WORKING PAPER

Attitudes to the Stockholm trial

Public attitudes towards congestion charges before and during the Stockholm trial.

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Abstract

A full-scale congestion charging trial has been carried out in Stockholm the first seven months in 2006. The trial has been subject to an extensive assessment based on a series of measurements before and during the trial. The assessment included various effects on congestion, traffic, travel pattern, road safety, environmental impacts, shopping pattern, distribution traffic, business activities, regional economy, attitudes, user benefits etc.

This article analyses how the public attitudes towards congestion charges have changed during the trial, how the public attitudes differ between men and women, between different age groups and between different geographical areas in Stockholm. The analysis is based on telephone surveys carried out on four different occasions, three before the trial; autumn 2004, spring 2005, autumn 2005 and one during the trial in spring 2006. The results are compared with recent studies of road user charges in other European countries, especially Norwegian studies.

The results showed that as much as nearly 50 per cent of the respondents stated that they have changed their opinions towards congestion charges during the survey period. Most of them became more positive.

The share of positive attitudes towards the congestion trial was higher during the trial than before: women were more positive than men and younger persons were more positive than the older age groups. Car owners were more negative than those without cars and the attitudes differed depending on where the respondents live.

In conformity with the attitudes, the share of citizens in Stockholm who would vote yes to congestion charging in a referendum was higher during the trial than before. The outcome of the referendum on the continued implementation of congestion charging that was held in conjunction with the general election on 17 September 2006 was consisted with the attitude survey. A simple majority of the citizens in the city of Stockholm voted yes to congestion charging. It will be implemented in July, 2007.

Background

A full-scale trial with environmental/congestion charges and increased public transport was carried out in Stockholm in spring 2006. This trial has been subject to extensive assessment based on a series of measurements before and during the trial. The assessment included various effects on congestion, traffic, travel patterns, car and public transport travelling times, distribution traffic, business activities, regional economy, the environmental impact, road safety, and attitude surveys, among other things.

The Stockholm trial was intended to show whether environmental/congestion charges and improved public transport could contribute to a more efficient traffic system. The main objectives of the trial were to reduce congestion, improve accessibility and improve the environment. Subsidiary objectives of the trial were:

- Reduction of rush-hour traffic by 10 - 15 per cent to and from the inner city
- Increased accessibility in Stockholm traffic
- Reduced emissions of carbon dioxide, nitrous oxides and particles
- Inhabitants should experience a change in the city environment

A compilation of the assessments made show that the goals have been achieved (in med referensen Final report, the Stockholm trial" (2006), City of Stockholm

Stockholm has a well-defined inner-city zone with traffic congestion problems during the morning and evening rush hours. All of those who drive in, into or out of the city contribute to the amount of traffic. Even those who drive out of the city drive through part of the inner city on their way out and thus also contribute to the amount of traffic. The Stockholm trial means that all vehicles with certain exceptions had to pay for entering and leaving the city on weekdays between 6.30 am and 7.30 pm. Vehicles were registered automatically by gateways at all entrances and exits and it was possible to pay congestion tax retrospectively per passage or by direct debit.

This study shows how Stockholmers attitudes to congestion tax changed over time. Road charges/congestion charges are regarded, from a purely theoretical and socio-economic point of view, as one of the most efficient instruments to make use of the road infrastructure and public opinion is a key issue for decision-makers when introducing more or less permanent road charge solutions. The introduction of a new tax or charge is not normally welcomed with open arms by the public. It is thus politically complicated to choose a traffic solution which involves road charges. In those cities where road charges have been introduced, for instance, London and Oslo, opinion has become more positive after introduction. This article is intended to show how opinion swung in Stockholm. Differences in attitudes between different groups have also been examined.

About attitude surveys

This study is based on the surveys of knowledge and attitudes made by USK Stockholm Office of Research and Statistics in connection with the Stockholm trial. Inhabitants of the County of Stockholm aged between 18 and 74 have been asked on four occasions about their travel patterns, the traffic situation and their attitude to the congestion charge trial. Three of the four rounds of interviews took place before the trial, autumn 2004, spring 2005, autumn 2005, and the last round during the trial in spring 2006.

When assessing the congestion charge trial, the county was divided into eight areas[1], see Figure 1, and a random sample of the same number of individuals was made in each area in the knowledge and attitude surveys. Telephone numbers were added to the survey by Sifo who subsequently carried out 200 telephone interview per area, i.e. a total of 1,600 interviews. The response frequency in spring 2006 was 56.5 per cent of the net sample of 2,831 individuals. The response frequency varies between areas from 52 per cent to 62 per cent. In autumn 2004, a response frequency of 58 per cent was attained and in autumn 2005 59 per cent.[2]

The sample was stratified in eight different geographical areas in order to make it possible to find out how attitudes to the congestion charge trial vary depending on where in the county the respondent lived. Traffic forecasts made in connection with the design of the congestion charge trial showed that those living a long way from the inner city seldom passed a congestion charge boundary while those living closer did so more often.

[1] Southern inner city: City of Stockholm, Northern inner city: City of Stockholm, Southern regional centre: City of Stockholm, Northern regional centre: City of Stockholm, Solna and Sundbyberg, Inner northern region: Järfälla, Sollentuna, Täby, Danderyd and Lidingö, Outer northern region: Ekerö, Upplands Bro, Upplands Väsby, Sigtuna, Vallentuna, Österåker, Vaxholm and Norrtälje, Inner southern region: Nacka, Tyresö and Huddinge, Outer southern region: Värmdö, Haninge, Nynäshamn, Botkyrka, Salem, Södertälje and Nykvarn.

[2] More information on how the study was carried out is available in the final report ”Kunskapen om och attityder till Stockholmsförsöket”, USK (2006) (“Knowledge about and attitudes to the Stockholm trial”, in Swedish).

