ITC NETHERLANDS PROJECT WITH NEW COHORT

WAVE 1
TECHNICAL REPORT

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Contents
Preface to ITC Netherlands Technical Report Wave 1 ................................................................. iv
1. Introduction .............................................................................................................................. 1
  1.1 Background ................................................................................................................... 1
  1.2 Main Objectives ............................................................................................................. 1
  1.2 Survey Design ............................................................................................................... 2
  1.3 The Research Team ...................................................................................................... 6
2 Survey Measures and Programming ......................................................................................... 7
  2.1 Survey development ........................................................................................................... 7
    2.1.1 Survey development process – content and operationalization.............................. 7
    2.1.2 Survey development process – translation and review/verification ......................... 7
    2.1.3 Survey development process – timeline ................................................................. 8
  2.2 Survey content ................................................................................................................... 8
  2.3 Survey programming and testing ....................................................................................... 8
3. Sampling Design ...................................................................................................................... 9
  3.1 Overview of Wave 1 ITC Netherlands Survey sample and quotas ..................................... 9
    3.1.1 Inclusion/exclusion criteria and quotas .................................................................... 9
    3.1.2 Description of sampling frame ................................................................................ 10
4 Recruitment and interview procedures................................................................................. 11
  4.1 Invitations and reminders ............................................................................................... 11
  4.2 Fieldwork timeline ............................................................................................................. 11
  4.3 The survey experience and interview duration ................................................................. 11
  4.4 Assigning disposition codes .............................................................................................. 12
  4.5 Study incentives ................................................................................................................ 12
5 Quality Control ......................................................................................................................... 13
  5.1 Fieldwork monitoring and progress reports ..................................................................... 13
  5.2 Survey completes vs. partial completes .......................................................................... 13
  5.3 Data cleaning and topline frequencies ............................................................................ 13
  5.4 Translation review and verification .................................................................................... 13
6 Disposition Codes .................................................................................................................... 14
7 Cooperation and Response Rates ........................................................................................... 15
Appendix 1: Allocation (per region and by age and gender) of ITC Netherlands Survey web panel sample ............................................................................................................................... 17
Appendix 2: ITC Netherlands Survey Email Templates .............................................................. 18
  Invitation e-mail ........................................................................................................................... 18
  Reminder e-mail .......................................................................................................................... 19
Appendix 3: Wave 1 ITC Netherlands Survey Weights .............................................................. 20
Preface to ITC Netherlands Technical Report Wave 1

This report documents the methodology used in the first wave of the International Tobacco Control Policy Evaluation Survey carried out from February 17 to March 31, 2020 in The Netherlands. The ITC Netherlands Survey with New Cohort Wave 1 (NLD1) is the first of a three-wave project, each wave to be separated by approximately 7 months. Waves 2 and 3 are expected to launch in Fall 2020 and Spring 2021 respectively. While it retains many elements of the previous ITC NL cohort of 11 waves, this should be considered a separate project.
1. Introduction

1.1 Background

The International Tobacco Control Policy Evaluation Project (ITC Project) was established in 2002 to monitor and evaluate key health policies implemented in countries that are signatories to the Framework Convention on Tobacco Control (FCTC)—the first-ever international public health treaty—that was adopted in May 2003 by all 192 member states of the World Health Organization. Over the past two decades, the ITC Project has provided invaluable data to inform governments and other stakeholders on whether public health policies designed to reduce the health, economic, and societal costs of tobacco use throughout the world, are effective. The ITC Project conducts longitudinal surveys in representative cohorts in over 29 countries including The Netherlands. The ITC Project team from the University of Waterloo in Canada, partnered with Maastricht University, The Netherlands to develop and field the ITC Netherlands Survey.

The ITC Netherlands Project officially commenced in September 2019 with planning and survey development, and the fieldwork was conducted from February 17 to March 31, 2020. The ITC Netherlands Survey was designed to collect data from Dutch smokers regarding their knowledge, attitudes, beliefs, perceptions, behaviours, and use patterns associated with cigarettes. With tax increases on cigarettes taking place on both April 1, 2020 and January 1, 2021, the ITC NLD1 Survey placed special importance in measuring respondents purchasing behaviour and their level of support for such policies.

The ITC NLD1 Survey represented a new cohort for the ITC Netherlands Project. Previously, the ITC Netherlands Survey was conducted over eleven waves:

- Wave 1: March - April of 2008
- Wave 2: November - December 2008
- Wave 3: March – May 2009
- Wave 4: May - June 2010
- Wave 5: May – June 2011
- Wave 6: May – June 2012
- Wave 7: May – June 2013
- Wave 8: May – July 2014
- Wave 9: November – December 2015
- Wave 10: November – December 2016
- Wave 11: November – December 2017

1.2 Main Objectives

The objectives of the ITC Netherlands Survey with New Cohort are:

- **To examine patterns of behaviour and opinions associated with the use of tobacco by adults in The Netherlands.**

  The study will provide very detailed information about the behaviour and the opinions of smokers, as well as their consumption patterns and other important aspects of tobacco use.
To examine the impact of specific tobacco control policies that have been, and will be, implemented in The Netherlands from 2008 onward. The ITC survey has several sections that are intended to evaluate the impact of certain tobacco control policies, such as health warnings on cigarette packages, advertising campaigns that promote quitting, and cigarette tax increases that have been scheduled for April 1st, 2020 and January 1st, 2021. As a result, the survey will be able to examine the extent to which policies can change smoking behaviour and attitudes toward smoking.

To compare smoking behaviour and the impact of policies between The Netherlands and other ITC countries. The ITC Survey asks similar questions in more than 20 countries, thus allowing a comparison of the policies and the pattern of tobacco use between the Netherlands and the other participating countries.

1.2 Survey Design

The ITC Netherlands Survey is a national survey conducted by Maastricht University in The Netherlands, in collaboration with the ITC Netherlands Project team, based at the University of Waterloo in Canada.

The ITC Survey is a longitudinal cohort study. Thus, the respondents who participated in Wave 1 will be re-contacted for a follow-up survey in subsequent waves. Respondents who have been recruited as smokers, but who have quit smoking by the time of the next wave, will still be surveyed using a ‘Quitter’ version of the survey instrument. Any respondents who are lost to follow up or unable to complete the subsequent wave will be replaced with new, randomly selected respondents from within the sample areas. Eligible respondents for The ITC Netherlands Survey were cigarette smokers (smoked at least one cigarette in the last month) aged 18 years or older who have smoked more than 100 cigarettes in their lifetimes.

