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Design Characteristics of National Travel Surveys
An International Comparison for ten Countries

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Abstract. In Germany a National Travel Survey (NTS) is planned for the year 2002 and was preceded by a pilot study in 2001. As part of this pilot study we examined the state of the practice for NTS in several countries by contacting relevant institutions and persons via the internet. A structured questionnaire was used for these consultations. The participants in nine countries provided the relevant information describing their NTS. We found that the core substance of the data gathered by the NTS is similar and that different additional aspects of travel may be covered in the surveys. However, the survey procedures and data collection instruments employed in the field work show a wide variety. Numerous survey design elements and combinations thereof are applied (mailback, CATI, personal interview). Institutional contexts seem to be important for the scope and continuity of the NTS.

Keywords: travel survey, mailback, CATI, personal interview

INTRODUCTION

Large-scale household travel surveys have frequently been used at the urban, regional and national level to collect information on the demographic characteristics and the travel behaviour of the population. For all three levels, significant sample sizes are collected to either represent regional and seasonal variations on a national scale or to be able to estimate origin-destination matrices for a specific geographical area. Generally, differences in survey design exist both between successive surveys for the same area and between surveys for different territories or nations. The essential design elements in which the differences occur are the sampling strategies, the instrument designs (e.g. questionnaire) and the retrieval methods.

The state of the art for concepts in household travel surveys, for sampling, weighting and dealing with non-response and for numerous further issues relevant for survey quality are documented and discussed in the proceedings of recent conferences (*1*, *2*). Additionally a perspective on future directions is given by Griffith et al. in their Millenium Paper on travel surveys (*3*) and an excellent reference for designing and implementing surveys in general is Dillmanns new book (*4*). However, to our knowledge there is very little documentation and comparison of the household travel surveys on a national scale other than the descriptions for the US, Britain and Switzerland in (*2*).

National Travel Surveys may be defined as large scale, multi purpose cross-section surveys financed and supervised by some national authority. They attempt to measure personal travel behaviour in conjunction with its assumed determinants, i.e. the socio-demographic characteristics, the regional inventories and the available means of transportation. Household travel surveys make use of mail, telephone or the interviewer to obtain information on the daily travel and other activities of a representative sample of the population. Typically, eligible persons in randomly selected households are asked to record in survey dairies all travel or activities conducted during a randomly assigned period, mostly one day (*3*).

The collected data is used to estimate population totals for example in car-ownership, the amount of travel, vehicle mileage, mode-use, etc., results can be found in (*5,6,7*). Also the data is used for modeling and numerous analysis of specific research questions, e.g. to estimate exposure values for safety analysis

(*8*) or to research issues of mobility in respect to gender, age and ethnicity (*9*). In Germany the NTS data is also one of the inputs used to estimate time series of national travel demand, which are then used to forecast future demand-patterns over a 15-years time horizon. Those forecasts are one of the basis to formulate national transportation and infrastructure policies.

All NTS are cross-section surveys by nature even though the field period may span a year or may be continuous, but no repeated measurements of the same units (i.e. households or persons) are attempted. Yet in countries where NTS were conducted more than once, repeated cross-section data is generated and may be used for time-series presentation (*5,10,11*). Problems of comparing repeated cross section measurements that arise from changes in the survey design and setting have been addressed by Kersten and Moning (*12*), Liss (*13*) and Kunert (*14*).

The German KONTIV Pilot Study

In Germany the instruments for a NTS were developed and first implemented in the seventies by Brög and his colleagues under the sponsorship of the Federal DOT (*15*). As the survey was planned to monitor mobility continuously it was given the German acronym KONTIV. KONTIV-surveys have been conducted in 1976, 1982 and 1989, the latter two surveys are briefly documented in the following paragraphs. As can be seen, there has been no NTS in Germany for more than a decade and none after the reunification of Germany. Because methodological developments in survey design have taken place it was decided to explore different options for the next NTS with a pilot study.

The DIW Berlin and infas-Institut für angewandte Sozialwissenschaft Bonn have been assigned by the Federal DOT to carry out this methodological study. In this pilot study we examine innovative methodological approaches to transportation survey design and we review experiences with NTS in other countries. The empirical part of the study evaluates different combinations of design-elements by testing the instruments and the implementation in a sample of 2 400 households in the early summer of 2001. The project is documented under the homepage of the Federal Department of Transportation http://www.bmvbw.de and under http://www.KONTIV2002.de. The pilot study results will be presented in a later paper.