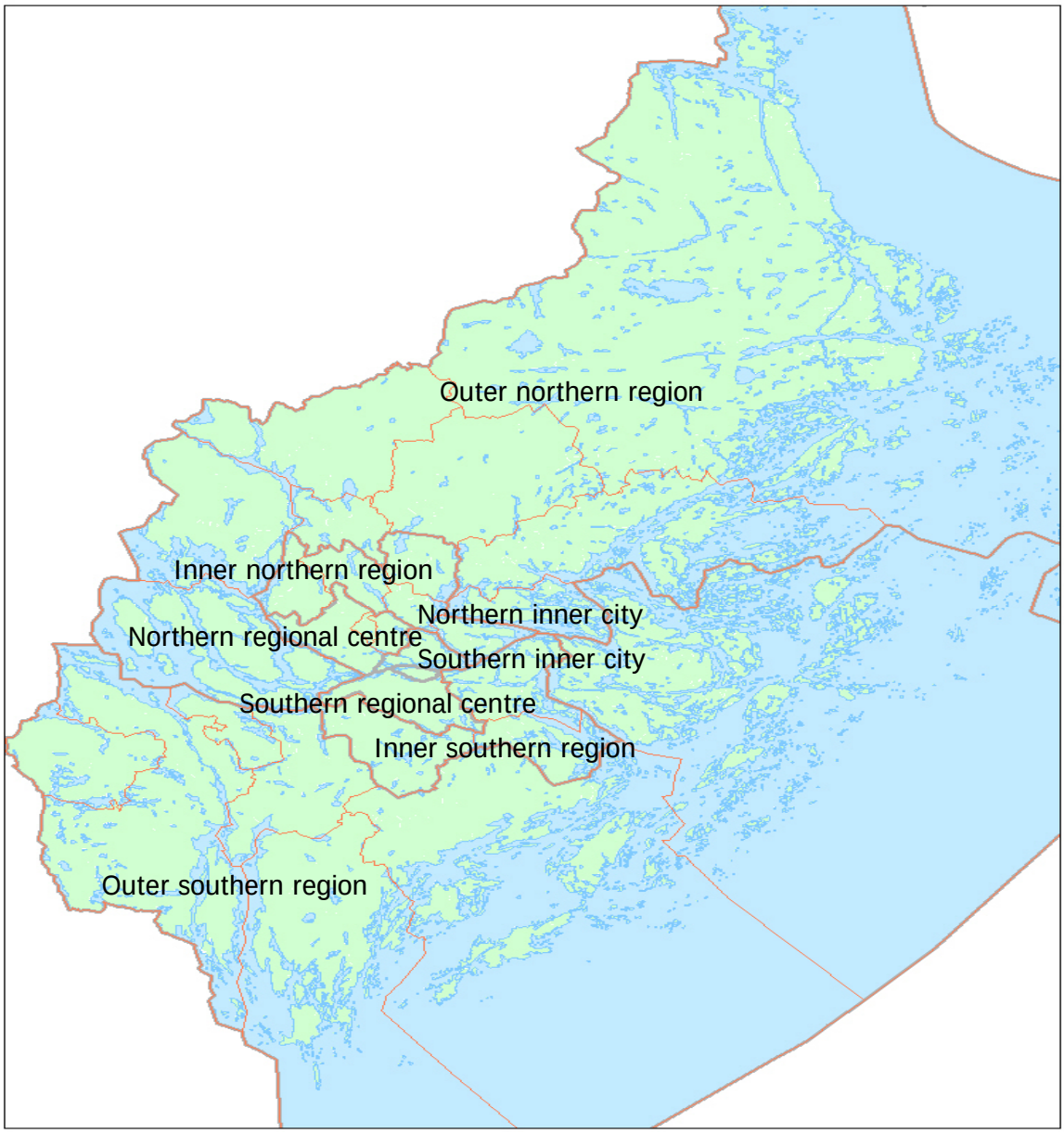

Figure 1: County of Stockholm divided into eight areas. Source: USK

Previous research about attitudes to congestion or road changes

Extensive research on attitudes to congestion or road charges

A lot of research exists on what determines how positive people are to congestion or road charges and what one should do to make more people become positive. Research findings (for instance, Jones (1994), Odeck & Bråthen (1997) and Schade & Schlag (2000)) show that people are more positive to congestion/road charges if they regard congestion as a problem that has to be solved, if congestion/road charges are presented as part of a larger package of measures, if congestion/road charges are presented as the only viable way and if politicians say at the same time what the money is to be used for.

Research on how attitudes to congestion/road charges change over time

However, there is relatively little research on what happens with attitudes over time. Most research articles over several periods of time come from Norway, which is due to Norway having a long tradition of road charges. Several Norwegian studies have shown how attitudes to road charges in Bergen, Trondheim and Oslo have changed after being introduced.

The figure below shows the result from user surveys one year and one year after the introduction of road charges in Bergen, Oslo and Trondheim (Odeck & Bråthen 2002). The bars show how the negative attitudes changed after road charges were introduced. A year after introduction, the proportion of those negative had decreased from 54 to 34 per cent in Bergen, from 70 to 64 per cent in Oslo and from 72 to 48 per cent in Trondheim. Some comments made by Odeck & Bråthen on the results to explain the spread between the cities is that road charges in Bergen were considered to be cheap and became popular for that reason. In Trondheim, a campaign was launched in conjunction with the introduction of charges that informed that road charges were intended to finance the infrastructure in the city. In Oslo, however, road charges were relatively expensive and their introduction was not accompanied by any campaign or introduction on what road charges were to be used for. It can be added that road charges were introduced at different times, in Bergen in 1986, in Oslo in 1990 and in Trondheim in 1992.

