

Car sharing and car pooling well received

Two alternative transport solutions, car sharing and car pooling, have been well received in northwest Jutland. A study undertaken in the village of Humlum in Struer municipality thus showed that 10% of the households are interested in participating in a car sharing scheme, while a study at four large enterprises in northwest Jutland showed that 23% of the staff are interested in participating in organized car pooling, with 7% already doing so.

Traffic - a collective problem

Background and purpose

Traffic is something that affects and involves us all. Moreover, the majority of the population has a daily need for transport.

One of the central problems of living in the country is accessibility. In contrast to major towns, rural areas lack the foundation for establishing public transport with a frequent service and good connections. The private car is therefore the dominant means of transport in rural districts.

Traffic presents a common problem for us all in that it has considerable impact on the environment and accounts for just over one fifth of Denmark's total energy consumption. The introduction of new forms of transport could help Denmark meet its international obligations with respect to reducing CO₂ emissions. Energy consumption in the transport sector could be reduced considerably by changing behaviour. This would halt the increase in traffic and possibly even lead to a reduction in volume.

New possibilities in the passenger transport area could lead to a considerable reduction in transport volume. For the first time in Denmark, a major interview survey has been undertaken of people's wishes and needs with respect to car pooling and car sharing.

The aims of the project "Alternative Transport Solutions in Rural Districts" are to provide citizens in rural areas with a broader selection of choices in the transport area, to create possibilities for individuals to reduce their transport expenses, and to reduce transport by private car, especially between home and work, as well as to reduce the environmental impact of traffic and enhance traffic safety through reducing traffic volume.

The undertaking of the study was made possible by financial support from the Danish EPA.

A questionnaire survey in northwest Jutland

The study

The demand and market survey in northwest Jutland was carried out over the period May to December 1997 in the seven most northwestern municipalities of Ringkjøbing county. The survey was a quantitative questionnaire survey encompassing two demand and market analyses - one for car sharing and one for car pooling.

The analysis has been undertaken to gain insight into the wishes and needs of future potential users, to identify optimal areas to focus on, and to identify target groups for car sharing and car pooling.

The results have been used to determine how to implement car pooling and car sharing in practice so as to pave the way for their implementation in 1998.

The village of Humlum, with 861 inhabitants and 337 households, was selected

for the survey on car sharing. Forty-five percent replied.

The survey on car pooling was carried out at four major enterprises in the region - two private and two public: Bang and Olufsen, Hvidbjerg Windows, Struer Municipality and Holstebro General Hospital.

The two forms of transport supplement each other. While car pooling can be used in a commercial context with regard to transport between home and work, car sharing fulfils many people's needs for car transport, especially outside working hours.

Good interest in car pooling and car sharing

Main conclusions

In Humlum, 28% of interviewees state that they could well imagine participating in car sharing. Based on the results of the study, it is cautiously assumed that 20% of the households in Humlum will participate in the car sharing scheme. With a total of 337 households, this corresponds to a customer base of 67 households. The actual demand for care sharing will probably be somewhat less at the beginning. A realistic estimate is that 10% of the households will be interested from the start. This gives 33 members in the car sharing association. Experience with car sharing in rural districts shows that demand is met by one car per five households, and the association is therefore starting with six cars.

A good estimate of the immediate effect of car pooling is that half of the 16% interested from the beginning will join the scheme. For the enterprises participating in the study, this corresponds to the immediate participation of approx. 400-500 employees. Extrapolating to the whole of Ringkjøbing county - persons who cross at least one municipal border daily and those commuting over the county border - yields a current potential of around 4,000 persons who could travel two, three or perhaps even four persons in each car. In the course of a few years this could be doubled to 8,000 participants, corresponding to the whole group of persons who claimed to be interested in car pooling in the study.

It is important that the car pooling is very well and permanently organized. An attractive precondition mentioned by nearly everyone is that there should be a contact bureau where the right partners can be paired off. This contact bureau was established in Struer as part of a combined transport office in January 1998.

A detailed analysis

Project results

Car pooling

The total number of people who replied to the questionnaire is relatively low - just under 50%. However, of the 301 interviewees, 23% indicate that they are interested in car pooling. Of these, some already participate in car pooling, while the remaining 16% are interested in seeing organized car pooling set up.

The interest in car pooling is linked to a number of factors elucidated by the study, namely transport needs, transport time, spouse's working hours, number of family members with a driving licence, and the age of the car.

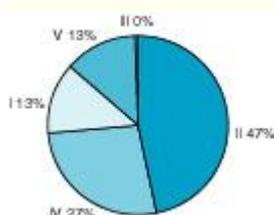


Figure 1: Expected frequency of car sharing

- 1 I Less than once monthly
- 2 II Two--three times monthly
- 3 III Once weekly

4 IV Two–five times weekly

5 V More than five times weekly

The primary motive for participating in car pooling is financial savings for the individual participants in the scheme.

Not surprisingly, there is a close correlation between the daily transport distance and interest in participating in car pooling. Persons with more than five km to work are the most interested. Of those driving less than 10,000 km per year, only five percent are interested in car pooling. In the case of those driving more than 30,000 km per year, the corresponding figure is 35%.

In addition, interested persons are to be found among those who are prepared to accept the longest transport times. The more time spent on transport between home and work, the greater the interest in car pooling.

There is also a correlation between interest in car pooling and the spouse's working hours. If the spouse has variable working hours, interest increases because the spouse can then have free access to the household's car.

Moreover, the greater the number of driving licences in the family, the greater the demand for car pooling. There are more persons to share the family car and other solutions to transport needs are therefore found. Surprisingly, however, there is no correlation between interest for car pooling and the number of cars in the household. The age of the car does not play any role for interest in car pooling either.

