

Catalogue no. 89-658-X  
ISBN 978-0-660-08572-2

## General Social Survey

### 2015 Time Use Survey Technical Note



Release date: June 1, 2017



Statistics  
Canada

Statistique  
Canada

Canada

---

## How to obtain more information

For information about this product or the wide range of services and data available from Statistics Canada, visit our website, [www.statcan.gc.ca](http://www.statcan.gc.ca).

You can also contact us by

email at [STATCAN.infostats-infostats.STATCAN@canada.ca](mailto:STATCAN.infostats-infostats.STATCAN@canada.ca)

telephone, from Monday to Friday, 8:30 a.m. to 4:30 p.m., at the following numbers:

- Statistical Information Service 1-800-263-1136
- National telecommunications device for the hearing impaired 1-800-363-7629
- Fax line 1-514-283-9350

### Depository Services Program

- Inquiries line 1-800-635-7943
- Fax line 1-800-565-7757

## Standards of service to the public

Statistics Canada is committed to serving its clients in a prompt, reliable and courteous manner. To this end, Statistics Canada has developed standards of service that its employees observe. To obtain a copy of these service standards, please contact Statistics Canada toll-free at 1-800-263-1136. The service standards are also published on [www.statcan.gc.ca](http://www.statcan.gc.ca) under “Contact us” > “Standards of service to the public.”

## Note of appreciation

Canada owes the success of its statistical system to a long-standing partnership between Statistics Canada, the citizens of Canada, its businesses, governments and other institutions. Accurate and timely statistical information could not be produced without their continued co-operation and goodwill.

## Standard table symbols

The following symbols are used in Statistics Canada publications:

- . not available for any reference period
- .. not available for a specific reference period
- ... not applicable
- 0 true zero or a value rounded to zero
- 0<sup>s</sup> value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded
- <sup>P</sup> preliminary
- <sup>r</sup> revised
- X suppressed to meet the confidentiality requirements of the *Statistics Act*
- <sup>E</sup> use with caution
- F too unreliable to be published
- \* significantly different from reference category ( $p < 0.05$ )

Published by authority of the Minister responsible for Statistics Canada

© Minister of Industry, 2017

All rights reserved. Use of this publication is governed by the Statistics Canada [Open Licence Agreement](#).

**An HTML version is also available.**

*Cette publication est aussi disponible en français.*

---

---

## Table of contents

<b>Executive summary</b> .....	<b>4</b>
<b>Introduction</b> .....	<b>4</b>
<b>Data collection</b> .....	<b>4</b>
<b>Response rates</b> .....	<b>5</b>
<b>Response rate comparison to other General Social Survey cycles</b> .....	<b>5</b>
<b>Response rate comparison to international Time Use Surveys</b> .....	<b>6</b>
<b>Minimizing errors and bias</b> .....	<b>7</b>
<b>Data validation</b> .....	<b>8</b>
<b>Fitness for use of 2015 Time Use Survey Data</b> .....	<b>8</b>

# 2015 Time Use Survey Technical Note

## Executive summary

Statistics Canada's General Social Survey on Time Use provides estimates of the average time Canadians spend per day on various activities, including unpaid household activities, and an indication of how these activities may contribute to their feelings of well-being and stress. Generally, data are available nationally and, for some variables, for the following regions: Atlantic, Quebec, Ontario, Prairies and British Columbia. The GSS Time Use Survey started in 1986 and has been repeated every five to six years; 2015 was the sixth year in which the survey was conducted.

The 2015 Time Use Survey experienced a lower response rate than the one observed in 2010. Internationally, a number of countries have experienced similar trends of lower response rates for surveys on time use in recent years.

Due to the lower response rate, Statistics Canada applied sound statistical practices to prepare the 2015 Time Use data for dissemination. Extensive validation and comparisons with distributions of variables collected in other surveys were conducted and an extra step was added to the survey weighting strategy. In addition, a cross-survey validation process was undertaken after the final weights were applied to ensure the quality of the information. Based on these statistical adjustments and techniques, Statistics Canada has confidence in the quality of the data disseminated from the 2015 Time Use Survey and assures the data is fit for use, particularly at the national level. However, data for smaller populations, certain provinces, and smaller geographic areas may be subject to higher sampling error and higher risks of nonresponse bias. Statistics Canada's practise is to produce quality indicators to demonstrate that estimates are fit for use.