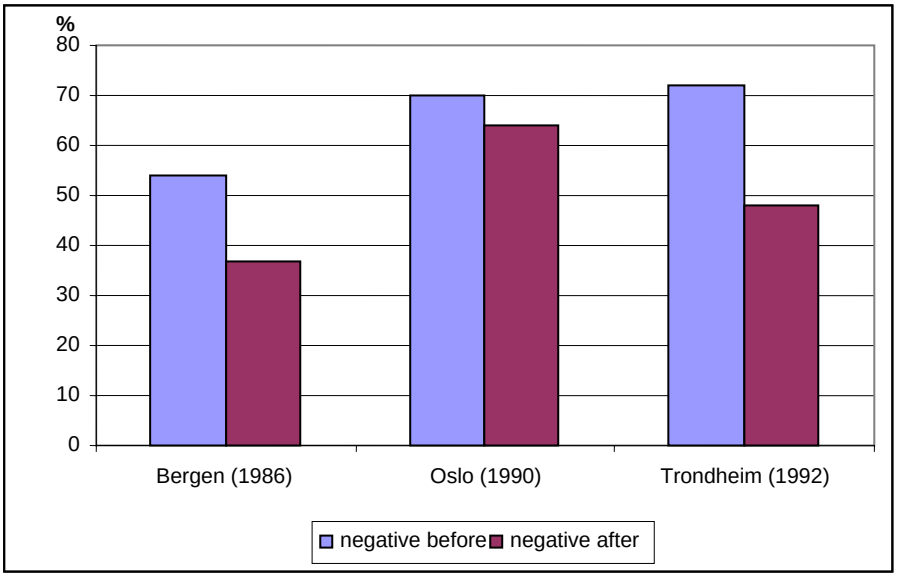

Figure: X: Users' attitudes before and after the introduction of road charges in Bergen, Oslo and Trondheim. Source: Odeck & Bråthen (2002)

In Oslo, attitude surveys on road charges were carried out between 1989 and 1995. The time series is based on annual telephone interviews with inhabitants in greater Oslo, see figure below. (Odeck & Bråthen 1997). In 1989, the year before the road charges were introduced, 37 per cent very negative, 28 per cent quite negative, 22 per cent quite positive and seven per cent very positive. Directly after introduction, the proportion of very negative had fallen to 28 per cent while those who were quite positive had increased to 28 per cent. In 1995, the proportion of very negative had decreased to 18 per cent while those who were quite positive had increased to 33 per cent. Broken down into negative and positive, the trend is shown in the figure below. Overall, the proportion of negative was 65 per cent in 1989 which then decreased

to 55 per cent negative in 1995. According to Odeck & Bråthen (1997), men were somewhat more positive to road charges in Oslo than women.

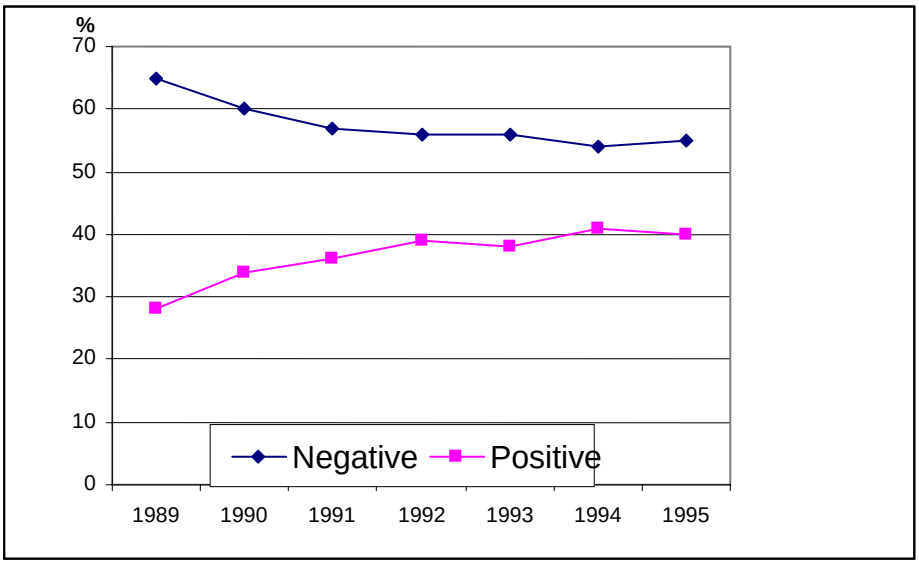

Figure X: Attitudes to road charges in Oslo. Source: Odeck & Bråthen (1997)

Kjerkreit & Odeck (2005) have compared attitudes to road charges in five different sections of road with road charges. In two cases, road charges had just been introduced, in two cases they had recently been removed and road improvements were in process and in one case road charges were just about to be introduced. Attitudes to road charges were most negative in the case where the road charge was about to be introduced (89 per cent negative), followed by the two case where road charges had just been introduced (81 and 86 per cent negative respectively) while road users in the recently ended road charge projects were least negative (68 and 26[3] per cent negative respectively). According to Kjerkreit and Odeck, the difference in attitudes is explained by the users having seen the result and the benefits of road charges in the cases where they have been removed, while this is not the case when road charges have just been introduced or are just about to be. Kjerkreit & Odeck have also looked at the reasons for the negative and positive attitudes. The foremost reason for a negative attitude was the statement that "we already pay too much tax" (75 per cent) while the foremost reason for a positive attitude was that road charges finance a better road network (72 per cent) and that the users pay (21 per cent). Kjerkreit & Odeck did not find any difference between women's and men's attitudes although younger people and people with lower incomes are more negative than other groups.

