

Impacts on Statistics Canada travel and tourism data resulting from replacement of E311 declaration cards with Primary Inspection Kiosks

Prepared by Tourism and Centre for Education Statistics Division and Household Survey Methods Division, Statistics Canada

Version 1.0

September 10, 2018

Introduction

Data for Statistics Canada's Frontier Counts (FC) program are produced using administrative data received from the Canada Border Services Agency (CBSA) on all international travellers who have been cleared for entry or re-entry into Canada. This includes residents of Canada, the United States and overseas entering Canada from abroad.

In March 2017, the CBSA began introducing the electronic Primary Inspection Kiosk (PIK) system at major airports in Canada to collect information from commercial air travellers arriving in Canada. In the airports where it is deployed, the PIK system replaces the paper E311 Declaration Cards that are completed by international travellers to Canada and submitted to airport border services officers upon arrival in Canada.

This guide is intended for users of travel and tourism data. It provides an overview of how the change in data collection, with PIK replacing E311 cards, has resulted in changes to individual travel statistics. It contains information on how to use and interpret the PIK-based data as well as how to compare the current data with historical data that were based on the E311 cards.

Definitions and concepts

Data collection and processing

Overall, the paper E311 cards and electronic PIK represent different means of collecting a similar set of information on international travellers entering Canada by air.

The E311 cards are normally distributed in-flight to travellers arriving in Canada, who complete the form before submitting them to airport border services officers. In comparison, travellers reporting using PIK do so upon arrival in Canada at the touch-screen kiosks in the airport before proceeding to border services officers. Some travellers make use of CBSA's eDeclaration mobile app that allows them to prepare declaration information in advance and load it when arriving at the kiosks, but these currently represent a small minority. Whether using the kiosk or the eDeclaration app, travellers who report using PIK follow instructions on a series of screens to input their information.

All completed E311 cards are forwarded to Statistics Canada for processing, data capture, and quality evaluation. Given the high number of cards received on a yearly basis prior to PIK (more than 22 million) and resource and time constraints, a sample design was developed for processing the cards and arriving at estimates of international traveller counts. For PIK, electronic data files representing all completed PIK declarations are forwarded to Statistics Canada, therefore no sampling of PIK data files is required.

Data on international travellers received from CBSA, including both E311 cards and PIK, are distributed by Statistics Canada into categories of flows which are:

- Canadian residents returning to Canada from the United States,
- Canadian residents returning to Canada from countries other than the United States (direct or via the United States),
- United States residents entering Canada,
- Residents of countries other than the United States entering Canada (direct or via the United States), and
- "Other" travellers, which consist of a) foreign and resident crew members, and b) diplomats, military personnel, immigrants and former residents.

As with other administrative data received from CBSA, the E311 and PIK data are verified, validated, and integrated into the Frontier Counts system. Several edits and verifications are performed, E311 cards are weighted where a sampling design was conducted, and estimates are produced for each port of entry by combining these data with other sources covering the target population of international travellers (E63, NEXUS, CANPASS) at the airports.

For more information regarding Frontier Counts data sources and methodology, please consult the [Definitions, data sources and methods, 5005 – Frontier Counts](#).

Deployment of PIK

The following is a list of the 19 airports from which Statistics Canada has been receiving and processing E311 Declaration Cards and, where applicable, the dates when PIK was deployed.

- Gander
- St. John's
- Halifax (PIK deployed October 24, 2017)
- Québec City (PIK deployed December 11, 2017)
- Montréal (PIK deployment started November 7, 2017)
- Mirabel
- Mont-Tremblant
- Ottawa (PIK deployed March 17, 2017)
- London
- Toronto Terminal 1 (PIK deployment forthcoming)
- Toronto Terminal 3 (PIK deployed June 21, 2017)
- Toronto Island (PIK deployed May 8, 2018)
- Winnipeg (PIK deployed June 12, 2018)
- Saskatoon
- Regina
- Edmonton (PIK deployed September 12, 2017)
- Calgary (PIK deployment forthcoming)
- Vancouver (PIK deployed April 19, 2017)
- Victoria

Sources of difference between E311- and PIK-based results

Between alternate methods of collecting data to measure a given subject, differences in the nature and accuracy of data can result from a variety of reasons, many of which apply to the switch from paper E311 cards to electronic PIK kiosks. There are two sets of sources for these differences. First, they can originate from changes in wording or concept, changes in the format of the questions or the questionnaire (e.g., paper vs electronic), changes in who is reporting the information, and changes in interpretation on the part of the respondent. Second, differences can originate from changes in sample design, coverage and accuracy of data processing.

This document focuses on the changes to individual concepts measured by the Frontier Counts that originate from the first set of sources. With regards to sample design, where the census of PIK information replaces samples of E311 cards, the resulting PIK-based data will necessarily be more statistically accurate. However, due to high sampling proportions, E311-based estimates were already accurate, with coefficients of variation

(CV) varying from less than 1% to 5%. Similarly, data processing methods are not expected to be an important source of difference between E311 and PIK. The degree of processing error associated with E311 cards is assumed to be negligible given the safeguards and analyses that are already in place, while a similar or greater degree of processing accuracy is assumed to exist with PIK data, as there is no processing required to capture and convert it into electronic form.