## Introduction

The 2015 Time Use Survey (TUS) collects important information on paid work as well as nonmarket activities (unpaid work) such as childcare, household chores or maintenance, and volunteering. In addition, it collects data on sleep, commuting, time spent studying or doing homework and participation in leisure activities.

The TUS disseminates estimates of the average time Canadians spend per day on various activities, and provides an indication of how these activities may contribute to their feelings of well-being and stress. Generally, data are available nationally and, for some variables, for the following regions: Atlantic, Quebec, Ontario, Prairies and British Columbia.

This technical note provides information on the quality of the data from the 2015 Time Use Survey and the weighting and validation strategies used by Statistics Canada in order to assure data quality.

This paper also provides comparisons of the 2015 TUS response rate to response rates obtained in other cycles of the General Social Survey and in international time use surveys.

## Data collection

The 2015 Time Use Survey (TUS) was a voluntary survey that collected information using telephone interviews and self-response electronic questionnaires between April 7, 2015 and April 6, 2016. Respondents were asked to complete a 24-hour recall diary which consisted of the same five questions that had appeared in the 2010 TUS diary as well as two additional questions on use of technology and subjective well-being.

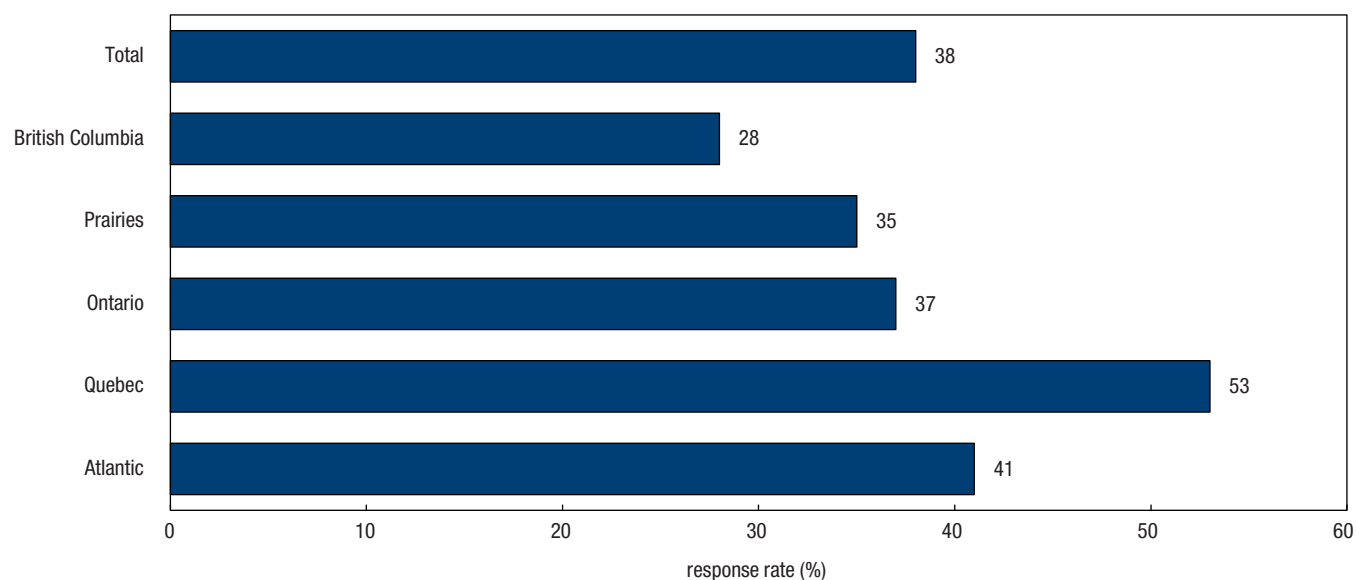
As in previous Time Use Surveys, the 2015 TUS had a pre-assigned reference day for each respondent where activities had to be reported over a 24-hour period. The information for that specific day had to be recorded in the questionnaire module within a maximum of 48 hours from the reference day. For example, respondents who were asked about their Monday activities had to be interviewed over the telephone on either the subsequent Tuesday or Wednesday. This meant that interviewer-respondent contact was limited to two of seven days of the week in order to record a completed response for the survey. Given this limitation, Statistics Canada put considerable effort into maximizing respondent participation and questionnaire completion.

The method of collection for the Canadian TUS is consistent with collection strategies used in other countries which also use a recall diary. This method of collection is, at present, deemed to be the most accurate and robust method of collecting information on time use, yet it also requires significant effort on the part of respondents. Furthermore, the fact that interviewers must collect information from respondents within a very short, specific, time period also imposes constraints on interviewers who often find it difficult to reach respondents on the pre-designated days. As such, both respondent burden and collection challenges mean that response rates on time use surveys tend to be lower than for other types of household surveys.