This paper is a comparative documentation of the practices for NTS for the studied countries. It is not an evaluation of the effectiveness of the employed approaches. For that, more detail would be necessary whereas here not nearly all issues relevant for survey quality are raised (e.g. stratification, questionnaire design and length, etc.). We examine the state of practice for NTS in several countries by a consultation of the relevant institutions and persons via the internet using a structured questionnaire. We asked not for more detail than we felt could be communicated in this way and we focused on items that possibly could influence the survey design in Germany. The participants in nine countries did provide the relevant information describing their NTS. At the time of writing this paper we are not aware of more than twelve NTS complying to our broad definition. Ten NTS are described in this survey. We could obtain no response from the respective authorities Sweden and we became aware of the NTS of Finland to late to include it in this study.

In this paper we describe features and design elements for all included NTS. In the tables we present mostly the given entries by the respondents even though not all of them are fully compatible. The information in the tables is given for the most recent survey year if not otherwise noted. In the summary we point at the complexity of total survey design for NTS and we mention current developments of altering design features.

DESIGN ELEMENTS

Frequency and Continuity of the Surveys

As is listed in Table 1, in seven of the ten countries NTS were implemented by the mid seventies. In France (F) the first NTS was conducted as early as 1959, the US first ran an NTS in 1969 and by the mid seventies also Great Britain (GB), Switzerland (CH), Denmark (DK), Germany (D) and the Netherlands

(NL) had implemented a national survey. Austria (A) and Norway (N) came next with first surveys in 1983 and 1984 and in Belgium the first survey was conducted only recently in 1999.

The frequency and rhythm of collecting national travel data differs widely between the countries. In the Netherlands the NTS was implemented as a continuous effort from the very beginning in 1978, the NTS run continuously in GB since 1988 after three surveys in the seventies and one in 1985/86. The authorities in Denmark began conducting NTS with a five-year rhythm from 1975 onwards and continually since 1992. The first four NTS in the US were seven years apart but beginning in 1990 the cycle has been reduced to five years. Also with a five-year rhythm the information is collected in Switzerland (since 1974) and in Norway (since 1984). The first NTS of 1959 in France was followed by a survey about every seven years until 1981/82, the latest survey took place in 1993/94. In Germany the first NTS was implemented – among other things – to provide information to the coordinated Federal Infrastructure Planning Process and thus was scheduled for about every five years but has not been conducted since 1989. There is no regularity for the NTS-process in Austria and Belgium.

For eight of the ten countries the duration of the field for the current or latest survey design is given as one year (entry No. 4 in Table1). This means for the Netherlands and Denmark where the information is collected continuously that the data is tabulated for the calendar year. The survey process is also continuous in Great Britain but with a substantially smaller sample per year. Thus the data is computed and tabulated aggregated for three years. Only Austria reports a shorter survey period of ten weeks.

Issues of Sampling and Response

All countries report substantial net sample sizes, ranging from 3,000 households annually in the continuous NTS of Great Britain to the 63,000 households sampled in the Netherlands (entry No. 5 in Table 1). Note that Denmark and Norway report respectively 15,000 and 18,000 persons sampled as from each household only one person is interviewed. Most other countries attempt to collect the information for all household members given the age of eligibility, but in Switzerland only one or two persons are included resulting in a sample of 29,000 persons in 26,000 households. The 9,500 households surveyed in Belgium and the 21,000 in the US mark the range of the samples of the further NTS. The last German KONTIV of 1989 had a national sample of 21,000 households and an add-on sample for the state Northrhine-Westphalia of 6,000 households. In the United States of America (US) the national sample for the 1995 survey is supplemented by a further 21,000 households with the add-ons in two states and in two metropolitan areas.

The target populations to be surveyed by the NTS are defined identically in all countries: the civilian, non-institutionalized population living in private households regardless of citizenship. However, the respondents age for being eligible to participate is not identical. For six countries children from 6 years up are included in the survey, for the US this is 5 , for Denmark 10 and for Norway 13 years. Great Britain covers all ages in the survey and only Denmark reports an upper age limit (84 years).

The sampling procedure utilizes the information contained in a sampling frame that has to include the target population. For the NTS the reported sampling frames and procedures are random samples of household or person address registers (A, B, DK, GB, NL), random route contacts to households by an interviewer (D in 1989), random digit dialing of telephone numbers (CH, USA), a random sample of a phone number data base (N) and finally a census subsample (F). Some form of stratification of the sample – mostly geographical strata like regions or counties – may be employed.