In Edinburgh and the surrounding area, an extensive public survey took place between 1999 and 2003 on citizens' attitudes to the introduction of road charges in the city. This questionnaire contained three alternative designs of road charges, a single toll ring around the city, a double ring and an alternative without road charges. Finally in 2005, a postal referendum was held on the introduction of road charges in Edinburgh. As shown in the figure below, the proportion of those positive to the introduction of road charges fell while the proportion of

[3] The question was not worded in the same way as in the other cases. The question here was whether the respondent considered that the road charge was useful or not, which has been interpreted as being positive or negative to the road charge.

those negative increased as the introduction of charges approached. Since the referendum entailed a compact opposition to the introduction of charges, the project was abandoned. (Gaunt, Rye och Allen (2007) and Schade, Seidel and Schlag (2006)).

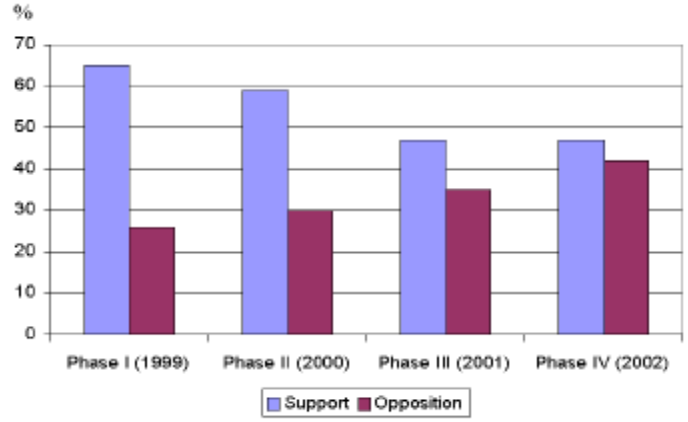

Figure X: Inhabitants' attitude to road charges in Edinburgh. Source: Schade, Seidel and Schlag (2006)

Gaunt, Rye and Allen (2007) subsequently sent a questionnaire to a random sample to shed light on inhabitants' travelling patterns, social factors and demography and how this can explain how they voted. It was seen that it was mainly car owners and passengers who had voted but that those who travelled by public transport were also negative to the introduction of road charges.

Some explanatory factors for changed attitudes

Schade, Seidel and Schlag (2006) note, in their comparative study of attitudes to road charges in different European cities within the EU projects CUPIDO and PROGRESS, that attitudes are lowest just before the introduction of road charges. This also applies outside the transport sector. Schade, Seidel and Schlag (2006) draw parallels with the introduction of a single European currency and the expansion of the EU where the opposition was greatest just before these took place. They explain this with an "approach-avoidance conflict" where a change leads to both expectations and apprehensions and therefore leads to ambivalent attitudes. The trend is for the disadvantages to be regarded as increasingly great the closer to introduction one comes, which means that opposition to a change is greatest just before introduction.

According to Schade & Seidel and Schlag (2006), it seems moreover that the greater the acceptance of road charges prior to introduction, the greater will be the reduction of acceptance in connection with introduction. They consider that this is due to not everyone being convinced supporters but that many easily change their opinion. Since many people do not know what consequences the implementation will have, they attempt to adjust their opinions to what others are saying. If there is a positive mood around road charges, many of those who have not made up their minds will become positive. These late supporters are not as convinced, however, and can therefore easily change their minds when more negative consequences appear. In cities where the general picture of road charges is negative and the proportion of those positive to road charges low, it is probable that those who are positive to road charges will continue to be positive even if negative consequences appear.

Schade & Baum (2007) make an empirical experiment where they show that people are more positive to road charges if they are convinced that these will be introduced unlike if they are

uncertain. This strategy entails making things which can't be prevented more attractive to more easily achieve acceptance. This also agrees with the theory of cognitive dissonance[4]. Schade & Baum consider that this is also the explanation why people are usually more positive to road charges when they are introduced than they were before. When a change has been introduced and there is no going back, people adjust to the change and their attitude becomes more positive.

Attitudes to the Stockholm trial

The proportion of those positive was higher during the trial than before

The two main questions in this study were how the interview respondents would vote in referendum[5] and their opinion on the decision to introduce the Stockholm trial[6]. See Figures 2 and 3. The proportion who thought that it was a good or quite good decision to carry out the Stockholm trial has been higher the whole time than the proportion who said that they intended to vote yes or would probably do so.

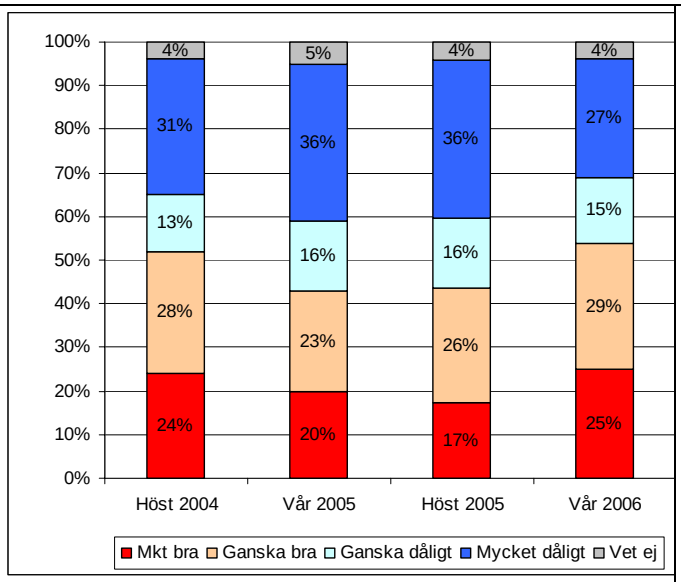

Figure 2: Do you think that it is a good or bad decision to carry out the Stockholm trial. County of Stockholm

