Mobility in Switzerland - Results of the 2000 Travel Behaviour Microcensus (Swiss National Travel Survey)

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Abstract

Every five years since 1974, statistical surveys have been carried out in Switzerland into the population's behaviour with regard to travel (Travel Behaviour Microcensus). This paper is the written version of a presentation to the 2nd Swiss Transport Conference in Ascona in March 2002, and offers a selection of the most significant findings of the latest survey, carried out in 2000. All the mobility indicators showed an upward tendency: daily distance travelled, travelling time, number of journeys and journey stages, and proportion of mobile persons. As regards the mode of transport selected, depending on how this is measured, the car (distance) and walking/cycling (number of stages) were in first place. Leisure is the only purpose of travel which has shown marked growth in recent years. There are considerable regional differences in the mode of transport chosen. For the first time, this microcensus also included details of long-distance journeys and plane trips. The travel behaviour figures and the attitudes to transport policy of those questioned allow us to determine the key issues to be tackled by any future transport policy: conurban traffic, leisure travel and walking/cycling.

Keywords

Microcensus – Swiss National Travel Survey – Travel Behaviour – 2nd Swiss Transport Research Conference – STRC 2002 – Monte Verità

1. Microcensus – a reliable tool for measuring passenger traffic since 1974

It may seem a truism, given the number of people on our roads and footpaths and in our trains and aircraft each day, but the amount of travel in Switzerland has genuinely increased. Every five years since 1974, the travel behaviour microcensus (MC) has provided reliable data on passenger traffic among the Swiss population. This data not only confirms what we all know, but also gives a more sophisticated and detailed picture, as well as presenting the facts in some sort of context.

This article sets out the main findings of the representative population survey conducted between 1 January 2000 and 31 January 2001 on behalf of the Swiss Federal Office for Spatial Development (ARE)[1], the Swiss Federal Statistical Office (SFSO) and their partners in the cantons and cities, and draws important policy conclusions. It ends with some thoughts about future surveys of passenger travel behaviour.

Representing an impressive 70.5% of the sample, nearly 30 000 individuals and households provided information about ownership and availability of vehicles and season tickets, number, distance and purpose of journeys undertaken each day, the modes of transport used, their views on transport policy and also, for the first time, the destinations and frequency of their long-distance journeys[2] and plane trips. The results can be classified according to various socio-economic coefficients in addition to time and geographical factors.[3]

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[1] The Bureau for Transport Studies (GVF), which was formerly responsible for the preparation and implementation of the microcensus along with the SFSO, was integrated into the newly-established ARE on 1 June 2000.

[2] Long-distance journeys include at least one night spent away from home.

[3] Background material on the methodology and results can be obtained from: Swiss Federal Office for Spatial Development, Swiss Federal Statistical Office, 2001.

2. Mobility indicators – sustained growth since 1984

Of people living in Switzerland, 90% undertake at least one journey per day (see Table 1). For every day of the week, and for all persons surveyed over the age of six, an average of 37 km is travelled per day within Switzerland, accounting for 84 minutes of travelling time and 3.6 journeys. If we add trips abroad, the daily amount of travel increases by almost 30%. This means that the population of Switzerland travels a total of around 340 million km per day.

Table 1 Daily travel in Switzerland in 2000

	Travel per person per day								
	Average distance per day (km)		Average travelling time* (min.)		Average number of journeys		Average number of journey stages		Proportion of mobile persons**
	excl. foreign travel	incl. foreign travel	excl. foreign travel	incl. foreign travel	excl. foreign travel	incl. foreign travel	excl. foreign travel	incl. foreign travel	
Average for all days	37.1	47.6	84.5	88.8	3.6	3.6	4.9	5.0	90%

* Travelling time is the time from the beginning of a journey until its destination is reached, excluding time spent waiting or changing to another mode of transport; previous surveys asked only for the time of the journey, which included waiting and changing time.

** Number of people travelling on a particular day.

If we examine the trend since 1984 we see that all the mobility indicators have recorded a significant increase (see Table 2). Particularly noticeable is the marked increase in time of the journey, whereas it had long been assumed that the "time budget" available for travel is a constant. More in-depth analysis could produce further insight here.