Associated with all kinds of travel surveys are problems of non-response of parts of the sample, item non-response and underreporting of trips (*16, 17, 18, 19, 20, 21*). Particularly short, non-home-based trips appear to be underreported. It is also documented in the literature that different survey designs yield different return rates and non-response effects (*12, 22, 23, 24*). Although there seems to be a certain consistency in the structure of the non-response effects, their magnitude is unique to each survey depending on the survey design and the actual empirical setting.

Response rates indicate the extent to which the sample responds to the survey instrument. However, response rates may be calculated on different levels of the survey process using different definitions e.g. of what constitutes a valid response and what constitutes a completed household. In general the response rates

give the number of total responses as a percentage of the net sample size. The response rates reported in Table 1 are given on the household level if not stated otherwise and range from 45 % to 82 %. Stopher (*25*) reports that for household travel surveys response rates (depending on how they are calculated) often run below 40 % of all eligible households.

The significance of the non-response neccessitates an integrated additional study of its magnitude and impacts for five NTS and for two further countries it is being considered to have an integrated non-response survey in the future (entry No. 10 in Table1).

Characteristics of the Survey Process: Instruments Used and Retrieval Methods

The way in which the contact to the surveyed households is established and maintained as well as the instruments (material) presented to the informants are the important characteristics of the survey process. The household is contacted by mail, by an interviewer in person or by telephone. In each case some form of diary may be used to ask each individual to record all trips for a selected day or days. The types of diaries applied in surveying travel in general are constructed with an emphasis on memorizing travel, time-use or activities. A self administered questionnaire (SAQ), a home interview, or a telephone interview may collect the household and travel information. Finally the retrieval of the completed questionnaire again may be by mail, by an interviewer or the information in the questionnaire may be retrieved by telephone using the CATI-technique (computer assisted telephone interviewing). There are many other variations possible within those dimensions of survey design as instruments and retrieval methods may be combined in different ways, however, there is some preference for the one-day trip-based diary of varying formats (*3, 26, 27*).

There is no survey design in this study that relies solely on mail or telephone contact to the households to be recruited and interviewed (besides the KONTIV design before 1989 with distribution and retrieval of SAQs by mail). The face-to-face interview is still the method of choice for the NTS in France and Great Britain (Table 2). In France there is no diary for the assigned travel day, since a recall for the day before is asked for during the interview. However, a 7-day car diary for one of the cars of the household is used to collect information on driving. In the GB-NTS the interviewer records the household and person information at their homes via CAPI (computer assisted personal interviewing) and leaves with them a 7-day travel diary to be collected by the same interviewer. For the German KONTIV of 1989 and the NTS in Austria a SAQ for the household, person and travel facts was delivered and collected by an interviewer.

The NTS design in the Netherlands employs postal household and trip questionnaires and uses telephone contact to motivate the sample and for follow-up calls (see *28, 29*). A mixed mode approach is selected for the field work in the Belgian NTS: The basic instrument is a SAQ with postal delivery and retrieval for all households. For the households that can be reached by telephone all retrieved questionnaires are validated via telephone. The telephone is also used to gather information from the non-responding households.

A similar design in the basic elements is used for the NTS in the USA, in Denmark and in Norway: The households receive a short diary to record their travel by mail and the information is retrieved via CATI (the process is similar for the NTS in Sweden and Finland). Note, however, that different sampling strategies and contact sequences are employed in the three surveys. Even though in the USA sampling is done by RDD (list assisted) most households receive an advance letter of legitimisation and announcement for the survey. Also in Denmark a prior note advises the persons (addresses drawn from central personal register) that they will be contacted by telephone. In Norway the sample is drawn from a database of phone numbers and no mail precedes the first phone contact.

Except for France it is only in the Swiss NTS that no diary is used by the informants to record their daily travel. The interview is announced by an official letter and the information is retrieved via CATI usually for the day before the interview takes place.

Substance of the Collected Data

Generally, travel surveys gather information about the demographic, socioeconomic, and trip-making characteristics of individuals and households. For all NTS in this study some data about the persons and

households is collected, although it may differ in scope and detail (e.g. whether income or attitudes are covered in the interview). An important difference is whether the travel data is collect for all persons above the age of eligibility in the household or just for one person. The German KONTIV attempted to include all persons above the age of six years in the survey and in the US NTS the definition of a completed household requires that 50 % or more of the household adults be interviewed. On the other hand the NTS in Denmark and in Norway only survey one person per household. In the Swiss NTS one person is selected at random from households with up to three members and from households with four or more members two persons are selected.

