

Standard Report on Methods and Quality for National Travel Survey

This documentation applies to the reporting period:
2014

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1. Overview

The National Transport Survey (NTS) is carried out to gather information on people's day-to-day travel activities. It is used to compile statistical indicators that will help monitor the implementation of existing transport policy and will inform future transport initiatives.

The survey was first carried out in the fourth quarter of 2009. Further modules were carried out in the fourth quarter of 2012, 2013 and 2014. It is conducted as a module of the Quarterly National Household Survey (QNHS¹). Only travel within the island of Ireland, made by residents of the State, is included in the survey. The National Travel Survey collects information on work related travel for most occupations with the exception of the business related travel of professional drivers (e.g. bus and taxi drivers) and other occupations where travel is integral to the role (e.g. postal delivery workers).

¹The QNHS is a comprehensive nationwide survey of households. The primary purpose of the survey is to produce labour force statistics. It also covers topics of specific social interest in additional modules each quarter.

2. General information

2.1 Statistical Category

Primary Statistical Survey

2.2 Area of Activity

Transport Statistics

2.3 Organisational Unit Responsible, Persons to Contact

QNHS/SILC Analysis & Social Modules

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2.4 Objectives and purpose; history

The National Travel Survey was introduced to provide detailed official information on the domestic travel patterns of Irish residents. The survey was first carried out in 2009 following a request from the Department of Tourism, Transport and Sport (DTTAS). The 2009 questionnaire was an extensive one with 40 questions including a number on public transport availability. The questionnaire for the 2012, 2013 and 2014 surveys was decreased to 16 questions. This decrease was necessary to minimise the burden on respondents while remaining cognisant of the needs of data users. Some minor changes were made to questions and definitions for the 2013 and 2014 surveys in order to better meet the needs of the National Transport Authority (NTA), who are heavy users of the data.

2.5 Periodicity

The National Travel Survey was first carried out in 2009. It has been carried out on an annual basis since 2012. A consultation process on the future of the survey, involving CSO and the DTTAS, will take place in 2015. A decision regarding the future periodicity of the survey will be made following this consultation process.

2.6 Client

The survey is conducted to meet National requirements. A Eurostat Task Force on Passenger Mobility Statistics is in existence. However, it is not anticipated that there will be a European requirement to produce Passenger Mobility Statistics for the foreseeable future.

2.7 Users

- Government Departments and Agencies
- Economists
- Research institutions
- Individual researchers

2.8 Legal basis

Participation in the survey is voluntary for respondents as there is no legal basis for the survey.

3. Statistical concepts, methods

3.1 Subject of the statistics

The subject of the statistics is the travel behaviour of Irish people. Respondents are asked if they made any journeys on the reference day and if so to provide details of the journey(s).

3.2 Units of observation/collection units/units of presentation

The survey population is individuals aged over 18 living in private households. It excludes individuals living in institutions or communal accommodation and persons of no fixed abode. The collection units are households containing at least one individual for whom it is the main residence.

The main units of presentation are

- demographic variables such as Sex, Age and Geographical location
- journey characteristics such as duration and distance
- key choices in relation to journey such as mode and time of departure

3.3 Data sources

The information is collected from individuals in households.

3.4 Reporting unit/respondents

All usual residents, persons living regularly at the dwelling in question and sharing the main living accommodation, aged 18 and over are surveyed. There are no interviews by proxy.

3.5 Type of survey/Process

Sample survey.

3.6 Characteristics of the sample/process

3.6.1 Population and Sampling Frame

The reference population is all individuals living in private households in Ireland. All usual residents of the household are included. The sampling frame is all private households in Ireland. The population is derived from the results of the 2011 Census.

3.6.2 Sampling Design

There are three stages to the National Travel Survey sample selection. As a module of the QNHS the sample is selected by the Household Survey Collection Unit(HSCU).

Stage 1: The sample frame of households is clustered into blocks (small areas) with each block containing 60 occupied households on the night of the 2011 Census of Population. The sample frame is stratified using administrative county and population density. Probability Proportional to Size (PPS) sampling is used to select 1,300 blocks.

Stage 2: Simple Random Sampling (SRS) is used to select 20 households in each block. This ensures that each household in the sample frame has an equal probability of selection. Households are asked to take part in the survey for five consecutive quarters. Households participating in the first of these five quarters are referred to as wave one households, households in their second quarter are referred to as wave two and so on.

Stage 3: Households in waves 2-4 with at least one individual aged 18 or over are asked to participate in the National Travel Survey. Only individuals present in the household when the interview is carried out are included.

3.7 Survey technique/data transfer

QNHS interviewers visit selected households and ask residents to voluntarily participate in the QNHS. Residents in waves 2-4 who meet the conditions of the module (over 18 years of age) and are available to complete the module in person are asked to complete the module. Data are collected on encrypted laptop computers using Computer Assisted Personal Interviewing (CAPI). The data collected from households is transferred to head office using a secure encrypted data tunnel on a weekly basis.

3.8 Questionnaire

The National Travel Survey questionnaire consists of 16 questions. Four questions are general in nature. The remaining questions are repeated for every journey. There is one control question (for the number of journeys) and a number of polar questions. It should also be noted that some of the questions are only asked based on earlier responses so not all questions are asked of all respondents.

