





Appendix 1: Detailed summary of the Canadian arm of the 2016 International Tobacco Control Four Country Smoking and Vaping Survey (ITC 4CV1) compliance with Checklist for Reporting Results of Internet E-Surveys (CHERRIES)


For additional information, please refer to the ITC Four Country Smoking and Vaping Survey, Wave 1 (4CV1) Technical Report available at: http://www.itcproject.org/files/4CV1_Technical_Report_20July2018.pdf

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| Design | |
| Target population | The ITC 4CV Wave 1 Canada sample was designed to be representative of Canadian smokers across the ten provinces. The ITC 4CV Wave 1 Canada sample also included recent quitters and e-cigarette users, but was not designed to be a nationally representative sample of the latter two user types. |
| Sampling frame | <p>The 4CV Wave 1 Canada sample comprised the following cohorts: (1) re-contact smokers and quitters who participated in the previous wave of the ITC 4 Country Canada Project, regardless of e-cigarette use, (2) newly recruited current smokers and recent quitters (quit smoking in the past 2 years) from the Leger web panel, who do not use e-cigarettes daily/weekly, and (3) newly recruited current e-cigarette users (use at least weekly) from the Leger web panel. The description of each subsample group is below, along with a description of Leger’s panel recruitment.</p> <ol style="list-style-type: none"> 1) The ITC 4 Country Wave 9 cohort included 1,333 smokers or quitters who were originally recruited as smokers from a probability-based nationally representative (across 10 Canadian provinces only) random-digit dialing (RDD) sampling frame and replenished at each wave; and 253 smokers recruited at Wave 9 from a national Leger web panel* (recruited from both probability- and non-probability based frames). 2) Newly recruited current smokers and recent quitters (quit smoking in the past 2 years) were recruited from a national Leger web panel* (recruited from both probability- and non-probability based frames). 3) Newly recruited current e-cigarette users (use at least weekly) from a national Leger web panel* (recruited from both probability- and non-probability based frames). <p>Please see the one-page figure of the ITC Canada sample in Appendix 1.2 of the ITC 4CV1 Technical report.</p> <p>Description of Leger’s panel: Canadian respondents (i.e., smokers, quitters, and e-cigarette users) were selected at random from the Leger web panel to participate in the study. Leger’s online panel has approximately 475,000 members nationally – with between 10,000 and 20,000 new members added each month, and has a retention rate of 90%. The Leger panel is high-quality because most panel members are recruited among a pool of respondents</p> |


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|---|---|
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| | <p>participating in random-digit-dialing surveys, which have a wide reach employing probability sampling. In other words, the “population” of the Leger panel was from samples that can be considered nationally representative of Canada.</p> <p>*The ITC Canada sampling frame included the ten Canadian provinces only. The Leger web panel sampling frame used a combination of probability-based and non-probability/opt-in recruitment methods.</p> |
| Sample | <p>The ITC 4CV1 Canada sample was comprised of 3,828 smokers, recent quitters (in the past 2 years), or e-cigarette users (i.e., 661 smokers/quitters from a probability-based RDD-frame, 2337 smokers/quitters from national Leger web panel* (recruited from both probability- and non-probability based frames), and 830 e-cigarette users from a national Leger web panel* (recruited from both probability- and non-probability based frames).</p> <p>The analyses in the present study are based on a sample of 3215 current smokers (1390 cigarette smokers, 1825 dual users of cigarettes and e-cigarettes). Please refer to Figure 1 in manuscript.</p> <p>*The ITC Canada sampling frame included the ten Canadian provinces only. The Leger web panel sampling frame used a combination of probability-based and non-probability/opt-in recruitment methods.</p> |
| IRB (Institutional Review Board) approval and informed consent process | |
| IRB approval | All survey procedures and materials were cleared by a University of Waterloo Research Ethics Committee. |
| Informed consent | <p>All participants were initially recruited via mailed letter or email invitation that described the topic of the survey, the length of the survey, and the incentive value. Invitations to non-panelist respondents described who was conducting the research, and stated that respondents could skip questions or withdraw, that data were strictly confidential, the ethics contact information, where data would be stored, and after how long it could be shared with other researchers.</p> <p>Upon entering the survey, the first few screens reiterated the information above and also explained who was conducting the research, that respondents could skip questions or withdraw, that data were strictly confidential, and provided the ethics contact information.</p> |
| Data protection | Personal information was collected or stored for ITC cohort members that had been recruited originally from an RDD frame only (no personal data for panelists was stored in the survey data). The survey was hosted on a secure server at the University of Waterloo that conforms to institutional standards for security. The PINs were 6-digit alphanumeric codes. |