The collected travel information is based on an identical definition of what constitutes a trip in all NTS (Table 2). In nine countries the travel data is collected for one day. Additionally the weekend days may be surveyed during the interviews in France and Norway. The British NTS collects travel facts for seven consecutive days. For all trips on the assigned day or period mode, purpose, distance and duration are to be reported in all NTS. In the GB-NTS walking trips of less than one mile are only included on the seventh day. When changing mode the trip is separated into stages. In nine of the NTS some information on the stages is collected (at least the modes used), in some surveys the duration and distance are also recorded.

Long-distance trips are rare events and may be carried out by different modes for other purposes than the everyday travel that is the focus of the NTS. Therefore in all except one NTS separate questions ask the informants to report their long distance journeys for a longer recall period (Table 2). This recall time extends from two weeks to three month and long trips are defined by a one-way distance from 50 km to 200 km or by an overnight stay outside the municipality of residence.

Another special segment of personal mobility are all forms of professional travelling and driving. This is relevant in respect to professional drivers (drivers of trucks, public transit, etc.), delivery services, salesman, and the like. For the NTS in six countries no separate questions for this segment are included in the survey (Table 2). Here the informants are expected to report their professional travelling within the normal diary format. In three countries the NTS pay special attention to travel as part of the work with varying degree of detail (B, DK, USA). In the British NTS professional driving is explicitly excluded from the survey.

Given by the limitations of the ability of children to answer questionnaires and by the definition of the age of eligibility, in most NTS the information on the travel of younger members of the households is not surveyed in the diary format. For five countries it is reported that this data is collected in some form by proxy, be it for a part of the sample or for certain of their trips (Table 2).

As most travel in industrialised countries is done by car and as the authorities sponsoring the NTS in many cases are responsible for the national highway system, separate questions on the amount of driving are included in most surveys. In eight of the ten countries an estimate of the annual mileage driven with the household vehicle and in seven countries odometer readings are collected.

Institutional Aspects and Dissemination of Results

In Table 3 the institutions sponsoring the National Travel Surveys are listed. Not surprisingly, always a national or federal authority is involved. In the US and Switzerland several federal administrations have a stake in the national survey. Also, the respective National Office for the Statistics is involved in some NTS. Not documented in the entries in the table are further interests that support the implementation and continuity of National Travel Surveys. Regional add-ons and the provision of regional data play a role at least in Belgium, the USA and Germany.

The last point of interest in our web-survey concerns modern forms of dissemination of the data collected. We assume that it is standard practice to publish tabulated results of the NTS along with some information on the methodology of the study. Four countries report some form of internet presence of the NTS while two report that this will be implemented soon. We distinguish three topics suitable for internet presentation: the methodology of the survey, the results in form of figures and tables and the data itself. Only in the US all three forms of information are provided, in Belgium, Great Britain and Switzerland this will be the case soon.

SUMMARY AND CONCLUSIONS

A total survey design is complex and involves more elements than were detailed in this overview. Aspects important for NTS that are missing here include the contact sequence, the rules that allow for proxy interviews and the distribution of the sampling days in the survey period. Also we did not touch on questions of how well the design accomplishes the stated tasks of the survey (e.g. achieve coverage, reduce non-response and measurement error, limit costs).

The main characteristic of a survey is the way in which the respondent is contacted and involved in the survey process. In the ten NTS studied here, we find that the classical way of social research – the personal interview – is only chosen in France and Great Britain. This is attributable to the substantial sample sizes and national coverage required for NTS. The interviewer delivers and retrieves the diaries (SAQ) in Austria and Germany (1989) while this is done by mail in the Netherlands. For the NTS in Belgium a mix of postal SAQ and CATI is reported. Denmark, Norway, Switzerland and the United States all use CATI retrieval but none without a prior mail contact to the informants. Although there are experiments and experiences with other diary formats in the research community (*30*), for NTS the standard trip oriented diary is prevalent. The diary may be reduced to a "memory jogger" for the CATI design.

There is thus a wide variety in the data collection instruments employed in the field work. However, the core substance of the data gathered is similar, namely the basic sociodemographic and travel information for a representative sample of the resident population for an assigned travel day (or several days) spread over a one year field period. Similar additional aspects of travel are covered in several surveys: long distance trips, travelling on the job and mileage of the household vehicles.