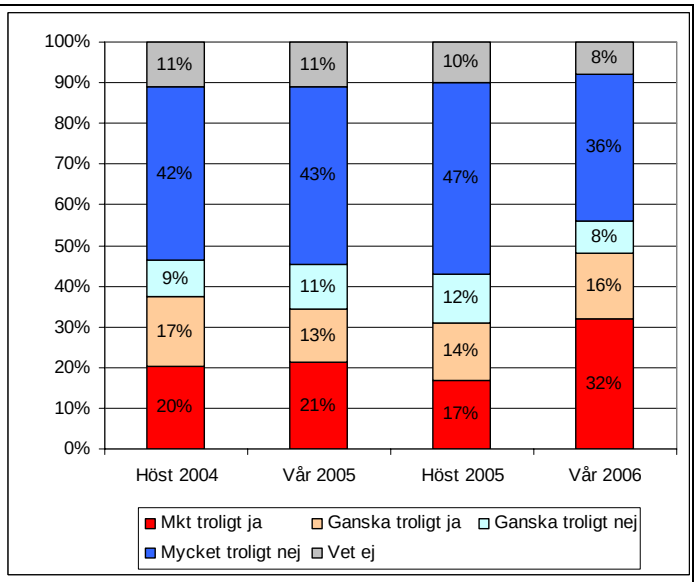

Figure 3: If you were to vote in a referendum today on the Stockholm trial. County of Stockholm

Very good/Quite good/Rather bad/Don't know

Autumn 2004/Spring 2005/Autumn 2005/Spring 2006

Very probably yes/Quite probably yes/Quite probably no/
Very probably no/Don't know.
Autumn 2004/Spring 2005/Autumn 2005/Spring 2006

[4] Cognitive dissonance entails that a person attempts to make their attitudes consistent with their actions. See, for instance, the theoretical section in Schade & Baum (2007).

[5] "If you were to vote in a referendum today, would you vote yes or no to the introduction of environmental charges/congestion charge permanently in Stockholm if the money was to go back to the region?"

[6] "Do you think it was a good or bad decision to carry out the Stockholm trial, i.e. the trial with environmental charges/congestion charge and increased public transport?"

The proportion that was positive or quite positive to the decision was highest during the actual trial, 54 per cent, followed by the first measurement made in autumn 2004, 52 per cent. The proportion of those positive fell to 43 per cent during 2005 as the trial approached. This also applies to the proportion that intended to vote yes or probably intended to vote yes although there the increase in the actual trial is greater. The proportion that intended to vote yes or probably intended to vote yes was lowest in autumn 2005 at 31 per cent.

Women more positive than men

The proportion of women who are positive to the trial is consistently higher than the proportion of men which is also the case for the question about voting intentions. When men were asked in spring 2006 during the trial, the proportion of men who intended to vote yes had increased sharply from 28 per cent in autumn 2005 to 48 per cent, and is almost as high as the proportion of women who intend to vote yes, 49 per cent.

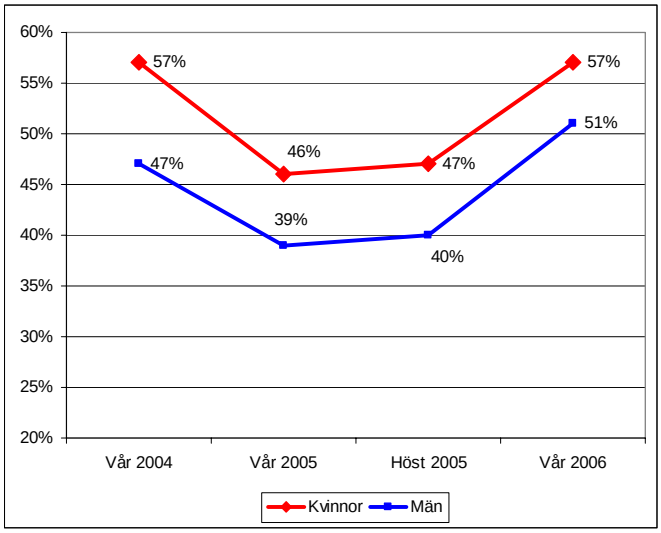

Figure 4: Do you think that it is a good or bad decision to carry out the Stockholm trial. County of Stockholm Women/men.

Autumn 2004/Spring 2005/Autumn 2005/Spring 2006

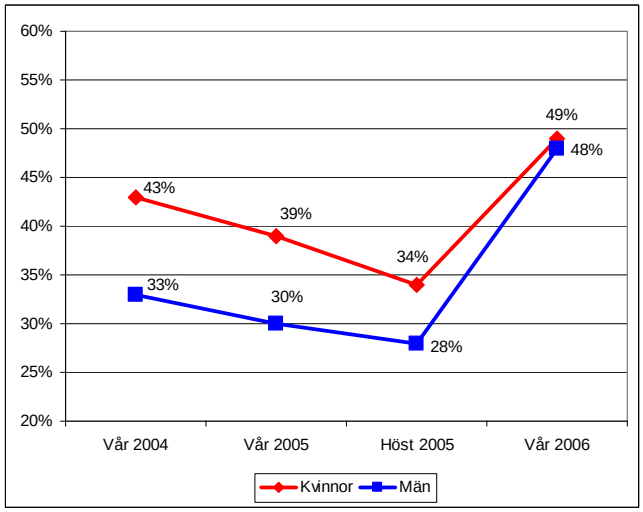

Figure 5: If you were to vote in a referendum today on the Stockholm trial. County of Stockholm Women/men.

Autumn 2004/Spring 2005/Autumn 2005/Spring 2006

Young people most positive

Those aged between 18 and 34 are most positive to the decision to carry out the Stockholm trial and they will also vote yes to the trial to a greater extent. Those aged over 64 were most negative to the trial before it started but were subsequently the group that changed its attitudes most. In spring 2006 during the trial, 57 per cent of those aged over 64 were positive to the trial and 50 per cent intended to vote yes.