Table 2 Changes in mobility indicators since 1984*

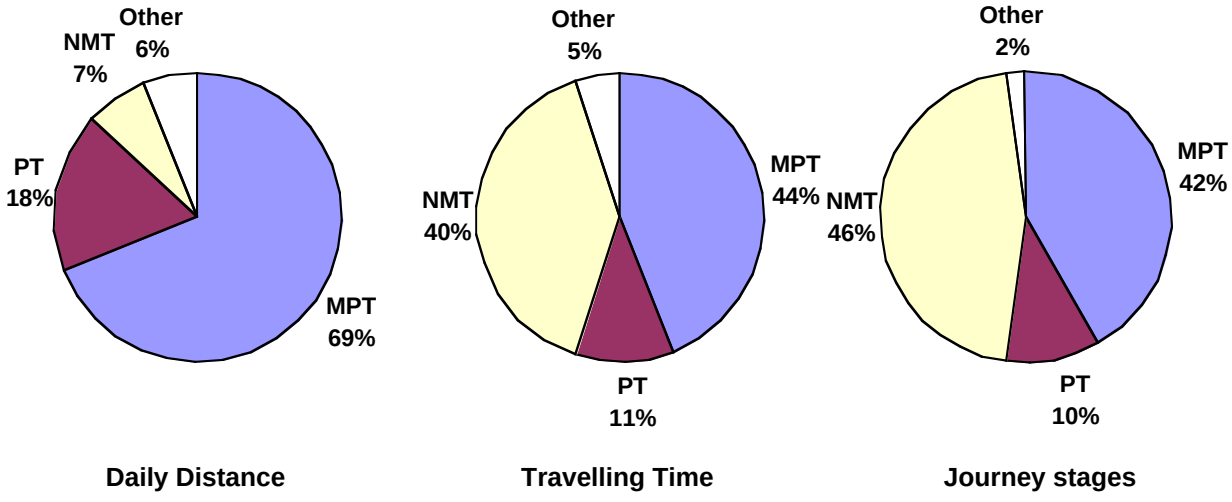
Year	Distance		Time of the journey		Proportion of mobile Persons	
	km	Index	Minutes	Index	%	Index
1984	29.4	100	69.6	100	83.5	100
1989	33.1	112.6	77.4	111.2	82.4	98.7
1994	34.0	115.6	83.7	120.3	88.2	105.6
2000	38.1	129.6	94.0	135.1	90.0	107.8

* The figures from the 1974 and 1979 surveys cannot be directly compared with subsequent microcensus results. It should also be noted that between 1989 and 1994 there was a change in method from a written questionnaire to a telephone survey. To allow a comparison of the data over time, only persons over the age of 10 have been taken into account in the 1994 and 2000 surveys.

3. Mode of transport chosen – motorised private transport and walking/cycling in first place

The split between modes of transport demonstrates the use of personal vehicles. Whereas in the past we concentrated only on the distance travelled, an examination of time spent travelling, or the number of journey stages, allows a more clearly defined analysis. In terms of distance, motorised private transport (MPT) clearly dominates, in particular the car, but with the two other approaches, non-motorised transport (NMT, mainly walking and cycling) takes on an equal significance (see Figure 1).

Figure 1 Modes of transport used in 2000



There is still considerable scope for increasing the proportion of people travelling by bicycle and on foot. A third of all car journeys are shorter than 3 km, and one in eight is shorter than 1 km. The importance of walking and cycling is also seen as a way of getting the traveller to the other modes of transport. Whereas 80% of all journeys use only one mode of transport, 10% of cases see walking combined with a car journey, and in 9% of cases walking is combined with public transport. Travellers are therefore dependent on well-developed interfaces.

The split between modes of transport has remained remarkably stable since 1984. Whilst the proportion using motorised private transport has risen by 1%, and that travelling on foot or by bicycle has increased by 0.9%, public transport recorded a decline of 0.8%. It can be concluded from this that despite efforts by politicians and transport companies at national level, there has been no overall shift towards public transport. This does not mean, however, that

public transport in areas where the service has been significantly improved (eg. the Zurich suburban rail network) has not gained customers and market share.