Four of the countries in this overview conduct their NTS more or less regularly, three even do so continuously. It is apparent that institutional continuity in terms of an office and staff dedicated to this effort - not only as a sponsor - are prerequisites for this regularity. Also diverse interests in the data, for example by different agencies or regions, may promote this quite expensive data collection effort.

All NTS have changed over time in survey design and content. Some changed dramatically, like the Swiss survey, which was a one-day time-budget study (1974, 1979), a one-day postal SAQ travel diary (1984, 1989) and became an all year CATI survey (1994, 2000). And change continues as currently, for one or more NTS the topics under debate include: increase sample size , widen and improve coverage, integrate non-response survey and adjustment, test the effects of incentives, improve origin-destination information including geocoding and geographic descriptors, implement continuous survey to avoid large set-up costs of intermittent ad-hoc survey, present results and data in the web. The process of change must find a balance between ensuring the continuity of the data (time series quality) and the modernization of the survey procedures and the information content. Also the NTS 2002 in Germany will be quite different from its predecessors, it employs a method mix of CATI and postal SAQ instruments while improving the accuracy and scope of the data gathered.

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TABLE 1: National Travel Surveys Summary – Timing and Sampling

NO	SURVEY INFORMATION	GERMANY 1982	GERMANY 1989	AUSTRIA	BELGIUM	DENMARK
1	MOST RECENT SURVEY YEAR	—	—	1995	12/1998-11/1999	2000
2	PRIOR SURVEY YEARS	1976	—	1983	—	1975, 1981, 1986 and 1992-99 every year (it is only 92-99 that is directly comparable)
3	NEXT SURVEY PLANNED	—	2001/2002	Non planned	—	2001
4	DURATION OF FIELD PERIOD	1 year	1 year	10 weeks in October-December	1 year	1 year
5	SAMPLE SIZE (EFFECTIVE - NET)	16,000 households 39,000 persons	21,000 households 42,000 persons	12,783 households	9,459 households	1999 onwards: 15,000 persons (earlier years around 12,000)
5a	TOTAL POPULATION (YEAR)		63.73 Mio (1990)	8.078 Mio (1998)	10.08 Mio (1994)	5.33 Mio (2000)
6	TARGET POPULATION	German speaking persons in private households (including foreign residents)		All persons living permanently in Austria	Persons, private households, residents in Belgium	All persons to be found in the cpr-register (central personal register)
7	RESPONDENT'S AGE FOR BEEING ELIGIBLE	From 10 years up	From 6 years up	Over 6 years, a subsample with all persons in household	From 6 years up	Persons aged 10-84
8	SAMPLING FRAME	1/3 Public Registers 2/3 Random-Route	Random-Route Sampling Starting from defined points	Random sampling, household data base	National Register	Public register
9	RESPONSE RATE	66%	64%	77%	45%	65-70%
10	INTEGRATED ADDITIONAL NON-RESPONSE SURVEY	No	Yes	Yes	Yes	Yes

TABLE 1: National Travel Surveys Summary – Timing and Sampling (Continued)

NO	SURVEY INFORMATION	FRANCE	GREAT BRITAIN	NETHERLANDS	NORWAY	SWITZERLAND	USA
1	MOST RECENT SURVEY YEAR	1993-94	Continuous from mid-1988. Small sample, so results aggregated over 3 years. Latest 1997/99	2000	1997/1998	2000 (Mikrozensus Verkehrsverhalten 2000)	1995
2	PRIOR SURVEY YEARS	1959, 1966-67, 1973-74, 1981-82	1985/86 similar; also earlier surveys in 1970s	1978 - 1999	1984/85, 1991/92	1974, 1979, 1984, 1989, 1994	1969, 1977, 1983, 1990
3	NEXT SURVEY PLANNED	Not before 2003	Continuous, but changes from 2002 in size and some other aspects. Same basic methodology.	2001	2001 The information further on will be for the next (2001)	2005 (the establishment of a permanent survey is in discussion)	2001
4	DURATION OF FIELD PERIOD	1 year	Continuous	1 year	1 year	13 months (1.01.00 – 31.01.01)	1 year
5	SAMPLE SIZE (EFFECTIVE – NET)	14.200 households	Currently 5,000 households sampled, with 3,000 responding per year. 7,000 persons responding	1978 – 1993: 10,000 households / 20,000 persons (>=12 yr) 1994: 35,000 households/80,000 persons 1995 – 1998: 60,000 households / 150,000 persons 1999 – 2000: 63,000 households / 136,000 persons 6 years or older/ 10,000 persons younger than 6 years	18,000 persons	26,000 households (planned till 31.01.01) 29,000 persons (planned till 31.01.01)	21,000 households-48,000 persons – in the national sample 42,000 households-95,300 persons in the national sample PLUS the add-ons (intesive interviewing in 2 states and 2 metro areas)
5a	TOTAL POPULATION (YEAR)	58.7 Mio (2000)	58.394 Mio (1994)	15.391 Mio (1994)	4.431 Mio (1998)	7.122 Mio (2000)	281.422 Mio (2000)