## Response rates

In 2015, the overall response rate for the Time Use Survey (TUS) was 38%, ranging from a high of 53% in Quebec to a low of 28% in British Columbia (Chart 1). At the national level, the final response rate for the TUS was 17 percentage points lower than the response rate achieved for the previous TUS in 2010 (55%).

**Chart 1**  
2015 Time Use Survey response rate by region



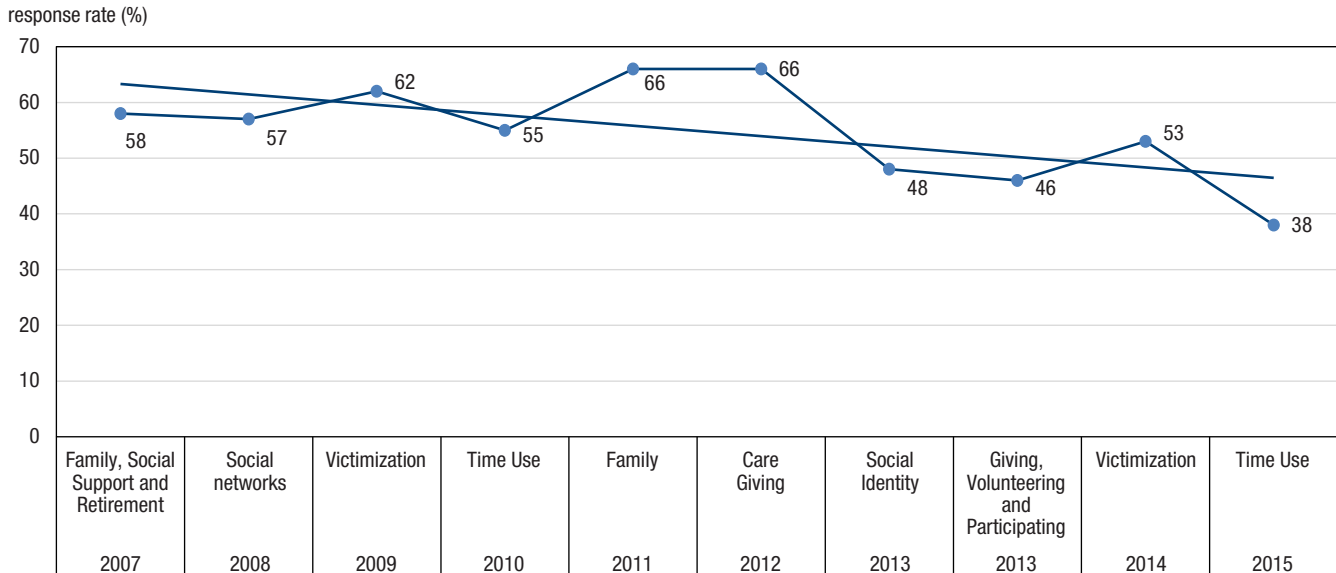
Source: Statistics Canada, 2015 General Social Survey.

In recent years, General Social Survey cycles, regardless of topic, have tended to have lower response rates in Western Canada. In addition to having the difficulty of completing a recall diary on designated reference days, progress reports for the 2015 Time Use Survey indicated that survey collection in the Western Region, especially British Columbia, faced several hurdles including diverse linguistic profiles and higher mobility levels of potential respondents.

## Response rate comparison to other General Social Survey cycles

Household survey response rates in Canada, as in other countries, have typically been declining over time. Furthermore, time use surveys typically have lower response rates than other types of household surveys. Statistics Canada's General Social Survey on Time Use (TUS) is not excluded from these trends: as noted earlier, in 2015, the survey's response rate was considerably lower than it had been five years before, at 38% versus 55%. The response rate for the 2015 TUS was also approximately eight to 15 percentage points lower than that achieved for other recent GSS cycles (Chart 2).

**Chart 2**  
**General Social Survey response rates since 2007 by cycle topic**



Sources: Statistics Canada, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014 and 2015 General Social Survey.