The questionnaire can be accessed at the following location

<http://www.cso.ie/en/media/csoie/qnhs/documents/QNHSnationaltravelsurveyQ42014.pdf>

3.9 Participation in the survey

Participation in the survey is voluntary.

3.10 Characteristics of the survey/Process and its results

Respondents to the survey are asked questions on their travel behaviour after they complete the core questions on the Quarterly National Household Survey (QNHS). Data are collected at respondent level and at journey level.

Among the variables collected at journey level are:

- journey distance and duration
- journey purpose
- modal choice

Aggregation is then carried out on the data in SAS and the following tables are reported on in the publication:

- Percentage of people who travelled and did not travel on the travel reference day²
- Percentage of people who travelled and did not travel on the reference day² by NUTS3 region³

- Average journey profile – Dublin versus all regions excluding Dublin
- Average journey profile by NUTS3 region
- Average journey profile by mode of travel
- Percentage distribution of journeys by mode of travel
- Percentage distribution of journeys by mode of travel and gender
- Percentage distribution of journeys by mode of travel and degree of urbanisation⁴
- Modal choice – Dublin versus all regions excluding Dublin
- Modal choice by NUTS3 region
- Modal choice by journey duration
- Modal choice by journey distance
- Distribution of journeys by travel group size
- Modal choice by travel group size
- Journey purpose by travel group size
- Percentage distribution of journeys by journey purpose
- Percentage distribution of journeys by time of departure
- Percentage distribution of journeys by journey duration
- Percentage distribution of journeys by journey distance
- Percentage distribution of journeys by mode of travel and gender
- Percentage distribution of journeys by mode of travel and degree of urbanisation
- Journey purpose by gender
- Journey purpose by age classification
- Journey purpose by degree of urbanization
- Journey purpose by distance
- Journey purpose by duration
- Journey purpose by mode – Dublin and all regions excluding Dublin
- Distribution of journeys by time of departure and gender
- Distribution of journeys by time of departure and degree of urbanisation
- Distribution of journeys by time of departure and age classification
- Journey duration: Dublin versus the all regions excluding Dublin
- Journey distance: Dublin versus all regions excluding Dublin
- Journey distance travelled by journey duration
- Journey duration by mode
- Reasons for not travelling by gender
- Reason for not travelling by degree of urbanisation

²The travel reference day is the day for which respondents provide information on their travel pattern. It is a maximum of three days prior to the day on which the interview was conducted to ensure that recall was not compromised.

³The regional classification in this release is based on the NUTS (Nomenclature of Territorial Units) classification used by Eurostat. The NUTS3 regions correspond to the eight Regional Authorities established under the Local Government Act, 1991 (Regional Authorities) (Establishment) Order, 1993, which came into operation on 1 January 1994.

⁴Degree of urbanisation classification is created from an aggregation of population density estimates derived from the Census of Population. The categories included in each aggregate are explained below:

- (1) Thinly populated area refers to rural areas
- (2) Intermediate density area refers to towns and suburbs
- (3) Densely populated area refers to cities, urban centres and urban areas

3.11 Classifications used

The classifications used can be subdivided into:

- Respondent level classifications – Age, sex, degree of urbanisation
- Journey level classifications – Time, distance, duration, mode purpose

3.12 Regional breakdown of results

A breakdown comparing Dublin with the rest of Ireland is provided for some variables

4. Production of the statistics, Data processing, Quality Assurance

4.1 Data capture

Data are collected in the field by a team of interviewers on encrypted laptops (CAPI). A BLAISE application is used to collect the data. The data are then transmitted to CSOHQ.

4.2 Coding

The majority of coding is undertaken in the field. Supplementary coding is done by the Statistician using SAS.

4.3 Data Editing

The datasets relating to the module are provided by the HSCU. These datasets have been edited in the field by the interviewers where required. Limited editing is necessary as answers to the questions are limited to a predefined list of options in the majority of cases. Edits to ensure that responses are consistent are carried out in SAS.

4.4 Imputation (for non-response or incomplete datasets)

No imputation is carried out for households who do not agree to complete the module. Limited ad-hoc imputation is carried out in the event that a variable is missing for a journey. In these cases, a nearest neighbour technique is used.

4.5 Grossing and Weighting

When the final dataset has been compiled the data are grossed to ensure that the distribution of persons in the sample is aligned to that of the population. Grossing factors are calculated using population estimates broken down by gender, region and age group. The National Travel Survey is a sub-sample of the overall QNHS sample so the grossing factors differ from those used in the preparation of the core QNHS.

4.6 Computation of Outputs, Estimation Methods Used

Outputs are compiled by aggregation of grossed data to produce the totals appearing in the release. The aggregations are done by key variables such as gender, age and degree of urbanisation. Aggregation by the various journey variables such as mode of travel, duration etc. are also compiled. The aggregations are calculated using SAS.

4.7 Other Quality Assurance Techniques Used

QNHS data are subject to audit in the field. As part of the training process for QNHS interviewers, a briefing on the National Travel Survey module is provided at co-ordinator and interviewer training sessions.