TABLE 1: National Travel Surveys Summary – Timing and Sampling (Continued)

NO	SURVEY INFORMATION	FRANCE	GREAT BRITAIN	NETHERLANDS	NORWAY	SWITZERLAND	USA
6	TARGET POPULATION	"Normal" households living in France : foreigners included, collective households (prisons, hospitals, abbeys, etc) excluded	Household population- incl. foreigners living in GB	Inhabitants of the Netherlands	Norwegian citizens	Permanent resident population in private households in Switzerland over 6 years able to speak a Swiss national language (German, French or Italian) registered in the national telephone register; foreigners living in Switzerland are included	The civilian, non-institutionalized population of the U.S. (includes all U.S. residents living in households- both citizens and non-citizens) – approximately 261.5 million persons
7	RESPONDENT'S AGE FOR BEEING ELIGIBLE	From 6 years up	All ages- parent completes child diaries (special diary for age up to 15 to be introduced from 2001)	1985 – 1993 : from 12 years up 1994 – 1998 : from 0 years up 1999 – 2000 : from 6 years up	From 13 years up	From 6 years up	From 5 years up
8	SAMPLING FRAME	Sample drawn in the 1990 census	Post Office address file (PAF)- small users	Adresses of Dutch households (Geographic Basic File)	Random sample of the population – 12,000 persons About 6,000 persons will represent a geographical strata for transport model reasons	Random sample of the national telephone register Methodical report available (in French)	List-assisted Random-Digit Dialing

TABLE 1: National Travel Surveys Summary – Timing and Sampling (Continued)

NO	SURVEY INFORMATION	FRANCE	GREAT BRITAIN	NETHERLANDS	NORWAY	SWITZERLAND	USA
9	RESPONSE RATE	82%	59%	70%	51%	approx. 75 % (households)	55.3% at the household level, 62% at person level, yielding a final rate of 34.3%
10	INTEGRATED ADDITIONAL NON-RESPONSE SURVEY	Not needed: unit non-response correction procedure by calibration on margins, after a post-stratification according to the main explanatory factors of non-response (size of conurbation, size of household, number of cars, age of the head of household)	No- planned for 2002 onwards	1985 – 2000 : No 2001 : possible	No	Yes	No

TABLE 2: National Travel Surveys Summary – Field Work, Instruments and Contents

NO	SURVEY INFORMATION	GERMANY 1982	GERMANY 1989	AUSTRIA	BELGIUM	DENMARK
1	SURVEY TYPE	Self-administered questionaire (SAQ) Distribution and retrieval by mail	Self-administered questionaire (SAQ) Questions delivered and collected by interviewer	Self- administered questionaire Questionaire delivered and collected by interviewer and a control sample by post and telephone reminder	Mixed : postal (SAQ) + telephone (CATI)	Telephone interviews conducted by Statistics Denmark every day of the year. Persons receive a prior note that they will be contacted.
2	USE OF DIARIES TO RECORD TRIPS	Yes	Yes	Yes	Yes	Yes
3	TRIP DEFINITION	A trip connects two activities or addresses	—	A trip connects two activities at different addresses	A trip connects two activities or addresses	A trip connects two activities at different addresses
4	RECALL PERIOD FOR ALL TRIPS	1 day	1 day	1 day	1 day	1 day
5	LONG TRIP DEFINTION	> 50 km	> 50 km	Over 80 km	> 200 km	>100 km or east-west Denmark (the last definition is soon to be deleted)
6	RECALL PERIOD FOR LONG DIST. TRIPS	3 month	3 month	2 weeks	4 weeks	1 month
7	FOR ALL TRIPS ON A GIVEN DAY OR PERIOD					
7.1	MODE	Yes	Yes	yes	Yes	Yes
7.2	PURPOSE	Yes	Yes	Yes	Yes	Yes
7.3	DISTANCE	Yes	Yes	Yes (except longdistance jouneys)	Yes	Yes
7.4	TIME	Yes	Yes	Yes	Yes	Yes