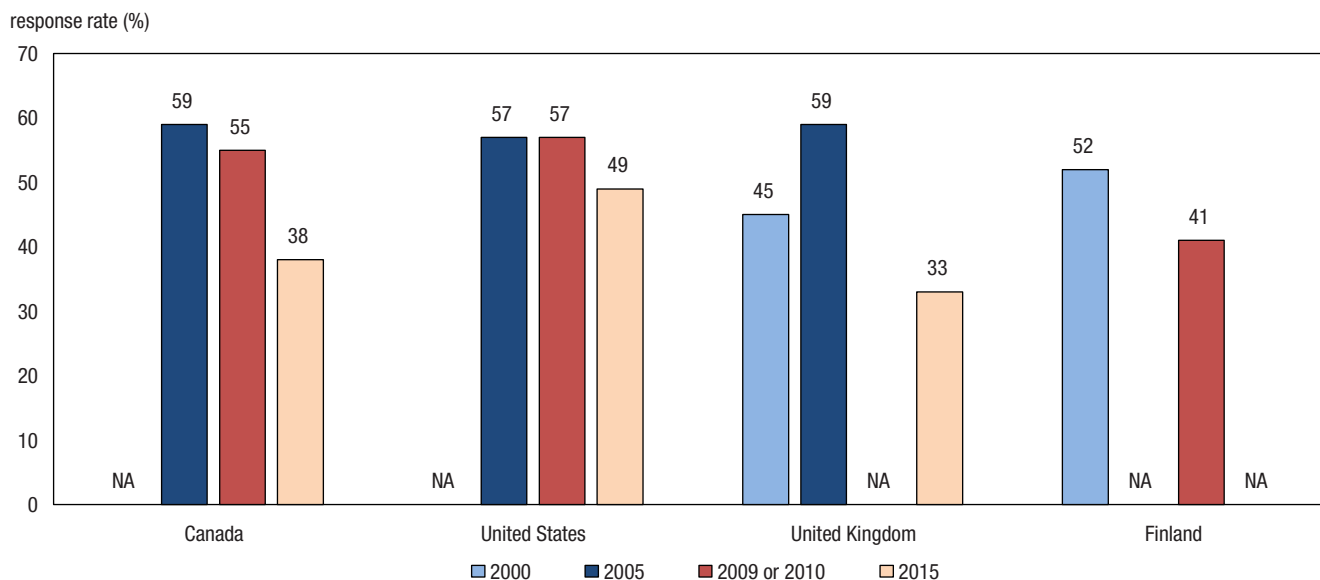
## Response rate comparison to international Time Use Surveys

Many countries collect data on time use in a household survey format. Typically, response rates are highest in countries like Australia, New Zealand and France, which collect their data on time use via face-to-face interviews rather than telephone interviews or by electronic questionnaire. Nevertheless, response rates for TUS in those countries<sup>1</sup> still remain lower than for other surveys conducted by those same statistical agencies due to respondent burden and the separate completion of the activity recall diary.

For the three countries where time use surveys are done using a computer assisted telephone interview with a similar methodology used in Canada, namely, the United States, United Kingdom and Finland, response rates since 2005 have ranged from a high of 59% (Canada in 2005) to a low of 33% (UK in 2015). However, response rates have dropped noticeably in each country in the most recent survey years (Chart 3).

1. For more information, refer to various on-line resources including: European general social surveys ([http://www.europeansocialsurvey.org/methodology/ess\\_methodology/data\\_collection.html](http://www.europeansocialsurvey.org/methodology/ess_methodology/data_collection.html)), European Time Use Surveys ([https://www.google.ca/url?sa=t&source=web&rct=j&url=https://www.h5.scb.se/tus/tus/doc/Metadata.pdf&ved=0ahUKEwihocOvl9TTAxB7IMKH4fBU5QFghXMAQ&usq=AFQjCNHnxg4axxcKchCDp\\_hRaybkitqfw&sig2=FCnvsHoCIZ2Yq670PxmJA](https://www.google.ca/url?sa=t&source=web&rct=j&url=https://www.h5.scb.se/tus/tus/doc/Metadata.pdf&ved=0ahUKEwihocOvl9TTAxB7IMKH4fBU5QFghXMAQ&usq=AFQjCNHnxg4axxcKchCDp_hRaybkitqfw&sig2=FCnvsHoCIZ2Yq670PxmJA)), Australian general social survey ([http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by Subject/4159.0.55.002~2014~Main Features~Response Rates and Sample Achieved~15](http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/4159.0.55.002~2014~Main%20Features~Response%20Rates%20and%20Sample%20Achieved~15)) and New Zealand Time Use Survey ([http://m.stats.govt.nz/browse\\_for\\_stats/people\\_and\\_communities/time\\_use/TimeUseSurvey\\_HOTP2009-10/Data Quality](http://m.stats.govt.nz/browse_for_stats/people_and_communities/time_use/TimeUseSurvey_HOTP2009-10/Data%20Quality)).