5. Quality

5.1 Relevance

This National Transport Survey is a source of key indicators on people's day-to-day travel activities. The information produced in the survey is used by policymakers to assess the effectiveness of transport spending and to facilitate evidence based policy making.

5.2 Accuracy and Reliability

5.2.1 Sampling effects, representativeness

As a sample survey the National Travel Survey is subject to sampling error. Precision estimates were not calculated as part of the survey process.

5.2.2 Non Sampling effects

Bias may exist due to the timing of the National Travel Survey. The National Travel Survey is carried out in Quarter 4. Data from other jurisdictions indicates that there can be significant seasonal variations in travel patterns. The National Travel Survey travel reference days cover the period spanning the Christmas and

New Year holiday. The period also encompasses days which are more likely to be subject to extreme weather conditions which invariably affect travel patterns.

Respondents to the National Travel Survey are asked to provide details of their travel on the travel reference day. In earlier editions of the survey, the travel reference day was generally the day prior to the interview. Variation in travel across the days of the week was observed in the 2012 National Travel Survey. The majority of QNHS interviews take place Monday-Thursday. This resulted in a greater than average number of responses for Sunday through Thursday and a lower than average number of responses for Friday and Saturday. An algorithm to ensure a more equal spread of travel reference days across the week was used in the 2013 survey to counteract any potential bias and continued in the 2014 survey also.

5.2.2.1 Quality of the data sources used

Not applicable.

5.2.2.2 Register Coverage

The sampling frame consists of the stock of private housing at the time of the 2011 census.

5.2.2.3 Non-response (unit and item)

There were 11,726 households were selected for the National Travel Survey. There was a response rate of 88.7% (10,396). No adjustment for was made for unit non response.

The level of item non response was minimal. Nearest neighbour imputation was used where necessary.

5.2.2.4 Measurement errors

Despite the provision of specific training on the module for QNHS supervisors and field staff, there remains some instances where measurement errors may occur. The decision to exclude proxy interviews was taken with a view to minimising measurement errors.

- Respondent effects generally arise when the data are not readily available to the respondents. In particular cognisance needs to be taken of the potential for the following issues:
 - difficulty in estimating journey distance, particularly for urban journeys
 - overestimation of the duration of journeys less than one kilometre
 - a tendency to underestimate the number of journeys. In 2013 a control question “How many journeys did you make?” was included and was included in the 2014 survey also. A comparison of this variable with the number of journeys for which details were provided showed that the number of journeys for which details are provided tends to be understated. A decision was made that the publication would not include a figure for the number of journeys.
- Comprehension errors where the respondent does not readily understand the question or a key variable such as journey or travel time may give rise to measurement errors.

5.2.2.5 Processing errors

The scope for processing errors is limited due to the fact that the values that can be keyed for variables are limited. In addition, a number of edits were included in the BLAISE application to prevent keying errors.

5.2.2.6 Model-related effects

Not Applicable

5.3 Timeliness and punctuality

5.3.1 Provisional results

Provisional results are not compiled.

5.3.2 Final results

Final results were published on July 31st t+7 months after the end of the reference period.

5.4 Coherence

The scope for coherence checks is limited due to the fact that there are limited auxiliary sources of information on travel behaviour. Comparisons to the National Transport Authority Household Travel Survey 2012 were made.

5.5. Comparability

To ensure comparability across different time periods, limited changes are made to the questionnaire. However, it is sometimes necessary to sacrifice some comparability improve the alignment of the survey with the needs of data users.

The Eurostat task force on Passenger Mobility Statistics is currently exploring comparability of Travel Surveys across member states. CSO attends this task force. The recommendations of the Task Force on harmonisation will be considered for future National Travel Surveys.

5.6 Accessibility and Clarity

5.6.1 Assistance to Users, Special Analyses

The National Travel Survey publication is available on the CSO website. The background notes on the publication provide some detail on the survey. Special analyses are accommodated where possible, on request.

Anonymised microdata will be made available to researchers via the Irish Social Science Data Archive in Q2 2014. This data will be accessible by applying directly to ISSDA.

5.6.2 Revisions

The data has not been revised.

5.6.3 Publications

5.6.3.1 Releases, Regular Publications

Most recent annual releases include:

<http://www.cso.ie/en/releasesandpublications/ep/p-nts/nationaltravelsurvey2014/> and
<http://www.cso.ie/en/releasesandpublications/ep/p-nts/nationaltravelsurvey2012and2013/>

5.6.4 Confidentiality

The confidentiality of the data provided to the CSO by respondents is guaranteed by law in accordance with the 1993 Statistics Act. The data cannot be accessed under the Freedom of Information Act and is not disclosed to any other Government Department or Agency. All CSO staff including field personnel are designated as “Officers of Statistics” on appointment, thereby making them liable to penalties under the Statistics Act if they divulge confidential information to individuals or bodies. The laptops on which the data were collected are encrypted and password protected. Results are published in a format that is sufficiently aggregated to prevent the identification of individuals. A microdata file will be compiled for researchers but this file will be anonymised as part of the compilation process.