TABLE 2: National Travel Surveys Summary – Field Work, Instruments and Contents (Continued)

NO	SURVEY INFORMATION	GERMANY 1982	GERMANY 1989	AUSTRIA	BELGIUM	DENMARK
8	STAGES OF TRIPS (CHANGING MODE)	By allowing to check multiple modes per trip, without further details of duration or distance	—	—	Allowing to check multiple modes per trip with distances and time	Information on multiple modes per trip and data for mileage and duration for each mode, but no geographical information on each part of the trip
9	SEPERATE QUESTION FOR PERSONS THAT DRIVE OR TRAVEL AS PART OF THEIR JOB/ WORK	No	No	No	Yes, there is a special question about the trips for the job	Yes (but only for persons who has transportation duties as a major part of their job and thus drive many trips, eg. bus drivers, postmen etc.)
10	SEPERATE PROCEDURE OR STIMULATION TO RECORD TRIPS OF CHILDREN UNDER THE AGE OF ELIGIBILITY (SEE NO. 7 TABLE 1)	No	No	Yes, for a subsample by phone	No	No
11	SEPERATE QUESTION FOR MILEAGE OF HOUSEHOLD VEHICLES					
11.1	ANNUAL MILEAGE	No	No	Yes	Yes	Yes
11.2	ODOMETER READING	No	No	Yes	Yes	No

TABLE 2: National Travel Surveys Summary – Field Work, Instruments and Contents (Continued)

NO	SURVEY INFORMATION	FRANCE	GREAT BRITAIN	NETHERLANDS	NORWAY	SWITZERLAND	USA
1	SURVEY TYPE	Face to face interviews	Interviewer administered questionnaire followed by 7 day travel diary collected by interviewer	1978 – 1984 : face to face interview (2 or 3 interview days) 1985 – 1998 : Telephone : household questionaire / Postal: diaries 1985 – 2000 : Self-administered trip-questionaire / Distribution and retrieval by mail 1999 – 2000: New Kontiv Design: postal household- and trips questionaires / motivating by telephone on interviewday / allow follow ups by telephone	Telephone interview (CATI) – if required with SAQ for the long trips (>=100km)	CATI (Computer-aided telephone interview) Announcement of the interview by official letter	Telephone interview – Household is recruited – diary then sent for each person in the household – telephone retrival of diary information
2	USE OF DIARIES TO RECORD TRIPS	No, recall during the interview for the day before. For car use: a 7 day diary for one car	Yes	Yes	A simple diary is sent to the respondents before the telephone interview	No (special questions in the CATI in order not to forget any stage of the trips)	Yes
3	TRIP DEFINITION	A movement for a given purpose	We use the words trip and journey more or less interchangeably. A journey is a one way course of travel with a single purpose.	A trip connects to activities on addresses	Activities and addresses (at least for work trips)	A trip consists of stages with the same purpose	Every time you went from one address to another
4	RECALL PERIOD FOR ALL TRIPS	For daily mobility, the day before the interview (Monday to Friday) + the last week-end	No recall- 7 day diary completed day by day	1 day	1 day (up to 3 days)	1 day (usually the day before the interview)	1 day
5	LONG TRIP DEFINTION	>80 km craw-flight (about 100 km)	> 50 miles	—	>=100 km	Overnight stay not at home (outside the municipality of residence)	75 or more miles

TABLE 2: National Travel Surveys Summary – Field Work, Instruments and Contents (Continued)