**Chart 3**  
**Response rates to Time Use Surveys in the United States, United Kingdom, Finland and Canada, by collection year since the year 2000**



**Note:** NA stands for not available.

**Sources:** Statistics Canada, 2005, 2010 and 2015 General Social Survey.  
 American Time Use Survey User's Guide, *Understanding ATUS 2003 to 2015*.  
*Innovations and lessons learned from the UK 2014-2015 Everyday Life Survey*.  
*The Time Use Survey 2005 (UK)*.  
 Statistics Finland, Methodological descriptions: Time Use Survey 2009.

## Minimizing errors and bias

There are two types of survey errors: sampling error and non-sampling error. Sampling error arises from estimating a population characteristic by measuring only a portion of the population rather than the entire population. Non-sampling errors including nonresponse errors which can lead to biased estimates when the characteristics of respondents and non-respondents are different.

With respect to non-sampling errors, Statistics Canada does everything possible to eliminate bias in its surveys even from the initial planning stages of the survey: for example, for the 2015 TUS significant effort was made to minimize bias by using a well-tested questionnaire, a proven methodology, specialized interviewers and strict quality control, and by following up with households that did not initially respond to the survey. In addition, extra measures were taken to offset the risk of nonresponse bias and to ensure that 2015 TUS data would be fit to provide quality estimates at the national and regional (Atlantic, Quebec, Ontario, Prairies, British Columbia) levels.

The main method used to reduce nonresponse bias for the 2015 TUS involved a series of adjustments to the survey weights to account for nonresponse as much as possible. For all GSS cycles, weighting adjustments make use of known characteristics about the non-respondents, from the survey frame for example, to create response homogeneity groups that are used to adjust initial design weights for nonresponse. For the 2015 TUS, an additional adjustment was added where basic characteristics of non-responding households, such as income and household composition, were extracted from administrative sources and then used to model and adjust nonresponse. This new adjustment proved useful since very little information was available on the survey frame for household nonresponse and it reduced the potential of nonresponse bias in the 2015 TUS.

As is the case with most household surveys, once all nonresponse weighting adjustments presented above were completed for the 2015 Time Use Survey (TUS), a final weighting step was applied to adjust the weights to known population counts for province by age and sex. This weight calibration ensured that known population counts were respected for key demographic variables when weighted data are used. For example, even though nonresponse was higher in British Columbia, this calibration step ensured that the British Columbia population is accurately represented when survey weights are used to produce estimates. In addition, a reference day calibration was undertaken so that the reference day distribution accurately represents each day of the week.

## Data validation

Once the final set of weights for the 2015 TUS were derived, Statistics Canada validated the survey estimates in accordance with Statistics Canada's standards on data validation and quality assurance. Key estimates were examined at the national and provincial levels by comparing them with internal and external benchmarks. This exercise was used to assess the fitness for use of the data and potential nonresponse bias. Nonresponse bias occurs in statistical surveys if the answers of respondents differ from the potential answers of those who did not answer.

The first step of the validation exercise determined that 2015 TUS results were consistent with findings from the last three GSS Time Use Surveys for variables such as perception of time, general health, main activity and life satisfaction.

Household and respondent characteristics from the 2015 TUS were next compared with data from the 2014 General Social Survey (GSS) on Victimization. This validation showed that, at both the national and provincial levels, the 2015 TUS and the 2014 GSS on Victimization were consistent with respect to the proportion of Aboriginal persons and immigrants and location of residence (Census Metropolitan Area/non-Census Metropolitan Area) and living arrangements of the population.

2015 TUS data were also validated against data from other Statistics Canada surveys, including the 2015 cycle of the Canadian Community Health Survey (CCHS). Again, at both the national and provincial levels, there was a consistency in results across several variables, including marital status, dwelling type, household size and the respondent's main activity.

## Fitness for use of 2015 Time Use Survey Data

By applying appropriate nonresponse adjustments to survey weights and validating key survey estimates against several other data sources, Statistics Canada has endeavoured to ensure that data from the 2015 Time Use Survey are fit-for-use. Nevertheless, data users must be aware that estimates for small subpopulations, including those for some provincial regions and lower levels of geography, may be subject to higher sampling error and higher risks of nonresponse bias.