The ITC Netherlands Survey contains questions that examine the impact of key policies of the FCTC. These questions consist of common measures of tobacco use found in across ITC country surveys; including historical and current behaviour, addiction/dependence, beliefs and attitudes about smoking, knowledge about smoking related diseases, and perceived risk. Section 3 provides additional information about the survey content. NLD1 also contain questions relevant to the new European Commission’s Tobacco Products Directive (TPD), passed in 2014, and effective as of May 20, 2016. These questions have been catered to match other ITC surveys in European countries impacted by the TPD.

Figure 1 shows the timeline of the ITC Netherlands Project. It shows the dates of selected tobacco control policies implemented in The Netherlands since 2005, as well as the ITC Survey fieldwork dates.
**NETHERLANDS**

Timeline of Tobacco Control Policies and ITC Surveys (NL)

1988
- **Tobacco Act**

1994
- **Health warnings**
  - “Smoking seriously harms health” replaced “Smoking threatens health”

Jan 1995
- **Ban on tobacco advertising on billboards**

1996
- **Ban on tobacco commercials on cinema screens**

2002
- **Revised Tobacco Act implemented**
  - May 1 2002
  - TPO-1: cigarette packs to carry warnings that cover 30% of front and 40% of back, with rotating texts
  - Nov 2002
  - Advertising and Promotion ban implemented

Jan 2003
- **Ban extended to newspapers and magazines**
- **16-years age-of-sale in effect**

Jan 2004
- **Smoking ban for workplaces and public transport**

2005
- **Smoking ban implemented in nursing homes and homes for the elderly**
  - Jan 2005
  - FTCJ ratification

2008
- **Smoking ban in hospitality industry, public transportation, workplaces, and sport canteens. Smoking rooms allowed**
- **€0.25 tax increase on cigarettes and €0.31 increase on rolling tobacco**

July 2008
- **Mass media campaign to encourage quitting smoking**

Apr 2008 - Jan 2009
- **Ban suspended in small owner run cafés**

Jul 2009
- **Dutch govt announced intention to reverse smoking ban in small bars and cafés**

Feb 2010
- **Ban reinstated in small owner run cafés**
  - Mar 2010
  - Ban extended to all bars

Nov 2010
- **Euro 0.22 tax increase on cigarettes**

July 2011
- **Ban suspended in small owner run cafés and bars (< 70 sq. m or 750 sq. feet)**

Jan 2011
- **Reimbursement of smoking cessation treatments discontinued**
- **Funding cut for mass media campaigns**

Jan 2012
- **€0.35 tax increase on cigarettes, €0.60 tax increase on shag.**
- **Reimbursement of smoking cessation treatments reinstated**

Feb 2013
- **Ban to be reinstated in hospitality sector in 2015**

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Survey Mode: Computer Assisted Telephone Interview (CATI), Web Interview (CAWI)

Respondent Types: Smokers

Updated Jul 2020
NETHERLANDS
Timeline of Tobacco Control Policies and ITC Surveys (NL, DM)

May 20, 2016 (TPD 2014)
- Content yields removed, instead to carry 50% general HWs on sides
- Combined HWs increased from 35% to 65%, will include text and pictorial warnings and cessation info, to heuristically paraphrasm
- HWs min. dimensions increased, restricting lipstick-style packs
- Herbal tob. packages to carry one-sided 30% HWs
- Min. combined HWs increased from 15% to 35% for all tob. products
- Characterizing flavours banned, flavoured components banned, and an extensive list of additives banned
- Unit packs of cigarettes to be 20p units, packs of RYO tobacco to be 30 grams

Nov 20, 2016 (TPD 2014)
- Max. nicotine concentration for e-liquids set at 20mg/mL
- HWs required on e-cigs & e-liquid packs, 30% off front and back
- HWs are specific to e-cigs
- Comprehensive advertising ban for e-cigs & e-liquids
- E-cig packaging must include guidelines on toxicity and usage

2017
- Advertising ban extended to display of tobacco products at point of sale

May 2017 (TPD 2014)
- Grace period for non-conformed tob. e-cigarettes and e-liquids
- E-cig advertising must include guidelines on toxicity and usage

May 2019 (TPD 2014)
- Packaging banned from using U/M descriptors and viability claims
- FM cigs. and RYO tob. packs to include unique identifiers to mitigate illegality and employ track & trace measures
- Smoking rooms are banned and to be demolished. Details of implementation are unknown

Survey Mode: Telephone (CATI), Web (CAWI)
Respondent Types: Cigarette Smokers

NL Gold Magic (DM):
Survey Mode: Web (CAWI)
Respondent Types: Cigarette Smokers and Non-Smokers

* Target Sample Size
Netherlands
Timeline of Tobacco Control Policies and ITC Surveys (NLD)

Jan, Apr 2020
• Tax increase on tobacco products

May 2020 (TPD 2014)
• Products with a market share ≥ 3% are required to comply with characterizing flavour, additive and flavoured component ban

Jul 2020
• Point of sale tobacco displays banned in supermarkets
• Smoking ban already enforced will be extended to including e-cigarettes. Smoking (FM, RYO, e-cigarettes) is prohibited in the workplaces (+1 employee) and public buildings and/or areas

Aug 2020
• Smoking banned on all schoolgrounds

Oct 2020
• Plain packaging for cigarettes

Jan 2021
• Tax increase on tobacco products
• Ban on smoking rooms in restaurants, bars and cafes
• With the exception of specialized tobacco shops, tobacco display ban will be enforced in all other sales points

2022
• POS tobacco displays banned in gas stations, convenience stores, drug stores, bars and cafes, evening shops, and kiosks
• Plain packaging for cigarettes and e-cigarettes

May 2024 (TPD 2014)
• All tobacco products to include unique identifiers to counter illicit trade and employ track & trace measures

2025
• Smoking banned for all sports clubs/associations and playgrounds, and all hospital grounds

NLD Wave 1
Feb-Mar 2020
Smoker N=2,128 (web)

Survey Mode: Web (CAWI)
Respondent Types: Cigarette Smokers

* Target Sample Size

Updated Aug 2020
1.3 The Research Team

The ITC Netherlands Survey has been conducted in Netherlands by researchers from the Maastricht University and the University of Amsterdam (ASCoR). The research team in The Netherlands collaborates with the University of Waterloo in Canada as well as researchers from The Ohio State University in the United States, and the University of Cape Town in South Africa.
2 Survey Measures and Programming

2.1 Survey development

The survey development process comprises four main phases:

1) determining survey content,
2) operationalization of survey content,
3) translation, and
4) translation review and checking.