As regards travel by car, two statistics are of particular interest:

- *Annual mileage* for a single car amounted to, on average, 12 847 km in 1999, more than 1 000 km less than in 1983 (13 990 km). Yet in the same period, the number of cars has increased from 2.25 million to 3.47 million.
- The *average car occupancy* is 1.59 persons per car. The figure is lowest in the case of commuter journeys to work and schools/colleges (1.14 persons/car) and highest for leisure (1.92 persons/car) and accompanied journeys (2.27 persons/car).

4. Conditions governing the mode of transport chosen

The mode of transport chosen is heavily influenced by the existence or accessibility of vehicles, parking spaces and public transport season tickets:

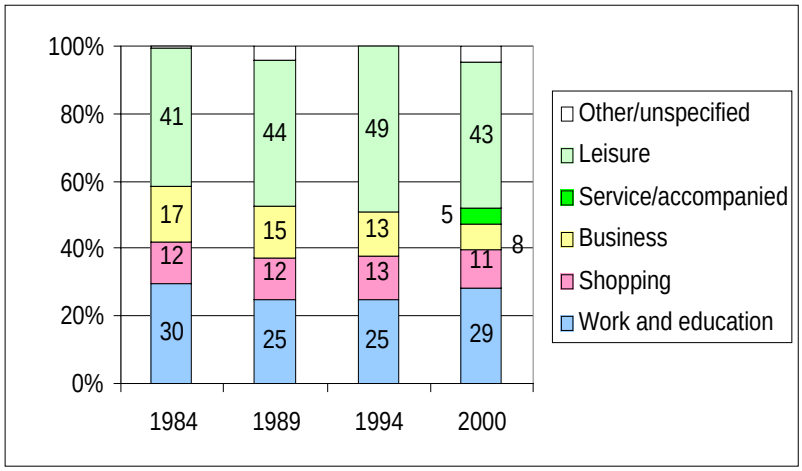
- *Vehicle ownership:* 80% of households have at least one car; 83% of men and 71% of women over the age of 18 who hold driving licences have permanent access to a car. In major cities and surrounding conurbations, the number of car-free households is higher (the highest being greater Basle, at 32%). It can also be seen that vehicle ownership increases with the size of the household, and that French/Italian-speaking Switzerland has more cars.
- *Parking spaces:* 13% of vehicle-owning households do not have their own parking space at home, and 39% of households with more than one car have too few parking spaces. These figures show that a considerable number of vehicles are parked on public land. Whilst 55% of all employed people do not have access to a parking space at work, 90% of those who do have access to such a space use their cars to travel to work.
- *Bicycles:* The bicycle is just as widespread as the car. Only 28% of all households have no bicycle, and 74% of men and 64% of women have permanent access to a bicycle. Bicycles are more widespread in German-speaking Switzerland than in the French-speaking and, especially, Italian-speaking areas, where 43% of households have no bicycle.
- *Public transport season tickets:* 35% of the population over the age of 16 have a half-fare rail pass, 6% have a general annual travel pass and 13% have another type of season ticket. But more than half of the population (52%) has no season ticket at all. Above-average numbers of women and people in German-speaking Switzerland hold season tickets.

5. Purposes of travel: leisure leads the field

The importance of the various purposes of travel is shown by the number of journeys per day, the distance travelled, and travelling time. Over the week as a whole, 40% of all journeys are for leisure purposes. These account for 44% of the distance travelled and 49% of daily travelling time (see Figure 2).[4]

On Sundays, leisure accounts for as much as 78% of all journeys. But leisure is responsible for the largest amount of traffic every day of the week. On working days, journeys to work and school/college come second, whilst on Saturdays it is journeys to the shops. Leisure travel is the only type of travel to have seen a marked proportionate increase since 1984.

Figure 2 Purpose of travel 1984 – 2000 (percentage of daily distance travelled)*



* For reasons of comparison, only persons over the age of 10 are taken into account, which explains the 1% difference from the figures mentioned in the text. Service and accompanied journeys were shown separately for the first time in 2000; in the previous surveys they were included with leisure travel.