Coverage error, however, is recognized as an overall source of difference between E311-based estimates and PIK-based counts. Prior to the deployment of PIK, coverage error associated with E311 cards was considered to be insignificant because travellers were obligated to hand in their E311 cards/printouts to Canada Border Services Agency (CBSA) officers. Since the start of PIK, CBSA has identified that some travellers at PIK airports may bypass both PIK and E311 (unaccompanied minors, travellers with a non-machine-readable travel document, foreign representatives and their families, travellers who arrive during a kiosk outage) and make their declarations directly to border services officers. These declarations are not currently recorded, however CBSA estimates the total amounts to be in the range of one to two percent or less. Statistics Canada is currently working with CBSA to account for travellers who undergo this form of in-person processing.

Response error occurs when a respondent reports an incorrect response, often from misunderstanding the question being asked. Changes in respondent behaviour are known to occur when the mode of collection changes, such as from a paper to an electronic format in the case of E311 to PIK. Indeed, comparison of data from the E311 cards and the PIK indicates that there are changes in the degree of response error in certain categories of travel questions. These changes in response error occurred because of the differences in question format and wording, and whether the information was provided by the traveller, the border services officer or another administrative source. The degree of response error associated with E311 cards and PIK cannot be calculated.

With the change from E311 to PIK there is also an important change in the environment in which the traveller completes the declaration as well as the change in data collection mode. In general, travellers completing their E311 cards during their flight can be assumed to have more time to read and consider the questions than travellers at an airport PIK kiosk who are wanting to advance to the border services officers, possibly with line-ups of people waiting behind them.

The main highlights of this assessment are presented below.

Response error

Arriving from

Both E311 cards and PIK require the travellers to declare where they are arriving from using the following response categories (presented in order):

- U.S. only
- Other country direct
- Other country via U.S.

Results of this question are important primarily for identifying the proper category of 'flow' for returning Canadian travellers and visiting overseas travellers. For Canadian travellers it allows Statistics Canada to distinguish between those who are returning from the United States and those who are returning from a trip to another country – either direct or after transiting in the United States. Travellers from overseas countries entering Canada by air are also disaggregated by whether they arrived direct or via the United States. For all travellers, whether they are residents of Canada, United States or overseas countries is determined by their response to the Country of residence question, and not by the Arriving from question.

The Arriving from question is known to be unclear for certain flows of travellers. Some overseas residents who enter Canada following a flight from the United States after a visit in the United States are unsure whether to select 'U.S. only' or 'Other country via U.S.', particularly if they were travelling in the United States as well. Canadian residents who return from overseas trips on flights from the United States also have a tendency to select 'U.S. only' when they should be selecting 'Other country via U.S.' A frequent correction seen on E311 cards was for the first category to be scratched out and the third category selected.

For overseas travellers, a mistaken selection of the first category instead of the third is inconsequential, as both will be recorded as 'Residents of countries other than United States entering Canada by air via the United States.' However, for Canadian travellers, the mistake results in overreporting of 'Canadian residents returning from the United States' and underreporting of 'Canadian residents returning from countries other than the United States.'

Analysis of the PIK-based versus E311-based results indicates that there has been an increase in the number of Canadian residents who reported returning from the United States when reporting using PIK, and a consequent decrease in the numbers who reported returning from countries other than the United States. The assumption is that travellers who are reporting on E311 forms in-flight are generally under less pressure to

complete the form than travellers standing at a PIK kiosk who must complete this step before proceeding to border services officers, and possibly with a line-up of travellers behind them. The E311 travellers are therefore more likely to read and consider all three response categories before making a selection. Furthermore, the categories on the E311 card that are presented vertically are also closer together than the horizontally-presented buttons on the PIK screen, suggesting greater possibility of the third category being overlooked before the traveller hits the 'Continue' button to advance to the next screen. As a result, Canadian travellers returning from an overseas trip via the United States and reporting at a PIK kiosk will be more likely to select the first entry that appears to apply to their situation, and less likely to see or consider the category 'Other country via U.S.'

As a result of this change in respondent behaviour, users are advised to use caution when comparing 2018 PIK-based numbers of Canadians travelling to the United States or overseas with similar E311-based figures from previous years. Direct comparisons of the amount of increase or decrease between the two time periods are not advised.

Country of Residence

On E311 cards, international travellers arriving in Canada by air are asked to self-report their home address, including city/town, province/state if applicable, and country of residence. With PIK, international travellers are asked a less-detailed set of information on their place of residence. First, travellers are presented a screen titled 'Residency' with the categories 'Canada', 'U.S.' or 'Other'. Based on their selection, one of three additional screens will appear: (1) a screen for Canadian residents to report their province or territory of residence, (2) a screen for US travellers to select their state of residence, or (3) a screen for overseas travellers to declare their country of residence. In all three cases, travellers select their entry from a drop-down list; travellers cannot type in their selection. For overseas travellers, the list of countries presented corresponds to the 'Nationality' element of the [International Civil Aviation Organization \(ICAO\) 9303 compliant travel document](#). The language of the list varies depending on the language the user selected to complete the PIK session, with up to 15 language options at some airports.