2.1.1 Survey development process – content and operationalization

• During Phase 1 of the survey development process, the research investigators, project management team, and the survey management team determined which topics were most important to include in the survey, and then developed the detailed survey questions necessary to measure relevant constructs using the existing framework of the ITC database of questions. Questions were adapted to the Netherlands context and new questions were designed as necessary. The resultant draft survey was then sent to the ITC Survey Management Group (SMG) for operationalization of the survey (Phase 2).

• In Phase 2, the operationalization of survey development, involved comprehensively and iteratively reviewing, and revising the survey to ensure that routing, question wording, response options, and all other survey elements are refined and cross-referenced for consistency, clarity, and accuracy. At the conclusion of Phase 2, the final draft of the survey was generated by SMG and sent to Kantar Public Netherlands for programming and testing.

• During the period when the survey firm programmed and tested the survey, additional revisions were made in consultation between Kantar Public and SMG, until a fieldwork version of the survey was achieved. The fieldwork version of the survey was sent to SMG by the firm and is retained in the SMG database. The updated last version of the survey in the database was later used to cross reference with the data set.

2.1.2 Survey development process – translation and review/verification

• The team developed the NLD1 survey content and specifications in English initially. A translator contracted by Maastricht University per specifications provided by the research team then translated the final English NLD1 survey into Dutch.

• After the translator completed the initial translation from English to Dutch, the Dutch-speaking team members at Maastricht University checked the Dutch translation of NLD1, and issues were identified, discussed, and resolved to confirm the Dutch translation met the research team’s standards for the highest possible degree of accuracy.
2.1.3 Survey development process – timeline

Table 1: Summary of the NLD1 survey development timeline.

<table>
<thead>
<tr>
<th>Task</th>
<th>Start date</th>
<th>End date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survey content determined</td>
<td>September, 2019</td>
<td>October, 2019</td>
</tr>
<tr>
<td>Operationalization</td>
<td>October, 2019</td>
<td>November, 2019</td>
</tr>
<tr>
<td>Translation (includes discussion)</td>
<td>November, 2019</td>
<td>December, 2019</td>
</tr>
<tr>
<td>Translation review and checking</td>
<td>December, 2019</td>
<td>January, 2020</td>
</tr>
</tbody>
</table>

2.2 Survey content

The NLD1 survey content was developed to assess the research objectives described in Section 1.2 as well as measure other constructs necessary to meet the survey objectives. These include demographic, social and psychological factors relevant to models of behaviour change, as well as content to meet logistical requirements for the survey.

The specific NLD1 content included the following:

- Information about the survey, time commitment, contact information for ethical concerns or survey-related concerns, and an explicit consent screen.
- Screening section that assesses age, gender, region of residence, smoking status, heat-not-burn product use status.
- Cigarette questions: branch choice, brand perception, dependence, quitting attempts and aids used, knowledge of health effects of tobacco, warning labels, smoke free places, advertising and promotion, purchase, beliefs about quitting, psychosocial beliefs, regulation, perceived risk.
- Other questions: anti-tobacco campaigns, e-cigarette and heated tobacco product use, moderators (i.e., factors not asked in any of the previous categories that are important in models of behaviour change and/or policy evaluation such as time perspective, stress, co-morbidities).
- Demographic questions (e.g., gender identity, education, income, socio-economic status).

2.3 Survey programming and testing

- Kantar Public used the NLD1 specifications (provided in Microsoft Word format) to program the NLD1 Survey in Dutch using their Computer-assisted Web Interview (CAWI) Software “Nfield”.
- Kantar Public worked closely with the research team to test the survey CAWI program and survey quotas. The research team provided signoff on the NLD1 Survey program that met pre-determined standards prior to beginning data collection.
3. Sampling Design

The ITC Netherlands Survey is a prospective longitudinal study, and its sampling design was chosen to yield a representative random sample of smokers residing in the Netherlands. Fieldwork has been conducted by the Dutch survey firm, Kantar Public Netherlands, using a sampling frame drawn from the TNS NIPObase, which consists of over 200,000 respondents who have agreed to participate in Kantar Public research on a regular basis. All respondents sampled were invited to complete the Survey using computer assisted web interviews (CAWI). It should be mentioned that members of the TNS NIPObase were randomly selected (mostly by mail and RDD), and are thus not a panel of self-selected volunteers.

3.1 Overview of Wave 1 ITC Netherlands Survey sample and quotas

The target sample size for the NLD1 Survey was 2,000 Dutch adult cigarette smokers and non-smokers. Table 2 below provides the sub-sample definitions, targets, and achieved sample.

<table>
<thead>
<tr>
<th>Subsample (quota) group</th>
<th>Definition</th>
<th>Target n</th>
<th>Valid n</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Current smokers aged 25 and older</td>
<td>Smokes cigarettes at least monthly AND is aged 25 and older.</td>
<td>1,400</td>
<td>1,786</td>
</tr>
<tr>
<td>2) Current smokers aged 18 to 25</td>
<td>Smokes cigarettes at least monthly AND is aged 18 to 25.</td>
<td>361*</td>
<td>342</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>1,761</strong></td>
<td><strong>2,128</strong></td>
</tr>
</tbody>
</table>

* The target n for subsample 2 was lowered from 600 to 361. The original target was deemed unattainable.

3.1.1 Inclusion/exclusion criteria and quotas

- Kantar Public used demographic profile information about existing panelists to inform which panelists would be invited to the survey. Using this information, a sample of 2128 respondents were recruited from the TNS NIPObase.
- Once invited to the survey, the panelists first completed screening to ensure they met the following inclusion criteria:
  - Participants were adults aged 18 years or older;
  - Participants met the definition of user types specified in Table 2;
  - The quota for the panelist’s specifications (i.e., user type, region of residence, age, gender) was still open.