The breakdown of activity types shows that going out to eat and drink is the biggest leisure activity, ahead of non-sporting outdoor pursuits (eg. walking) and visiting. Leisure journeys tend to be longer than the other types of journey, especially at the weekend. Leisure journeys undertaken by those aged under 18 or over 65 are shorter, whereas the working generation tends to travel longer distances.

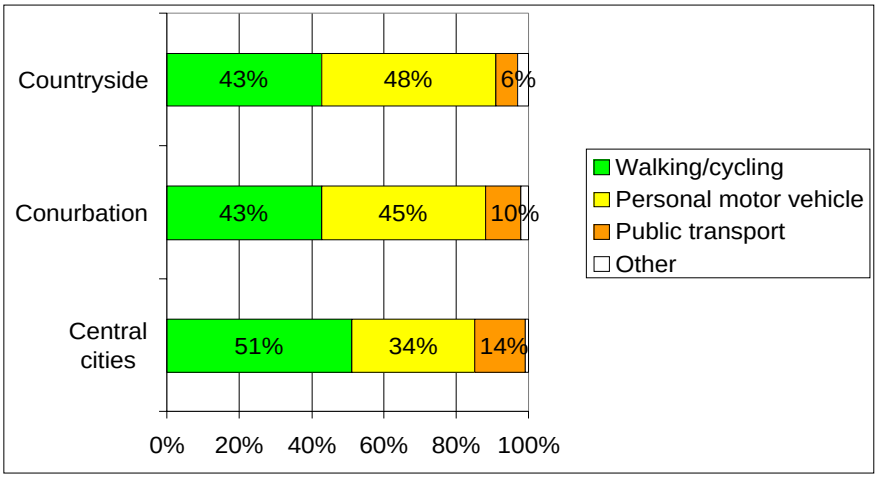
[4] It should be noted that these figures cover only the travel behaviour of the Swiss population within Switzerland. This contrasts with the findings of Meier 2000, who arrived at a figure of around 60% including journeys by Swiss people abroad and by foreign visitors to Switzerland.

6. Regional differences

We have already mentioned the differences between the various parts of the country in terms of the conditions for travel. These differences also affect the modes of transport used. Whereas an examination based on journey stages shows that walking and cycling account for 49% of journeys in German-speaking Switzerland, this figure is 38% in French-speaking Switzerland, and 37% in Italian-speaking Switzerland. On the other hand, motorised private transport predominates in non-German Switzerland (Italian-speaking: 56%; French-speaking: 50%). The proportion of public transport use in southern (Italian-speaking) Switzerland is particularly low (6%; French-speaking Switzerland: 10%; German-speaking Switzerland 11%).

Figure 3 shows the differences in the modal split between central cities, their surrounding conurbations and rural areas. The differences are due to spatial conditions allowing short journeys which can be undertaken on foot or by bicycle, better public transport in towns and conurban areas, and differences in the number of people with vehicles and season tickets.

Figure 3 Choice of transport (% of journey stages)



A comparison of the five largest conurbations in Switzerland (including the cities at their centre) and of medium-sized (more than 50 000 inhabitants) and small conurbations shows no major differences in mobility indicators. The purposes of travel are also remarkably similar from conurbation to conurbation. Whereas Geneva and Lausanne and the small and medium-sized conurbations have more cars, the large conurbations in German-speaking Switzerland have more public transport season tickets and bicycles. This is also reflected in the use of

different modes of transport. Residents of conurbations tend to walk (Berne in first place with 47.2% of all journey stages) or use private motor vehicles (top are Lausanne with 47.7% and small conurbations with 48.6%). Zurich and Berne have the highest proportion of public transport (16.4%), while in Basel the bicycle has above-average importance (8.5%). The low proportion of cycling in Zurich is striking. This can be explained, firstly, by the way the conurbation is spread out, and secondly by the high proportion of public transport use. The differences between the major conurbations allow us to draw conclusions about the potential for switching modes of transport.