In the case of people already participating in car pooling, the most motivated group is persons those who have fixed working hours. The journey is not increased very much to collect other people since the passengers are picked up along the already planned route to work. In addition, their places of work are often the same or lie close to each other in the same area - town or industrial district. It also transpires that very little direct payment is involved between car pool partners. It is often done on a barter-economy basis, with people taking it in turns to drive and provide the car.

Car sharing

Car sharing has been known and practised with great success abroad for many years. There are currently about 350 associations in Europe.

Car sharing associations are now to be established in northwest Jutland. For example, the population of a village or a housing district could share cars. Car sharing will most often be organized in associations where the interested parties are members.

Needs and wishes have been investigated in Humlum, a village six km north of Struer. It transpired that there is considerable interest and hence basis for the idea in Humlum. A necessary foundation of just over 30 associated households is present, and the Humlum Car Sharing Association held its inaugural general assembly at the beginning of January 1998.

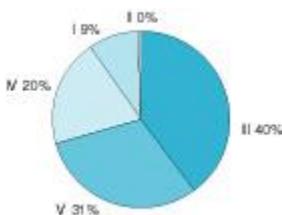


Figure 2: Car pooling frequency

1 I Less than once weekly

2 II Once weekly

3 III Several times weekly

4 IV Once daily

5 V Several times daily

The questionnaire survey shows that the majority of the interested households have an annual transport need of 20-25,000 km per year. Moreover, one third of the households have two cars.

The interviewees primarily want to use car sharing for the weekly shopping, family visits, or on the occasions when the spouse uses the household's own car.

Demand for car sharing primarily reflects an occasional need for transport. This is the case with the weekly shopping and family visits, where the need can arise when other family members use the household's own car. In addition, it must be expected that use of the cars is concentrated on Fridays to Sundays, as indicated by foreign experience. During weekday working hours the car fleet capacity could be rented out to private and public enterprises as a supplement to existing commercial car fleets.

Calculations show that on average, each household will use the scheme twice a week. This will give a total of 10-12,000 km annually per member household in the car sharing association. Interest and consumption increase with the number of persons in the household and the age of their own car.

The decisive determinants of membership are access to the car, the booking system and prices. In Humlum, a distance of 600 metres from home to the car sharing station was the maximum acceptable to the interviewees, this being considered walking or cycling distance. Half of the interviewees were willing to accept a booking period of more than 5 hours while 31% were only willing to accept 30 minutes. This could present a practical problem as it will probably be difficult to administer such a short booking period. A possible solution is to differentiate the price such that it is more expensive to book immediately before a peak period such as a weekend.

The questionnaire survey also asked what deposit, membership charge, monthly membership fee and car hire charges the interviewees considered reasonable. The questionnaire suggested a deposit of DKK 6,000, a membership charge of DKK 1,000 and a monthly membership fee of DKK 150. The majority of the interested persons considered these prices reasonable. A few recommended higher prices. Only one quarter considered the deposit and membership charges to be expensive. Half of the interviewees considered a weekend car hire charge of DKK 500-600 (for 250 km incl. petrol) to be appropriate.

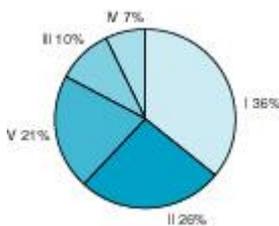


Figure 3. Car pooling pick-up points

- 1 I At the passenger's home
- 2 II At a car park
- 3 III At the driver's home
- 4 IV At a motorway lay-by
- 5 V Other

Experience from Germany and Switzerland indicates that the capacity necessary in rural districts is one car per five households. With 30 households having joined, six cars at the car sharing station provide good flexibility to meet the variable transport needs of members. The car fleet could consist of a couple of small cars, two slightly larger cars, a station car and a minibus. Together this would make it attractive to participate in the scheme and join the association. The car sharing vehicles are no more than three years old, are always ready for

use at the local car sharing station, and can be booked a relatively short time in advance. The practical work of servicing, cleaning, paying insurance and road tax is left to the car sharing station. In addition, users pay for the number of kilometres driven and the time used. This means that it is 25-30% cheaper to drive in a car sharing vehicle than in one's own car, all costs taken into account.

If the household's total transport needs are 15-20,000 km per year, membership of a car sharing association provides definite economic benefits. As a member of such an association, one shares all the fixed charges. In the long run, it might be possible to reduce registration taxes for car sharing vehicles - as in other European countries. This would mean further savings for users.

Experience indicates that car use and total mobilized transport decreases when households participate in car sharing. The decrease is 20-30% in rural districts and even more in major towns. It very much depends on whether there is access to other forms of transport such as public transport and organized car pooling between home and work.

Table 1: Interest for car pooling depends on accepted journey time

Journey time	20 min or less	21-59 min	60-89 min	90 min or more	Total
Interested					
Yes	12	18	25	34	24
No	88	82	75	66	76

Transport offices

The transport office in Struer will in future coordinate new transport solutions, in the first instance only with respect to passenger transport, with freight transport being added in a few years time.

Apart from the car sharing station in Humlum, it is planned to establish a further three car sharing stations in northwest Jutland over the next three years, each with six to ten vehicles. The income from car sharing and other income-yielding activities will enable the project to gain complete independence of public subsidies or other economic support within three to four years. The goal is that the idea should spread to the rest of Denmark, as with the Energy and Environment offices.

In Germany, transport offices (mobility centres) have attained a central role in efforts to change attitudes and in economy campaigns in the transport area. The reduction in household energy consumption (electricity and heating) seen in Denmark over the last 20-30 years could be a good example for corresponding initiatives directed at traffic in the coming years.

The transport sector will have to take its share of the responsibility for reducing CO2 emissions. New ways of thinking and resultant change in behaviour are important steps in this development.

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