The study exclusion criteria were:
Those younger than 18 years old;
- Those who were less than monthly smokers or non-smokers;
- Corresponding quota to panelist’s specifications are full.
- Note: Following data collection, any identified ‘speeders’ were removed from the dataset, as described in Section 5.3.

- The study sample was allocated proportionally to stratum sizes based on census data. The research team established quotas for the NLD1 sample based on age, gender, region, and degree of urbanization. Refer to Appendix 1: Allocation (per stratum) of NLD1 web panel sample.

3.1.2 Description of sampling frame

- The sampling frame in the NLD1 Survey was Kantar Public’s NIPObase. All of the subsample groups were recruited from this panel.

- TNS NIPObase is a database of over 200,000 respondents who regularly participate in Kantar research. Of these respondents, a large number of data is available as standard, for example response behavior, socio-demographic characteristics, value orientation, information about media consumption, brand use and even their surfing behavior on the internet. These respondents are approached with all common fieldwork tools. Kantar is very careful with panel members. They are approached a maximum of three times a month and always receive a reward for their cooperation. This results in a very high response (on average about 70%), which greatly benefits the quality of the collected data.
4 Recruitment and interview procedures

4.1 Invitations and reminders

- All communications with panelists were administered by Kantar Public. All communications were in Dutch.

- Kantar Public invited panel members to the NLD1 Survey by sending them a standard email invitation that informed the panelists of the survey length and that they would receive the standard incentive for a 35-minute Kantar Public survey.

- Per standard procedures, Kantar Public sent one email invitation and up to two reminders to panelists who had been pre-identified as being potentially eligible for the NLD1 Survey. Once the quotas were achieved, the web survey was closed. Some additional respondents were recruited from each quota to ensure it was still met following a cleaning process which removed speeders and other data oddities. Panelists were able to ignore the emails, or contact Kantar Public to refuse the study or unsubscribe from the panel at any time.

- Due to difficulties in meeting targets for the 18-25 year old demographic, a decision was made mid-fieldwork to over-sample aged 25-35 to make up for this shortfall.

4.2 Fieldwork timeline

The NLD1 Survey was conducted from February 17 to March 31, 2020.

4.3 The survey experience and interview duration

The NLD1 Survey was designed to have the look and feel of a typical Kantar Public survey, with some branding to identify the survey as an ITC survey.

- The software automatically rendered the on-screen formatting to adapt to the respondent's device type (desktop/tablet vs. mobile device) so that text and visual elements would be appropriately placed on the screen to ensure an optimal survey-taking experience.

- The NLD1 Survey began with a screening section that assessed panelists’ eligibility (based on smoking status and possibly region/gender/age-based quotas.

- Consent screens provided information about the survey, time commitment, contact information for ethical concerns or survey-related concerns, and then the panelist was required to provide consent to complete the survey.

- Respondents were able to navigate back to previous questions to change a response.

- Respondents were able to stop the survey and login to finish at a later time without losing any data.

- Questions were primarily multiple choice format and included one question per page. Some questions had a check list or grid format, which was modified by the survey.
software depending on the device type that the respondent used (i.e., desktop vs. a mobile phone).

- There were 12 questions with the 'Other-specify' format, require respondents type open text responses.
- The survey contained encouragement screens.
- Respondents were required to submit their completed survey in order for their survey record to be considered ‘complete’.
- Item non-response was acceptable, provided that: the majority of questions were answered, ‘essential questions’ used for eligibility were answered, and the panelist has submitted their survey.
- The median length of the survey interview was 29.85 minutes for the valid complete records.

Table 3. Median survey interview length (minutes)

<table>
<thead>
<tr>
<th>Sample description</th>
<th>n</th>
<th>Median survey interview length (minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final valid completes</td>
<td>2067</td>
<td>29.85</td>
</tr>
<tr>
<td>Completes with speeders</td>
<td>2128</td>
<td>29.61</td>
</tr>
</tbody>
</table>

4.4 Assigning disposition codes

- Disposition codes were used to track the outcomes of survey respondents.
- Temporary Disposition Codes were applied to respondents who did not complete the survey within one session.
- Final dispositions codes were assigned to each record (see Section 6 Disposition Codes).
- Three types of disposition codes were used in the study: 1) disposition codes programmed into the survey script, 2) disposition codes entered by the survey firm, and 3) dispositions derived at the end of fieldwork (see Section 6 Disposition Codes).
- Each completed survey record was further sub-coded as being completed on a desktop/tablet device vs. a mobile device vs. being undefined (not possible to classify).

4.5 Study incentives

- Panelists were given standard compensation upon completion of the survey in the form of NIPoints, which can be used to purchase certain goods.
- Panelists between 18-25 years old received an additional compensation of 5 euros in NIPoints.
5 Quality Control

5.1 Fieldwork monitoring and progress reports

- At the beginning of fieldwork, the initial sample invitations were released carefully at deliberate intervals and survey activity was closely monitored to ensure that all aspects were working as intended. This method is termed a ‘soft launch’ and occurred from February 17 to 27, 2020.

- The ‘soft launch’ data were systematically reviewed by both Kantar Public and data analysts from the University of Waterloo. Reviewing the soft launch data allowed us to identify 13 variables which were being improperly filtered. These filter issues were corrected and we were able to fully launch the survey on February 28, 2020.

- Throughout fieldwork Kantar Public closely monitored survey activity and ensured a smooth implementation.

- Kantar Public provided the research team with weekly fieldwork reports and an analysis of next steps with respect to the survey recruitment strategy.

5.2 Survey completes vs. partial completes

- The definition of a “survey complete” is the survey record for a panelist who started the survey, completed the survey questions, perhaps endorsing “prefer not to answer” for a reasonable proportion of questions, and then chose to ‘submit the survey’ after the last survey question.

- Survey response data for partially completed survey records (defined as records for which the panelist started the survey but did not hit submit at the end of the survey) were not included in the final data set.

5.3 Data cleaning and topline frequencies

- After fieldwork was completed, Kantar Public cleaned the data and then transferred the cleaned data to Maastricht University who subsequently sent the data to the ITC Project over a secure Sendit link.