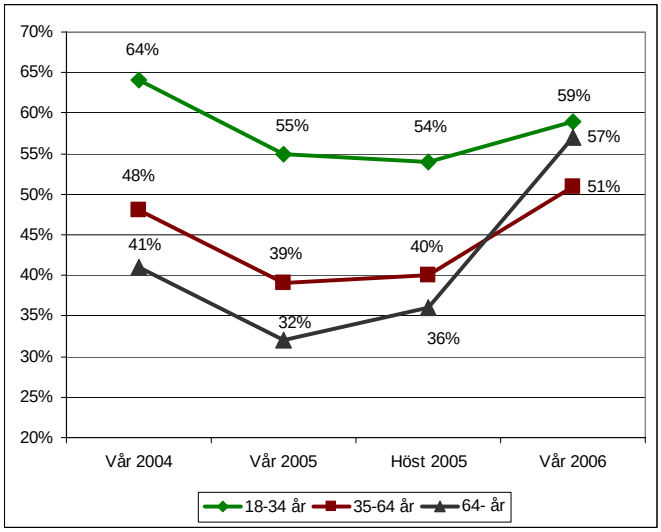

Figure 6: Do you think that it is a good or bad decision to carry out the Stockholm trial. County of Stockholm. By age group.

Autumn 2004/Spring 2005/Autumn 2005/Spring 2006

18-34/25-64/65 and above

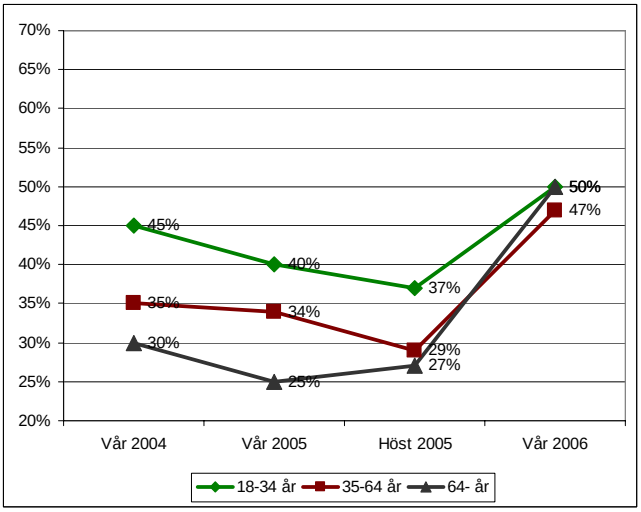

Figure 7: If you were to vote in a referendum today on the Stockholm trial. County of Stockholm. By age group.

Autumn 2004/Spring 2005/Autumn 2005/Spring 2006

18-34/25-64/65 and above

Those living in neighbouring municipalities outside Stockholm are most negative

Those living in neighbouring municipalities[7] outside of the City of Stockholm were most negative throughout the survey period. Those living in the inner city were most positive during 2005 as well when the other inhabitants of the county were more negative. During the trial itself, however, the proportion who intended to vote yes increased sharply from 43 to 52 per cent. Those living in the outer region are infrequently affected by the congestion charge since only a few of their journeys by car pass over a charge boundary. In all, seven per cent of all of journeys in the county of Stockholm per 24-hour period pass over a charge boundary[8].

[7] Järfälla, Sollentuna, Täby, Danderyd, Lidingö, Nacka, Tyresö and Huddinge. Solna and Sundbyberg are included in the area Rest of Stockholm.

[8] Trivector (2006)

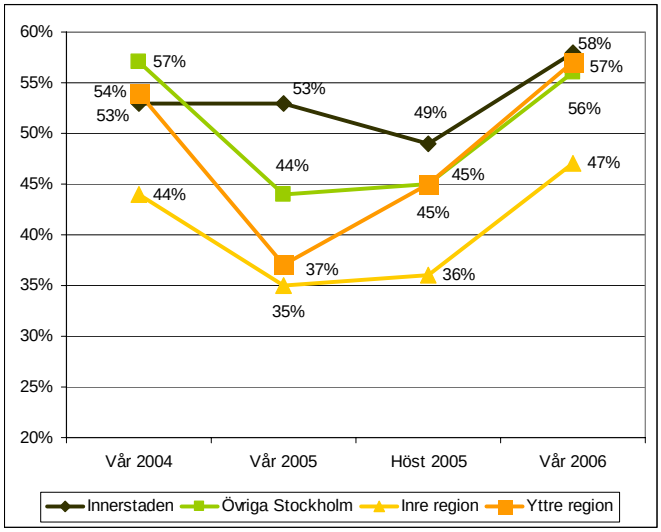

Figure 8: Do you think that it is a good or bad decision to carry out the Stockholm trial. County of Stockholm. By area.

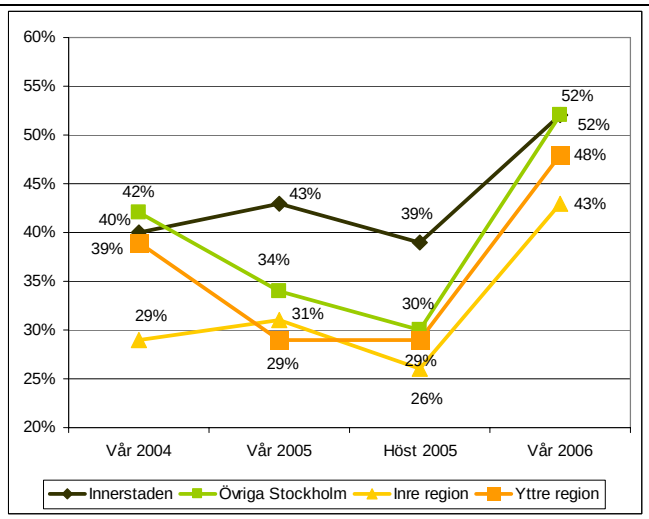

Figure 9: If you were to vote in a referendum today on the Stockholm trial. County of Stockholm. By area.