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| Development and pre-testing | |
| Development and testing | <p>The survey content and logic was developed by a team of international tobacco control and survey design experts through a structured and iterative process of consultation and revision. The survey specifications were then sent to an experienced ITC Survey Management team for operationalization and further extensive systematic review and refinement to ensure survey logic, question wording, response options, and all other survey elements were refined and cross-referenced for consistency, clarity, and accuracy. The ITC 4CV1 Survey was programmed using Acuity4 software by Voxco (https://www.voxco.com/help-center/acuity/) via a collaborative process between the programmer/fieldwork team and the investigator team to refine survey content as needed to ensure a good survey experience and accurate data collection. The programmed instrument was then systematically and comprehensively tested for usability and technical functionality by the survey firm, as well as by the ITC team.</p> |
| Recruitment process and description of the sample having access to the questionnaire | |
| Open survey versus closed survey | The survey was a closed, password-protected survey, in which the respondents could access only their own unique survey record via a personal identification number (PIN)/predetermined link. Each record was associated with a unique PIN. Email and letter invitations included the name of the intended respondent. |
| Contact mode | <p>Participants who had <u>participated in the previous ITC 4 Country Survey and who had been originally recruited from an RDD frame</u> were recruited to the current survey differently, depending on whether they had previously provided ITC with their email address (vs. all past correspondence having been done by phone and postal address):</p> <ul style="list-style-type: none"> ○ <u>ITC 4 Country cohort members who had previously provided an email address</u>: were invited to participate in the 4CV1 Survey by email invitation, plus a series of email reminders until submitting a completed survey. ○ <u>ITC 4 Country cohort members who had NOT provided an email address to ITC</u>: were mailed an invitation letter, and were prioritized to receive a telephone reminder call, in order to maximize the uptake of the web survey by past phone respondents. <p>Participants who had been <u>recruited from the Leger panel</u> were contacted in the standard method (standard Leger survey invitation) from Leger and were re-directed to the ITC 4CV1 Survey hosted by the University of Waterloo Survey Research Center, if the respondent agreed to participate by clicking on the link.</p> |
| Advertising the survey | Respondents were recruited from existing cohorts or panels. Leger increased recruitment efforts into their panel to meet about four hard-to-reach quota |

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| | targets of e-cigarette users, but used the existing procedures for recruiting to their regular panel to maintain the sampling frame. |
| Survey administration | |
| Web/E-mail | The 4CV1 Survey was a web survey hosted by the University of Waterloo Survey Research Centre (SRC). Respondents were recruited by the SRC or by Leger and directed to the web survey hosted on a University of Waterloo server. |
| Context | <p>The 4CV1 Survey link was posted on the University of Waterloo SRC website – this location is where the SRC commonly posts the surveys they conduct. The research team thought that context would have no effect or a minimal effect on participation (i.e., some respondents may have been reassured to be directed to the University of Waterloo server).</p> <p>The survey could only be accessed by participants who had been specifically invited to participate. All of the persons invited to the survey were either ITC 4 Country cohort members or Leger panelists. After completing the survey, Leger panelists were redirected to the Leger website (where their study incentive was then processed), and all other respondents were redirected to the ITC Project website.</p> |
| Mandatory/voluntary | The survey was voluntary. Reminder emails and telephone calls were conducted in order to maximize the response. |
| Incentives | \$25 CAD gift card or cheque. |
| Time/Date | Data collection: July 11, 2016 to November 29, 2016 |
| Randomization of items or questionnaires | None of the questionnaire items were randomized. This was intentional to prevent any differential priming of respondents. |
| Adaptive questioning | The ITC 4CV1 Survey used adaptive questioning based on information that the respondent had provided during the survey or to ITC/Leger. |
| Number of Items | For most of the survey, one item (i.e., question) was asked per page, with the exception of up to nine ‘question series’. Each ‘question series’ consisted of multiple items on one screen (i.e., as grids or a scroll-down format for mobile devices). Respondents’ previous answers determined how many of the nine ‘question series’ they were presented. |
| Number of screens (pages) | The TOTAL number of screens (pages) applicable to the Canadian 4CV1 web survey was over 400 screens. However, no respondent would ever have been exposed to all of these screens due to routing and filtering of questions for different samples, user types, and response patterns throughout the survey. Each respondent would have seen significantly fewer screens in total, and the number of screens seen across respondents would have varied significantly depending on their sample source, user types, and response patterns. |