- ITC Project analysts completed further data cleaning, weights construction, and conducted initial descriptive analyses, including generating topline frequencies.

5.4 Translation review and verification

- Standard procedures at ITC include validating the translation against the fieldwork-version of the survey.
### 6 Disposition Codes

<table>
<thead>
<tr>
<th>DMC Code</th>
<th>Type*1</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>P-A1</td>
<td>P</td>
<td>Selected respondent completes the entire survey; maybe skipping or refusing to answer a few questions</td>
</tr>
<tr>
<td>P-B19</td>
<td>E</td>
<td>Respondent completed eligibility questions and was deemed to be eligible, then started to answer the survey but did not complete the survey</td>
</tr>
<tr>
<td>P-B90</td>
<td>S</td>
<td>Any other reason why interview was not completed, but eligibility was confirmed by respondent</td>
</tr>
<tr>
<td>P-C11.5</td>
<td>P</td>
<td>Respondent refuses, can't answer or doesn't know his/her cigarette smoking status; thus unknown if he/she is eligible</td>
</tr>
<tr>
<td>P-C13.1</td>
<td>P</td>
<td>Respondent quits survey before consent; thus unknown if he/she is eligible</td>
</tr>
<tr>
<td>P-C13.2</td>
<td>P</td>
<td>Respondent refuses at consent; thus unknown if he/she is eligible</td>
</tr>
<tr>
<td>P-C70</td>
<td>S</td>
<td>Withdrawal and/or unsubscribe</td>
</tr>
<tr>
<td>P-C72</td>
<td>E</td>
<td>Respondent never logged into system to start the survey (but there was no email bounce back/invalid)</td>
</tr>
<tr>
<td>P-C90</td>
<td>S</td>
<td>Other reason why unknown eligibility</td>
</tr>
<tr>
<td>P-D10</td>
<td>E</td>
<td>Respondent is out of the target population</td>
</tr>
<tr>
<td>P-D70</td>
<td>E</td>
<td>Respondent is too young (i.e., &lt; 18 years old)</td>
</tr>
<tr>
<td>P-D72</td>
<td>P</td>
<td>Respondent doesn't meet the eligibility criteria on smoking or tobacco use</td>
</tr>
<tr>
<td>P-D80</td>
<td>E</td>
<td>Quota full</td>
</tr>
<tr>
<td>P-D90</td>
<td>S</td>
<td>Any other reason why respondent is not eligible</td>
</tr>
</tbody>
</table>

**Notes:**

*1 Type of disposition codes:
- P = disposition code programmed into the script
- S = Dispositions to be entered by supervisor or other person responsible for fieldwork
- E = Dispositions to be derived at the end of fieldwork
- HNB = Heat no burn
## 7 Cooperation and Response Rates

<table>
<thead>
<tr>
<th>Description</th>
<th>Freq</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A – Interviewed</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total (interviewed)*7</td>
<td>2,128</td>
<td>48.8%</td>
</tr>
<tr>
<td><strong>B – Eligible, but not interviewed</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refusal/breaks off</td>
<td>86</td>
<td>2.0%</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Total (eligible but not interviewed)</td>
<td>86</td>
<td>2.0%</td>
</tr>
<tr>
<td><strong>C – Unknown if eligibility (not interviewed)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Logged into system to start survey (once or more)</td>
<td>311</td>
<td>7.1%</td>
</tr>
<tr>
<td>Estimated number of eligible and quota not full*1</td>
<td>263</td>
<td>6.0%</td>
</tr>
<tr>
<td>Estimated number of not eligible or quota full*2</td>
<td>48</td>
<td>1.1%</td>
</tr>
<tr>
<td>Never logged into system to start survey</td>
<td>1,438</td>
<td>32.9%</td>
</tr>
<tr>
<td>Estimated number of eligible and quota not full</td>
<td>1,217</td>
<td>27.9%</td>
</tr>
<tr>
<td>Estimated number of not eligible or quota full</td>
<td>221</td>
<td>5.1%</td>
</tr>
<tr>
<td>Total (unknown if eligible)</td>
<td>1,749</td>
<td>40.1%</td>
</tr>
<tr>
<td><strong>D – Not eligible</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Out of sample</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Respondent is not eligible</td>
<td>402</td>
<td>9.2%</td>
</tr>
<tr>
<td>Quota full</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Total (not eligible)</td>
<td>402</td>
<td>9.2%</td>
</tr>
<tr>
<td><strong>Total sample with final disposition</strong></td>
<td>4,365</td>
<td>100%</td>
</tr>
</tbody>
</table>

| Estimated eligibility rate*3                                               | 84.6%|
| Estimated proportion for which quota was full*4                            | 0.0% |
| Response rate*5,*7                                                         | 57.6%|
| Cooperation rate*6,*7                                                      | 96.1%|

Notes:

*1 Estimated number of respondents that would have been eligible and for which the corresponding quota would not have been full

Formula: row 18 x row 35 x (1 - row 36), rounded to the nearest integer

*2 Formula: row 18 - row 19

*3 Estimated proportion of individuals that were eligible (i.e., age 20 & older and meet smoking/tobacco use criteria)

Formula: 1 - row 28 / (row 10 + row 15 + row 28)
*4 Estimated proportion of individuals that would have been terminated because the corresponding quota was full

Formula: row 29 / (row 10 + row 15 + row 29)

*5 The response rate is the proportion of selected/contacted respondents who complete the survey; i.e., the number of eligible respondents who completed the survey divided by the estimated number of eligible respondents that were selected/contacted. In other words, the response rate accounts for the fact that numerous individuals could not be contacted or screened for eligibility, whereas the cooperation rate does not.

Formula: row 10 / (row 10 + row 15 + row 19 + row 22)

*6 The cooperation rate is the proportion of eligible respondents (i.e., those who have completed all eligibility questions and have been found to be eligible) who complete the survey.