Autumn 2004/Spring 2005/Autumn 2005/Spring 2006
Inner City/Rest of Stockholm/Inner region/Outer region

Those who do not have access to a car are more positive than car owners

Most of those interviewed had access to a car, 81 per cent[9]. They are less positive to the Stockholm trial than those who do not have access to a car. Attitudes among those who have access to a car were more consistent between the years compared with those who do not have access to a car.

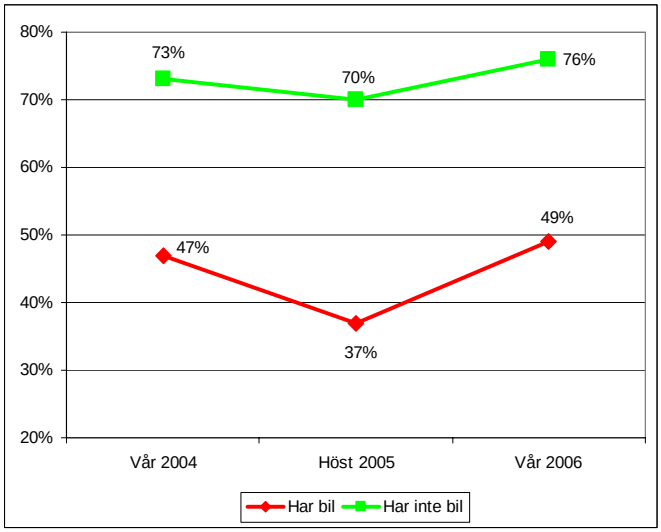

Figure 10: Do you think that it is a good or bad decision to carry out the Stockholm trial. County of Stockholm. Access to car.

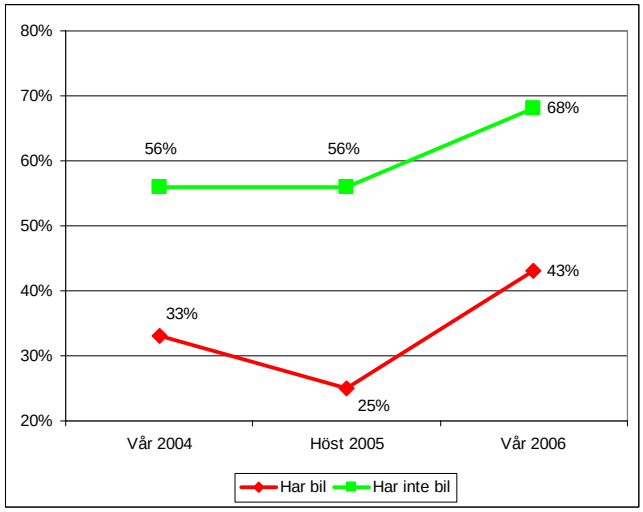

Figure 11: If you were to vote in a referendum today on the Stockholm trial. County of Stockholm. Access to car.

[9] USK (2006)

Those travelling by public transport most positive

Those travelling by public transport are most positive to the Stockholm trial and those travelling by car least positive. The definition of those travelling by public transport and those travelling by car is those who “mainly travel by public transport” and those “mainly travelling by car”. There is also a category of traveller who sometimes travels by car and sometimes travels by public transport. They are less contented with the attempt than those who only travel by public transport but more contented than those travelling by car. The swing in opinion is small for those travelling by public transport. A majority were positive to the trial throughout the whole of the survey period, 2004 to 2006, and have said that they will vote yes in a referendum. In the group of car travellers, around 40 per cent were positive to the trial at the time of the trial and would vote yes in a referendum.

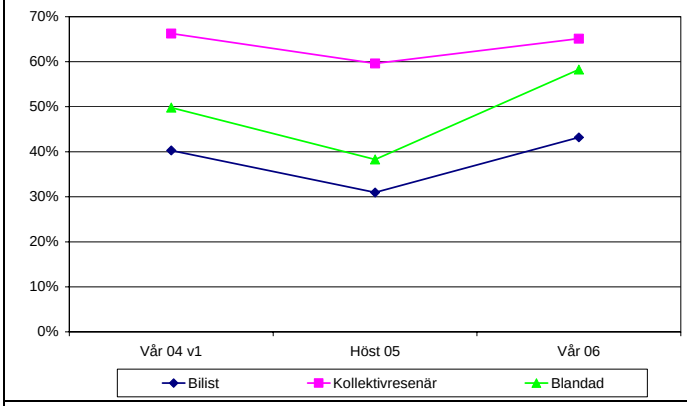

Figure 12: Do you think that it is a good or bad decision to carry out the Stockholm trial. County of Stockholm. By traveller group

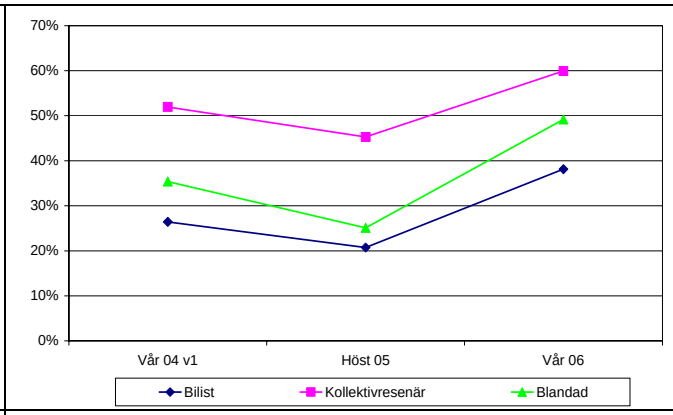

Figure 14: If you were to vote in a referendum today on the Stockholm trial. County of Stockholm. Per traveller group.