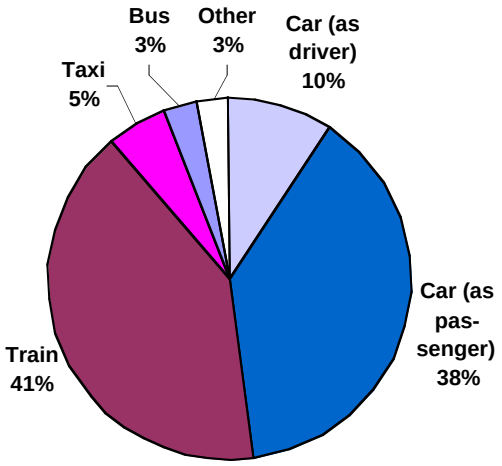
7. Long-distance journeys and plane trips

Long-distance journeys (journeys including at least one overnight stay) and plane trips were not included in the previous surveys, or were included only to an unsatisfactory extent. For the first time, we now have details on this subject which is so important to transport policy.

For long-distance journeys the car is the dominant mode of transport (25% as driver, 29% as passenger), followed by the plane (19%) and rail (16%). Whilst the proportion of people travelling by coach on everyday journeys is insignificant, it amounts to 6% for long-distance journeys. Destinations in Switzerland account for 44% of long-distance journeys, while 54% of trips are abroad (31% to neighbouring countries, 15% to other European countries, 8% to the rest of the world). In 2% of cases the journey itself involves an overnight stay.

In the twelve months prior to the survey, 36% of those questioned had travelled by air. If we extrapolate this to the population as a whole, we arrive at a figure of 0.87 flights or 5 285 km per person per year. New about these figures is that, for the first time, the official statistics record the total distance from the departure airport to the destination airport. 49% of destinations are in Western Europe, 12% each in the rest of Europe and in North America. It is also interesting that only 10% of all flights are for business, whereas 90% are private trips, normally for holidays. People like to be driven to the airport – by train in 41% of cases, and by car in 38% (see Figure 4).

Figure 4 Main mode of transport for travelling to the airport

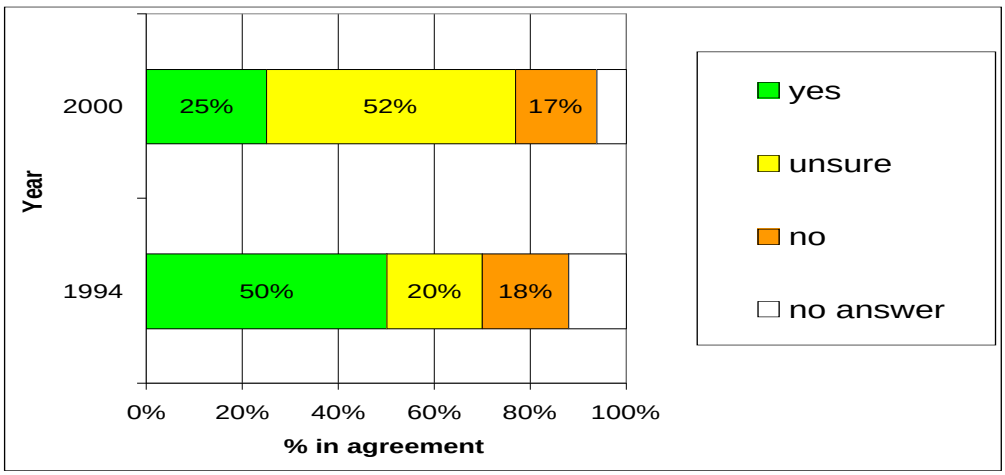


8. Attitudes to transport policy

The survey shows that the majority of the population in all parts of the country believes that current transport policy is not capable of solving all the prevailing transport problems. Nonetheless, the majority also believes that the steps already taken have contributed towards improving the environmental situation. Measures such as the promotion of public transport, the appeal for direct responsibility, and the tightening of technical standards, were widely accepted. Price-related measures such as raising the price of petrol are less popular.

The standard of the road network is seen as exceptionally good. Only just under 9% of those questioned do not believe that Switzerland has a very well-developed road network. Approval for further road building has changed considerably since the 1994 survey (see Figure 5). The proportion of people who are definitely against an expansion of the road network has fallen from 50% to 25%, whereas the number definitely in favour of new roads has remained stable. There has been a sharp increase in the number of people who are partly in favour of extending the roads (1994) or who are unsure (2000).