Formula: row 10 / (row 10 + row 13)

The above formula for the cooperation rate is the same as the AAPOR COOP4 formula; see https://www.aapor.org/Standards-Ethics/Standard-Definitions-(1).aspx

*7 The total number of completed interviews (i.e., 2,128) includes some respondents that were then removed from the final dataset because they were deemed to be fraudulent/speeder

If those respondents were excluded from the above table, both the response rate and cooperation are would be slightly lower than their current values
# Appendix 1: Allocation (per region and by age and gender) of ITC Netherlands Survey web panel sample

## Fieldwork Update (25 – 55 year olds)

<table>
<thead>
<tr>
<th></th>
<th>25-39 Achieved</th>
<th>25-39 Quota</th>
<th>40-54 Achieved</th>
<th>40-54 Quota</th>
<th>55 &amp; older Achieved</th>
<th>55 &amp; older Quota</th>
<th>Total Achieved</th>
<th>Total Quota</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>West</td>
<td>159</td>
<td>130</td>
<td>121</td>
<td>119</td>
<td>128</td>
<td>126</td>
<td>408</td>
<td>375</td>
</tr>
<tr>
<td>North</td>
<td>49</td>
<td>32</td>
<td>39</td>
<td>33</td>
<td>30</td>
<td>27</td>
<td>118</td>
<td>92</td>
</tr>
<tr>
<td>East</td>
<td>87</td>
<td>58</td>
<td>74</td>
<td>65</td>
<td>55</td>
<td>52</td>
<td>216</td>
<td>175</td>
</tr>
<tr>
<td>South</td>
<td>101</td>
<td>55</td>
<td>68</td>
<td>57</td>
<td>60</td>
<td>58</td>
<td>229</td>
<td>170</td>
</tr>
<tr>
<td>Total</td>
<td>396</td>
<td>275</td>
<td>302</td>
<td>274</td>
<td>273</td>
<td>263</td>
<td>971</td>
<td>812</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>25-39 Achieved</th>
<th>25-39 Quota</th>
<th>40-54 Achieved</th>
<th>40-54 Quota</th>
<th>55 &amp; older Achieved</th>
<th>55 &amp; older Quota</th>
<th>Total Achieved</th>
<th>Total Quota</th>
</tr>
</thead>
<tbody>
<tr>
<td>Females</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>West</td>
<td>121</td>
<td>70</td>
<td>97</td>
<td>80</td>
<td>140</td>
<td>93</td>
<td>358</td>
<td>243</td>
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<tr>
<td>North</td>
<td>34</td>
<td>19</td>
<td>27</td>
<td>27</td>
<td>23</td>
<td>25</td>
<td>84</td>
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<tr>
<td>East</td>
<td>72</td>
<td>37</td>
<td>53</td>
<td>47</td>
<td>43</td>
<td>37</td>
<td>168</td>
<td>121</td>
</tr>
<tr>
<td>South</td>
<td>74</td>
<td>43</td>
<td>56</td>
<td>51</td>
<td>75</td>
<td>59</td>
<td>205</td>
<td>153</td>
</tr>
<tr>
<td>Total</td>
<td>301</td>
<td>169</td>
<td>233</td>
<td>205</td>
<td>281</td>
<td>214</td>
<td>815</td>
<td>588</td>
</tr>
<tr>
<td>Total 25 &amp; older</td>
<td>697</td>
<td>444</td>
<td>535</td>
<td>479</td>
<td>554</td>
<td>477</td>
<td>1786</td>
<td>1.4</td>
</tr>
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</table>

## Fieldwork Update (18-24 year olds)

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<thead>
<tr>
<th></th>
<th>Achieved</th>
<th>Quotas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td></td>
<td></td>
</tr>
<tr>
<td>West</td>
<td>70</td>
<td>79</td>
</tr>
<tr>
<td>North</td>
<td>25</td>
<td>27</td>
</tr>
<tr>
<td>East</td>
<td>39</td>
<td>49</td>
</tr>
<tr>
<td>South</td>
<td>54</td>
<td>41</td>
</tr>
<tr>
<td>Total</td>
<td>188</td>
<td>196</td>
</tr>
</tbody>
</table>

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Females</td>
<td></td>
<td></td>
</tr>
<tr>
<td>West</td>
<td>50</td>
<td>61</td>
</tr>
<tr>
<td>North</td>
<td>22</td>
<td>26</td>
</tr>
<tr>
<td>East</td>
<td>38</td>
<td>38</td>
</tr>
<tr>
<td>South</td>
<td>44</td>
<td>40</td>
</tr>
<tr>
<td>Total</td>
<td>154</td>
<td>165</td>
</tr>
<tr>
<td>Total 18-24</td>
<td>342</td>
<td>361</td>
</tr>
</tbody>
</table>
Appendix 2: ITC Netherlands Survey Email Templates

Invitation e-mail

Dear <name panel member>,

We would like to invite you for a study about <subject>.

We would like to invite <name>, the <age> old <man/woman>, to participate in this survey. If he wants to participate in this survey, please click on the following link:

[Click here to start the questionnaire]

The survey could be completed until <end date of study> at the latest. Answering the questions takes 10 minutes on average.

We thank you in advance for your participation. Kind regards,

Kantar

Pay attention! This invitation has been sent by an automated system. Kantar will not read a reply on this e-mail. If you have any questions or comments (for example about your NIPOints, technical problems or want to completely stop your participation in our studies), you could use the contact form on the Nipobase website. To log in to this site use your respondent number (39999998) and your password.

If you do not want to participate in this survey, please let us know in the first question of the questionnaire. Or ignore the e-mails and reminders without notifying us.

If you want to know more about how we process your data, we invite you to read Nipobase privacy policy.

© 1998 - 2019 Kantar
Dear <name panel member>,

We recently invited <name>, the <age> old <man/woman> for a study about <subject>. We would like to ask him to complete this questionnaire.

If he wants to participate in this survey, please click on the following link:

**Click here to start the questionnaire**

The survey could be completed until <end date of study> at the latest. Answering the questions takes 10 minutes on average.

We thank you in advance for your participation. Kind regards,

Kantar

Pay attention! This invitation has been sent by an automated system. Kantar will not read a reply on this e-mail. If you have any questions or comments (for example about your NIPOints, technical problems or want to completely stop your participation in our studies), you could use the contact form on the Nipobase website. To log in to this site use your respondent number (39999998) and your password.

If you do not want to participate in this survey, please let us know in the first question of the questionnaire. Or ignore the e-mails and reminders without notifying us.

If you want to know more about how we process your data, we invite you to read Nipobase privacy policy.