Car traveller/Public transport traveller/Mixed

Many people have changed their minds about congestion charges

Many interview subjects have changed their minds about the congestion charge during the trial itself according to the attitude survey in 2006. Only about half of those asked had not changed their opinion about the Stockholm trial after having experienced congestion charges. About a third had become more positive while 14–17 per cent of those asked had become more negative. Men had changed their opinion about the trial to a slightly greater extent than women. Those living in the city and in neighbouring municipalities outside the City of Stockholm[10] have been slightly more certain than those living in the rest of the City of Stockholm including Solna and Sundbyberg and in the outer region. Those aged between 35 and 64 were rather more certain than those who were younger and older.

[10] Järfälla, Sollentuna, Täby, Danderyd, Lidingö, Nacka, Tyresö and Huddinge.

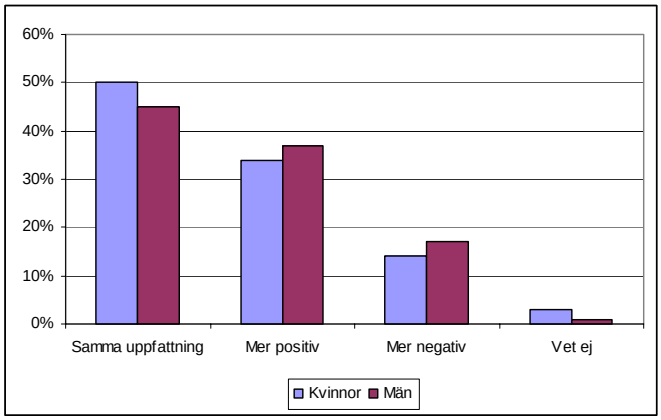

Figure 15: Do you have the same view or have you become more positive or more negative to congestion tax now compared with before its introduction? County of Stockholm. Women and men.

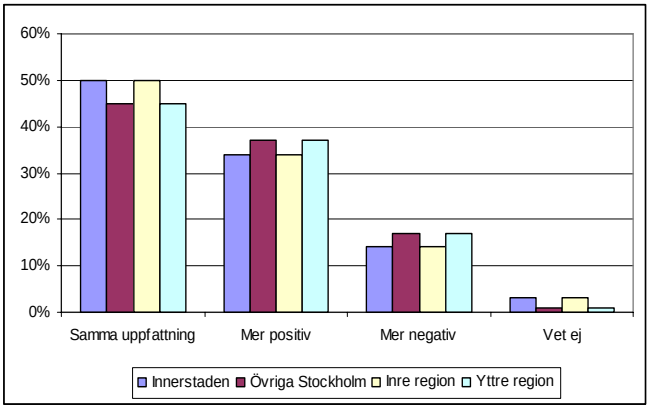

Figure 16: H Do you have the same view or have you become more positive or more negative to congestion tax now compared with before its introduction? County of Stockholm. By area.

Same view/More positive/More negative/Don't know
Women/Men

Inner City/Rest of Stockholm/Inner region/Outer region

Possible explanations for attitude swings in the Stockholm trial

In the Stockholm trial, opinion was most negative just before the trial started. This agrees well with Schade and Baum's (2007) theory that opinion is lowest just before the introduction of road charges.

Unlike the introduction of road charges in most other cities, the Stockholm trial also involves a substantial investment in public transport which can have led to a more positive attitude to the trial at the time of survey compared with if the trial had only involved a charge for car travellers.

In this study, the press coverage of the Stockholm trial has not been studied in detail although a brief review of the articles shows that the concerns about the trial were greatest before the trial started. There were most negative newspaper articles just before the trial started. This may very well have affected attitudes in the final measurement made in autumn 2005. Attitudes to the trial were clearly lower on this occasion than in previous surveys.

When the first attitude surveys were carried out, it was certainly the case that many interview respondents were not so well informed about the trial and had not thought about the consequences, both positive and negative, which the trial would have for them. When people do not have any well-founded opinions, it is easy to try to please the interviewer by answering positively.

Conclusions

The attitude surveys made in connection with the Stockholm trial have shown relatively large swings in opinion. To start with a minority was in favour of the congestion charge and during the trial opinion swung so much that a majority said that they were in favour. In the referendum as well, held at the same time as the 2006 general election, a simple majority, 51.3 per cent, of

the inhabitants in the city of Stockholm voted in favour of a permanent solution with congestion tax.

Attitudes differ a lot between different groups of inhabitants in the county of Stockholm. Most positive to the congestion charge are those travelling by public transport, those who do not have a car, those living in the inner city and younger people. Of course, these groups overlap to some extent. In common for them is that they have a weak connection to car driving in the inner city. Most positive are thus those who are not affected very much directly by the trial as car travellers. One can only speculate on what they think that they can gain from the congestion charge but other studies evaluating the Stockholm trial have shown that this concerns hopes for improved public transport, better environment in the inner city, opinions that it should cost more to travel by car etc.

An interesting observation is that the attitudes of the different groups approach one another after the introduction of the trial with the congestion charge. This means that the opinions of some groups have swung more than others. By way of example, we can compare the groups of younger and older citizens. At the time of the trial, both groups were equally positive, around 58 per cent. Before the trial only just over 30 per cent of the older had been positive compared with around 55 per cent of the younger.

The attitudes analysed for the Stockholm trial show that most citizens were more sceptical just before introduction than a long time before. This agrees with previous research that shows that the disadvantages become weightier the closer to introduction that one comes. This is explained as “approach-avoidance conflict” and could also be seen in the introduction of the single European currency.

Both attitude swings over time and the response to the direct question as to whether a person had changed opinion about the Stockholm trial after the introduction of the congestion charge show that citizens must experience it themselves before they know what they think about such a complex issue as road charges. Only just under half of those asked had the same opinion on the issue of congestion charges after having experienced congestion charges.

SOURCES

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IN REFERENSER FRÅN ENDNOTE