their own car are dependent on borrowing their parent’s car.

To find out more about the conditions of competition for the car, we have analysed the households’ access to car in terms of number of driving licences in proportion to the number of cars (chart 5). When we use this variable, we see that competition for the households cars have increased among the young people who have obtained a driving licence during the survey period. The change is significantly different from the “old” licence holders, who slightly improved their competitive conditions in the same period.

*Chart 5*

In other words; the new licence holding have not been followed up by buying more cars. Access to car therefore depends on whether the licence holder “wins” the competition for the household’s single car. The increase in car use indicates that the “new” licence holders do win at least some of the discussions.

**THE ATTITUDE TOWARD PUBLIC TRANSPORT**

In order to illuminate whether changes in access to a car influence on attitudes towards public transport, we have constructed an index of the following allegations/claims:

*By using bus, I reach my destination quickly
*It is comfortable to travel by bus
The allegations/claims are, in one way or another, indications on attitudes towards the bus supply. The index range from -12 to +12, where -12 is the most negative and +12 is the most positive.

<table>
<thead>
<tr>
<th>Index for attitudes to the PT supply</th>
<th>Before*</th>
<th>After*</th>
<th>Change*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acquired driving licence</td>
<td>3,31</td>
<td>2,38</td>
<td>-0,92</td>
</tr>
<tr>
<td>Driving licence both before and after</td>
<td>1,96</td>
<td>1,33</td>
<td>-0,63</td>
</tr>
<tr>
<td>No driving licence before or after (18 yrs+)</td>
<td>2,96</td>
<td>3,24</td>
<td>0,29</td>
</tr>
<tr>
<td>&lt;18 yrs – driving licence not relevant</td>
<td>3,20</td>
<td>2,32</td>
<td>-0,88</td>
</tr>
<tr>
<td>Total</td>
<td>2,68</td>
<td>2,09</td>
<td>-0,59</td>
</tr>
<tr>
<td>N</td>
<td>322</td>
<td>322</td>
<td>322</td>
</tr>
</tbody>
</table>

Except from those over 18 years old who did not get a driving licence in this period, all groups have become more negative towards the supply in the after situation. It is worth to notice that in the same period, the public transport supply actually improved in most of the city areas included in the analysis.

Why have young people over 18 years old without a driving licence become more positive towards the public transport supply, in contrary to other groups? One explanation is that they have got a better supply from the before to the after situation. And because they haven’t got a driving licence, they have experienced the improvements, contrary to those who got access to car in the same period. On the other hand, why isn’t this valid also for the group of respondents under 18 years old? They have become less satisfied in the same period. Another question is why the group over 18 years old without a driving licence travels less by public transport in the after study, even though they are more satisfied with the supply. Changes in personal conditions, as disposable income, occupancy, leisure activities etc. can be possible explanations. Nevertheless, in order to discuss this question further it is necessary to do more in depth analysis than what was possible with the limited number of respondents in our data material.

The “old” driving licence holders are the most negative in the before situation, and they are even more negative than others in the after situation. This tendency is confirmed in an attitude survey among Norwegian youth in Oslo; young people who have got a driving licence were more negative towards the public transport supply than the young people who hadn’t got a licence (Ruud 1999).

**DISCUSSION**

The young are a mobile generation. A comprehensive study among Swedish youth found that environment and mobility are seen as two of the big issues of the future (Puranen 2001). This is paradoxical; a mobile lifestyle generally makes a large impact on the environment. Nevertheless, according to the
youth quoted in this study, the solution is not to stop travelling but to encourage technological development and shoulder more responsibility.

Public transport is an area of commitment in many political speeches on environmental issues. Youth are experienced public transport users because they are captive riders until they are 18 years old. Nevertheless, they are in danger of becoming a lost customer group for public transport when driving licences – and later car ownership – is within reach. This paper shows that young people over 18 years old travel less by public transport in the after situation, despite improvements in the public transport supply. The tendency is biggest among the "new" driving licence holders, and this group has increased their travel activity in the same period. So far, it seems to be far from the political visions to the realities of life.

The big issue, which needs to be discussed further, is how it is possible to handle young people's wishes and needs for increased mobility, and at the same time meet the environmental consequences of this freedom.
BIBLIOGRAPHY


Puranen, B. (2001) Young mobility. Possibilities and risks, Sweden, the Swedish Road Administration.