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Appendix 3: Wave 1 ITC Netherlands Survey Weights
Sampling Weights of the International Tobacco Control Netherlands (ITC NLD) Survey

C. Boudreau\textsuperscript{1,2} and M. Grey \textsuperscript{2,3}

This document describes the various cross-sectional weights for wave 1 of the ITC Netherlands Survey. It also provides some guidance on which set of weights should be used depending on the analysis being performed, as well as cautionary notes when analyzing ITC Netherlands data. These various weights computed for the ITC Netherlands Survey adjust for the oversampling of 18–24 years old smokers, sample mis-representation, non-response and other biases. It is thus essential to use weighted data, when preforming any analyses using ITC Netherlands data.

Contents

1 Wave 1 weights
   1.1 Cross-sectional sampling weights .......................................................... 1

2 Remarks and cautionary notes
   2.1 Inflation versus rescaled weights .............................................................. 2
   2.2 Covariates to include in statistical modelling .............................................. 3

A Appendix
   A.1 Benchmark/calibration figures ............................................................... 4
   A.2 Raking algorithm ................................................................................. 4
   A.3 Kantar Weights ................................................................................... 6

List of Tables

1 Cross-sectional sampling weights for wave 1 of the ITC Netherlands Survey ........ 2

1 Wave 1 weights

1.1 Cross-sectional sampling weights

A total of 2067 cigarette smokers were interviewed at wave 1 of the ITC Netherlands (NLD) Survey. To be eligible, a respondent must: a) have smoked at least 100 cigarettes in his/her lifetime, b) smoked cigarettes at least monthly, c) be 18 years of age or older, and d) be residing in one of the 12 provinces of Netherlands. Hence, respondents residing in the Caribbean Netherlands were not eligible.

\footnotesize
\textsuperscript{1}Dept. of Statistics & Actuarial Science, University of Waterloo, Waterloo, Ontario, Canada.
\textsuperscript{2}Data Management Core (DMC) – ITC Project, University of Waterloo.
\textsuperscript{3}Dept. of Psychology, University of Waterloo.
\textsuperscript{4}This document was created using \LaTeX, and last updated on Jul 14, 2020
Two sets of cross-sectional weights were computed at wave 1 of the ITC Netherlands Survey; see summary in table 1 and detailed description below. All sampling weights for the ITC Netherlands Survey were computed using the statistical software R (http://www.r-project.org). As mentioned at the beginning of this document, these weights adjust for the oversampling of 18–24 years old smokers, sample mis-representation, non-response and other biases. It is thus essential to use weighted data, when preforming any analyses using ITC Netherlands data.

<table>
<thead>
<tr>
<th>Weight</th>
<th>Variable Names</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wave 1 cross-sectional inflation weights for smokers</td>
<td>aWTS42100v</td>
</tr>
<tr>
<td>Rescaled wave 1 cross-sectional weights for smokers</td>
<td>aWTS42101v</td>
</tr>
</tbody>
</table>

Table 1: Cross-sectional sampling weights for wave 1 of the ITC Netherlands Survey

1- Variable aWTS42100v contains the wave 1 cross-sectional inflation weights for all 2067 respondents interviewed at wave 1. This total excludes the 61 respondents that were deemed to be fraudulent (also referred to as speeders in some documentation). These weights are designed to make these 2067 respondents representative of the adult (18 years and older) Dutch population of cigarette smokers at the time of wave 1 data collection. Recall that occasional smokers (those smoking less than monthly) were not eligible, and are thus not included in this population of cigarette smokers. Respondents were first divided based on on sex × age group (i.e., the cross-tab of sex and age), geographic region (i.e., the 4 NUTS-1 regions: West, North, East and South) and, for respondents ages 25 & older, education (low, moderate and high). Note that it was decided to only calibrate for those ages 25 & older, as a large proportion of those ages 18–24 are still in school. Data from the various sources, but mostly from the Gezondheidsenquête/Leefstijlmonitor1, were then used to obtain calibration/benchmark figures for each of these groups (e.g., estimated number of male smokers ages 18 to just before their 25th birthday). These figures and additional information are given in appendix A.1. A raking procedure (see appendix A.2) was then applied to calibrate the weights based on sex × age group, geographic region and education.

2- Variable aWTS42101v contains the rescaled wave 1 cross-sectional weights for all 2067 respondents. These are simply the wave 1 cross-sectional inflation weights (variable aWTS42100v) of those respondents rescaled to sum to sample size (i.e., n = 2067). As with the inflation weights, these weights are designed to make these 2067 respondents representative of the adult (18 years and older) Dutch population of cigarette smokers at the time of wave 1 data collection.

2 Remarks and cautionary notes

2.1 Inflation versus rescaled weights

A key reason for rescaling the weights is to facilitate joint analyses involving data from multiple ITC countries. Using prevalence figures from the 2019 Gezondheidsenquête/Leefstijlmonitor, there were about 3.1 million adult cigarette smokers in the Netherlands at the time of wave 1 data collection. Data

1The Gezondheidsenquête/Leefstijlmonitor (or the Health Survey/Lifestyle Monitor in English) is an annual survey conducted by the Centraal Bureau voor de Statistiek (Statistics Netherlands) in collaboration with Rijksinstituut voor Volksgezondheid en Milieu (RIVM; National Institute for Public Health and the Environment).
from the 2016 National Health Interview Survey (NHIS) was used to calibrate the weights of the US sample for wave 1 of the ITC Four Country Smoking and Vaping Survey (4CV) Survey, which was conducted in 2016. According to the 2016 NHIS, there were about 39.8 million adult cigarette smokers in the United States at the time of data collection. Hence, any joint analysis using data from ITC Netherlands and the US sample of the 4CV Survey will be dominated by the US if inflation weights are used.

On the other hand, the rescaled weight (variable \texttt{aWTS42101v}) sum to the sample size, as described above; and likewise for the 4CV Survey. Hence, if the rescaled weights are used, the US will have a very slightly greater impact on the results (e.g., the ITC Netherlands sample consists of 2067 cigarette smokers; whereas the 4CV sample of US cigarette smokers consists of 2327 respondents), but no country will dominate the analysis. In summary, rescaling the weights to sum to the sample size is a simple and efficient way to make countries with different population sizes comparable. This also holds true when comparing ITC Netherlands data to other ITC countries.