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| Completeness check | Respondents had to select a response to every survey item in order to progress to the next screen but were able to choose ‘Prefer not to answer’ for any question. The survey contained essential questions that were necessary to determine eligibility. If a respondent was unwilling or unable to answer an essential question, then the respondent was shown a note explaining that they would be unable to continue the survey if they did not provide a response. This explanatory note appeared on the same screen as the essential question. |
| Review step | Respondents were able to review and change their answers at any point, up until they formally submitted their survey. At the end of the survey, the respondent was prompted to hit the submit button in order to submit their completed responses. |
| Response rates | |
| Unique site visitor | Unique site visitors were not counted as all potential respondents were invited to complete the survey using a unique web link. Each respondent was assigned a unique PIN. |
| View rate (Ratio of unique survey visitors/unique site visitors) | Unique site visitors were not counted. |
| Participation rate (Ratio of unique visitors who agreed to participate/unique first survey page visitors) | <p>Unique first page survey page visitors were not counted.</p> <p>The response rate was 19.1%. The response rate is defined here as the number of completed interviews as a percentage of an <i>estimated</i> number who were invited to the survey at a time when their quota was “open” and who were eligible to participate. The estimated number in the denominator of the response rate was obtained from observed eligibility rates for those whose eligibility status is known, and the observed quota open rate for the survey as a whole. This metric is essentially the participation rate times the completion rate (based on invited unique first survey page respondents).</p> |
| Completion rate (Ratio of users who finished the survey/users who agreed to participate) | The cooperation rate was 91.1%. The cooperation rate is defined here as the number of completed interviews as a percentage of the number of those who entered the survey and proceeded as far as confirming their eligibility. |
| Preventing multiple entries from the same individual | |
| Cookies used | Cookies were not used to identify multiple entries, but they were used as part of the survey software. |
| IP check | The IP address of the respondent computer was not used to identify potential duplicate entries from the same user. Respondents could access their own unique survey record only (via direct link with embedded PIN, or for some |

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| | respondents via a URL with PIN provided). Respondents were allowed to stop and re-start the survey during the period that fieldwork was open up until the point of formally choosing to submit their data (by choosing this option at the end of the survey). |
| Log file analysis | The log file was not used to identify multiple entries. |
| Registration | As described in the “IP check” field above, respondents could access their own unique survey record only (via direct link with embedded PIN, or for some respondents via a URL with PIN provided). Respondents were allowed to stop and re-start the survey during the period that fieldwork was open up until the point of formally submitting their data (by choosing this option at the end of the survey). Thus, respondents could choose to re-write their previously provided responses if they had not yet submitted their survey. Once submitted, the most recent version of the survey data were considered the final responses. |
| Analysis | |
| Handling of incomplete questionnaires | Only completed surveys were included in the final data set released for analyses. |
| Questionnaires submitted with an atypical timestamp | <p>There were two criteria for poor data quality that were identified from a cursory look at the data:</p> <ol style="list-style-type: none"> 1) Seconds per question (secpq) and 2) % of responses that were either ‘Refused’ or ‘Don’t Know’ (%RDK) <p>13 respondents were deleted from the final dataset due to very extreme values for both of these variables: times of less than 1.7 seconds per question, which by published estimates does not allow time for even reading the question; and RDK responses for more than 70% of the questions completed.</p> <p>Please refer to Section 6.1 in the ITC 4CV1 Technical Report for further details on criteria for poor data quality.</p> |
| Statistical correction | Longitudinal and cross-sectional survey weights for different analyses were constructed for the final data set. For the cross-sectional weights, respondents were first divided into four broad user groups: 1) cigarette only users, 2) dual users, 3) e-cigarette only users, and 4) quitters. The weights were then calibrated on the following cross-tabs using a raking algorithm: user group x gender, user group x age group, user group x geographic region, and user group x language (French vs. English). This weight calibration was done using data from the 2015 Canadian Tobacco Alcohol and Drugs Survey (CTADS). |

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| | Please refer to Appendix 3 in the ITC 4CV1 Technical Report for further details. |