NO	SURVEY INFORMATION	FRANCE	GREAT BRITAIN	NETHERLANDS	NORWAY	SWITZERLAND	USA
6	RECALL PERIOD FOR LONG DIST. TRIPS	3 months by interview + 3 months by SAQ	Up to 3 weeks	—	1 month	Unlimited (last trip); number of long distance trips within the last 3 months; Special questions for trips by plane	2 weeks
7	FOR ALL TRIPS ON A GIVEN DAY OR PERIOD						
7.1	MODE	Yes (from 4:00 am to 4:00 am next day)	Yes- except walks of less than 1 mile are only included on day 7	Yes	Yes	Yes Information for every stage of the trip	Yes
7.2	PURPOSE	Yes	Yes	Yes	Yes	Yes	Yes
7.3	DISTANCE	Yes	Yes	Yes	Yes	Yes	Yes
7.4	TIME	Yes	Yes	Yes	Yes	Yes	Yes
8	STAGES OF TRIPS (CHANGING MODE)	By allowing to check multiple modes per trip without further details of duration or distance	Yes- stage times and distances given also	Multiple modes per public transport trip, with further details of time or distance	All modes and time use including walking	Yes, as in No. 7	For each mode up to 4 : mode, start time, duration – See Segmented trip file
9	SEPERATE QUESTION FOR PERSONS THAT DRIVE OR TRAVEL AS PART OF THEIR JOB/ WORK	No	No- generally excluded from diary data	1985 – 1998 Yes 1999 – 2000 No	No	No (the CATI-interviewers can resume in this case the registration of stages)	Yes – vehicle type driven as part of work, estimate of miles driven for work on travel day, number of days a week work at this job, job title or occupation.

TABLE 2: National Travel Surveys Summary – Field Work, Instruments and Contents (Continued)

NO	SURVEY INFORMATION	FRANCE	GREAT BRITAIN	NETHERLANDS	NORWAY	SWITZERLAND	USA
10		No, except when they travel for long distance with another member of the household	Not needed	1985 – 1993 : No 1994 – 2000 : Yes	No (we are trying to get money for a separate survey of children 6-13 years	Proxy-interviews possible for people who are not able to answer to the questions.	Children under 5 are included in the roster of household members . If they were on a trip reported by another household member (age 5 or older), their presence is noted .
11	SEPERATE QUESTION FOR MILEAGE OF HOUSEHOLD VEHICLES						
11.1	ANNUAL MILEAGE	Yes	Yes	1985 – 1998 Yes, for car-owners	Yes	Yes (for all cars and motorcycles in the household)	Yes
11.2	ODOMETER READING	Yes	Yes	1999 – 2000 Yes	No	Yes (the interviewed persons are asked in the announcement letter to make a note of the odometer kilometrage)	Yes – 2 readings for each vehicle, several months apart

TABLE 3: National Travel Surveys Summary – Institutions and Data Dissemination

NO	SURVEY INFORMATION	GERMANY 1982	GERMANY 1989	AUSTRIA	BELGIUM	DENMARK
1	RESPONSIBLE AND FINANCING INSTITUTIONS	Federal Department of Transport	Federal Department of Transport	Federal Department of Science and Transportation	Federal Office for Scientific, Technical and Cultural Affairs, Region of Brussels, Region of Wallon	Department of Transportation
2	INTERNET PRESENTATION					
2.1	OF METHODOLOGY	No	No	No	Yes (coming soon)	Yes
2.2	OF RESULTS	No	No	No	Yes (coming soon)	Yes
2.3	OF DATA	No	No	No	Yes (coming soon)	No
2.4	URL				www.mobel.be	www.vd.dk (Danish Road Directorate)

TABLE 3: National Travel Surveys Summary – Institutions and Data Dissemination (Continued)

NO	SURVEY INFORMATION	FRANCE	GREAT BRITAIN	NETHERLANDS	NORWAY	SWITZERLAND	USA
1	RESPONSIBLE AND FINANCING INSTITUTIONS	National Institute for Transport and Safety Research	Department of the Environment, Transport and the Regions, Office for National Statistics	Ministry of Transport, Public Works and Watermanagement, Statistics Netherlands	Ministry of Transport and Communication, Institute of Transport Economics	Federal Office for Regional Development, Federal Office for Statistics, Office for Transport Studies	Federal Highway Administration, Bureau of Transportation Statistics, Federal Transit Administration, National Highway Traffic Safety Administration
2	INTERNET PRESENTATION						
2.1	OF METHODOLOGY	No	Yes- annual technical reports	No	Not planned	Some	Yes
2.2	OF RESULTS	No	Yes- annual bulletins	Yes, in 2001	Not planned	Yes	Yes
2.3	OF DATA	No	Soon- system in development	No	Not planned	Yes (planned end 2001)	Yes
2.4	URL	—	www.transtat.detr.gov.uk/personal/index.htm	www.cbs.nl	—	www.raumentwicklung.admin.ch (general) http://www.admin.ch/gvf/inhalte/grundlagen/personen_g.html (German)	http://www-cta.ornl.gov/npts http://www.bts.gov/nhts/