With E311 cards, the country of residence is coded by Statistics Canada according to the set of countries that represent the most disaggregated dissemination categories. For E311 cards that were received for flights arriving after January 1, 2018, the list of countries corresponds to Statistics Canada's Standard Classification of Countries and Areas of Interest ([SCCAI 2016](#)). For the small number of responses that are insufficiently specific (e.g., 'Caribbean'), these are imputed based on citizenship, where possible. Other specific routines were developed to handle some commonly occurring situations. For example, responses similar to 'France – St. Pierre and Miquelon' or 'France (Guadeloupe)' would be coded to St. Pierre and Miquelon and Guadeloupe, respectively.

Based on analyses of PIK-based results with historical trends, the data from PIK appear to be comparable with E311-based figures on major source countries of travellers to Canada (with the possible exception of Taiwan). Noted differences in data patterns between PIK and E311 involve mainly smaller source countries – particularly territories associated with other countries – and suggest a number of possible reasons:

- French territories – there have been noticeable decreases in the numbers of arrivals from St. Pierre and Miquelon, Guadeloupe, Martinique, Réunion. As noted above, respondents who provided both pieces of information on E311 cards would be coded to the more detailed level. With the long drop-down list provided in PIK, respondents who may have provided more detail in the past were content to select the broader response category that travellers were certain would appear, or that appeared higher on the list, saving them additional time spent scrolling.
- US territories – there have been increases in numbers of arrivals from Puerto Rico, American Samoa, the US Virgin Islands and Guam. The hypothesis is that many border services officers reviewing E311 cards from these travellers select a box on the E311 card for CBSA use only which indicates that the travellers were US visitors. This box is used by Statistics Canada in E311 processing to identify fields to capture. Since these cards would be identified as having been completed by US travellers, their responses to country of residence on the card would be neither captured nor reviewed.
- Change in classification system – the more detailed list of countries used since January 1, 2018 (SCCAI 2016) to accommodate PIK has resulted in some new categories being created (e.g., Sint Maarten, Curaçao) and the elimination of other aggregated categories (e.g., Dutch West Indies) formerly used by the Frontier Counts.
- Other territories – other territories and areas associated with larger countries (such as Macao) have seen changes in response that may be partly attributed to differences in reporting behaviour between a write-in field and a drop-down list in the degree of detail that is reported. .

Apart from the cases identified above, results from E311 and PIK are considered comparable for counts of travellers from overseas countries.

Immigrants and Other Travellers

There is a difference in the manner in which immigrants are recorded between E311 Declaration cards and PIK, which has led to significant overreporting of the numbers of immigrants from PIK-based estimates.

With E311 Declaration Cards, a traveller does not self-report as having arrived in Canada with the intention of immigrating; this identification is made in the CBSA-only portion of the card by the border services officer once the traveller is questioned during primary or secondary inspection. The categories of Purpose of Trip available to the traveller on the E311 are restricted to study, personal and business.

In PIK, however, it is the traveller who self-reports as intending to immigrate by selecting 'immigrate' from the following Purpose of trip categories: visit/in-transit, study, work and immigrate. Selecting 'immigrate' in PIK leads to questioning by the border services officer following submission of the on-screen declaration. In cases where the border services officer concludes that the traveller has misunderstood the question or its intended purpose and selected 'immigrate' in error, this value is not corrected by the officer in the PIK database.

This change in question format has resulted in overreporting of immigrants arriving at PIK airports in the months of January to May 2018 compared with the same reference months of previous years. Users are advised to not rely on Frontier Counts figures of immigrants arriving at PIK airports since the deployment of PIK.

Crew

With the switch from E311 to PIK, there have been increased numbers of flight crew members reported. Counts of the more numerous Canadian crew members have increased the most in terms of numbers but, as a percent increase, the change has been greatest for crews from countries other than Canada or the United States.

With E311 cards, the identification as a member of the crew of the aircraft is made by a border services officer in the CBSA-only portion of the card. With PIK, a crew identifier flag is automatically applied in the PIK database for members of the crew. The flight manifest submitted to CBSA by the airline provides the source of the crew members' names.

A hypothesis to explain the increase in crew members from countries other than Canada or the United States is that long-haul flights that may have employees work in shifts during the flight, or that off-duty airline employees may be flying to a destination to work a flight originating from that destination. With E311, crew members who are off duty at the end of a flight may be in plainclothes and not appear as crew to border services officers. As a result, the officers would be less likely to identify them as crew members on the E311. In comparison, the flight manifest submitted by the airline company may record all airline staff on the flight. Further investigation is required to confirm or disprove this hypothesis.