Figure 5 Further major road building is not necessary in the next few years



9. Implications for transport policy

The microcensus findings show that the volume of travel continues to grow. Overall in recent years, daily travelling time and the distance travelled have increased. Whilst it is true that we can identify a slight shift in favour of walking and cycling, and public transport in some areas, the importance of motorised private transport remains undiminished. In terms of the number of kilometres travelled, the most important form of passenger transport is still the car. There is still massive potential for change here, since more than a third of all car journeys are shorter than 3 km. The desire on the part of a bare majority of the population to cease further expansion of the road network also supports the exploitation of this potential.

If we look, on the other hand, at the number of journeys and journey stages, pedestrian traffic is as important as the car. This fact is being taken into account in the departmental guidelines for non-motorised traffic being prepared by the Federal Department of the Environment, Transport, Energy and Communications (UVEK). The big opportunity lies in establishing walking/cycling alongside public transport and motorised private transport as equally important pillars of long-term future land-based transport policy.

Public transport is important for longer journeys between population centres as well as for getting around within towns and conurbations. There remains virtually undisputed support amongst the majority of the population for priority treatment for public transport. This mode of transport could potentially be made more attractive, not least in terms of its cost, which is considered too high. One aim could be to increase the number of public transport season tickets as compared with the number of driving licence holders.

The data on plane trips, collected for the first time, shows the massive importance of this type of travel. Whilst plane trips could not be included in detail in all sections of this report for reasons of methodology, it is clear that long-term Swiss transport policy cannot stop at the national borders.

The microcensus confirms that urban and leisure travel must be central in future transport policy. As regards conurbations, there is a need to find and implement funding solutions for the necessary investment. In leisure travel, the focus must be on attractive alternatives to motorised private transport. The fact that the population is open to new solutions, whilst tending to oppose additional financial outlay, makes the situation even more challenging. No long-term transport policy can play the various modes of transport off against one another. Increasingly there is a need for a wide-ranging overall transport policy which meets society’s needs for mobility while at the same time reducing the impact on present and future generations. This is also the aim of the UVEK’s departmental strategy.

10. The future of the Travel Behaviour Microcensus

The 2000 survey showed that there is great interest in figures relating to passenger travel behaviour. The involvement of 10 cantons and regions in the survey suggests that they too have a need for high-quality transport data. In the past, the microcensus has taken place every five years. Each time – partly as a result of technical innovations and partly due to changing needs – there have been adjustments to the methods used and the content has been extended. The microcensus has reached the upper limit of its scope, i.e. number of questions, duration of interview. This very extensive survey requires high levels of input in terms of preparation and evaluation, so there are times when the workload on those involved is very heavy. In the near future, we will need to investigate how the next survey is to be conducted. One possibility would be to work with other partners in the cantons, universities and transport companies to conduct a permanent passenger travel survey. Whilst some of the questions would be regular if not permanent features, additional questions could be added as required. Regular questions would of course relate to the conditions for particular travel behaviours, and the core of the survey, travel behaviour itself. As and when required, aspects such as current opinion on policy, further details for particular regions, and information on special topics such as long-distance journeys and plane trips could then be added to the questionnaire. The advantages of such an approach would certainly be greater flexibility and topical relevance in the questions, data access data, evaluation and results.

In the near future we will need to draw full use from the 2000 data by means of special evaluations, assessing them and then planning the next survey. This will include intensive discussions with potential partners. One thing is certain: the Federal Office for Spatial Development will make every effort, along with the Swiss Federal Statistical Office, to continue producing up-to-date, high-quality data on passenger traffic.

11. Further reading

Bundesamt für Raumentwicklung, Bundesamt für Statistik (2001): Mobilität in der Schweiz, Ergebnisse des Mikrozensus 2000 zum Verkehrsverhalten. Berne/Neuchâtel. ISBN 3-905410-00-1 (German) 3-905410-01-X (French). Available from: BBL, Vertrieb Publikationen, 3003 Bern, Fax 031 325 50 58, www.bbl.admin.ch/bundespublikationen, Bestell-Nr.: 812.010 d(f). See www.are.admin.ch.

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