Last but not least, it should be mentioned that rescaling the weights will not affect the results when estimating population means and proportions/percentages, as well as when fitting various statistical models (e.g., logistic and linear regressions). However, the rescaled weights should not be used to estimate population totals (e.g., the total number of daily smokers or e-cigarette users).

### 2.2 Covariates to include in statistical modelling

As with other surveys, it is good practice to include the survey design variables and the variables used in the weight construction, when fitting statistical models (e.g, linear or logistic regression models) using ITC Netherlands data. Hence, we highly recommend that any statistical model includes age and gender as covariates. Though somewhat less essential, users should also strongly consider adding education to their statistical model(s). The geographic region should also be used as the stratification variable in the statistical software.
A Appendix

A.1 Benchmark/calibration figures

The benchmark/calibration figures used to compute the weights of the ITC Netherlands Survey are given below. For the sex/age calibration figures of the first table, smoking prevalence data from the 2018 Gezondheidsenquête/Leefstijlmonitor was combined with population estimates (as of Jan 1, 2019) from the Centraal Bureau voor de Statistiek (CBS; Statistics Netherlands). The Gezondheidsenquête/Leefstijlmonitor (or the Health Survey/Lifestyle Monitor in English) is an annual survey conducted by the CBS in collaboration with Rijksinstituut voor Volksgezondheid en Milieu (RIVM; National Institute for Public Health and the Environment). The same approach was used to obtain the calibration figures for education, with the exception that smoking prevalence data from the 2019 Gezondheidsenquête/Leefstijlmonitor was used instead of the 2018 figures. Unfortunately, those updated 2019 figures could not be used for sex/age, because 18–29 were combined into a single group that year, which was incompatible with our oversampling of the 18–24 age group. Lastly, 2016 figures were used for the geographic figures of the third table. This was required because CBS no longer publish geographic data due to new privacy laws.

<table>
<thead>
<tr>
<th>Sex</th>
<th>Age</th>
<th>PR†</th>
<th># Smokers</th>
</tr>
</thead>
<tbody>
<tr>
<td>male</td>
<td>18, 25</td>
<td>30.1</td>
<td>231,785</td>
</tr>
<tr>
<td></td>
<td>25, 40</td>
<td>33.2</td>
<td>540,888</td>
</tr>
<tr>
<td></td>
<td>40, 55</td>
<td>26.0</td>
<td>459,937</td>
</tr>
<tr>
<td></td>
<td>55, 100</td>
<td>19.6</td>
<td>527,810</td>
</tr>
<tr>
<td>female</td>
<td>18, 25</td>
<td>28.1</td>
<td>209,052</td>
</tr>
<tr>
<td></td>
<td>25, 40</td>
<td>21.1</td>
<td>337,786</td>
</tr>
<tr>
<td></td>
<td>40, 55</td>
<td>21.5</td>
<td>380,330</td>
</tr>
<tr>
<td></td>
<td>55, 100</td>
<td>14.4</td>
<td>424,723</td>
</tr>
</tbody>
</table>

† PR = prevalence

<table>
<thead>
<tr>
<th>Education</th>
<th>PR†</th>
<th># Smokers‡</th>
</tr>
</thead>
<tbody>
<tr>
<td>low</td>
<td>25.7</td>
<td>928,926</td>
</tr>
<tr>
<td>moderate</td>
<td>24.0</td>
<td>1,129,991</td>
</tr>
<tr>
<td>high</td>
<td>13.8</td>
<td>612,557</td>
</tr>
</tbody>
</table>

† PR = prevalence
‡ # Smokers ages 25 & older

<table>
<thead>
<tr>
<th>Region†</th>
<th>PR†</th>
<th># Smokers‡</th>
</tr>
</thead>
<tbody>
<tr>
<td>West</td>
<td>21.2</td>
<td>1,448,076</td>
</tr>
<tr>
<td>North</td>
<td>22.5</td>
<td>359,422</td>
</tr>
<tr>
<td>East</td>
<td>19.3</td>
<td>644,461</td>
</tr>
<tr>
<td>South</td>
<td>19.4</td>
<td>660,352</td>
</tr>
</tbody>
</table>

† PR = prevalence
‡ NUTS-1 regions

A.2 Raking algorithm

This section details the raking algorithm used to calibrate the wave 1 cross-sectional inflation weights (i.e., variable aWTS42100v) to the benchmark figures of section A.1.
Step 1: Let $w_i^{(0)}$ be the start weight of the $i^{th}$ respondent. If this is the very first iteration of the raking algorithm, then $w_i^{(0)}$ is the weight provided by Kantar TNS-NIPO (see appendix A.3); otherwise, $w_i^{(0)} = w_i^{(3)}$, as computed in step 3 below.

The $w_i^{(0)}$ weights are calibrated to the sex $\times$ age groups benchmark figures of the first table of section A.1. To this end, the respondents were divided into the 8 sex/age cells of that table. For respondents in cell $k$ $(k = 1, \ldots, 8)$, this calibration/post-stratification adjustment consists in multiplying their $w_i^{(0)}$ weights by $\hat{N}_k/t_k$ to produce calibrated $w_i^{(1)}$ weights. These $w_i^{(1)}$ weights are such that their sum over all respondents in cell $k$ is equal to $\hat{N}_k$, the estimated number of smokers in that cell. Let $k$ be the cell to which the $i^{th}$ respondent belongs to, the $w_i^{(1)}$ weight of that respondent is given by

$$w_i^{(1)} = w_i^{(0)} \times \frac{\hat{N}_k}{t_k} = w_i^{(0)} \times \sum_{i \in C_k} w_i^{(0)}$$

where $\hat{N}_1, \ldots, \hat{N}_8$ are given in column 4 of the first table of section A.1 and $C_k$ is the set of all respondents in cell $k$.

Step 2: Using the same post-stratification technique described in step 1, the $w_i^{(1)}$ weights of respondents ages 25 & older were then calibrated to the educational grouping benchmark figures of the second table of section A.1. The $w_i^{(1)}$ weights of respondents in cell $\ell$ $(\ell = 1, \ldots, 3)$ were then multiply by a factor, $\hat{N}_\ell^{(2)}/t_\ell^{(2)}$, to produce calibrated $w_i^{(2)}$ weights. Let $\ell$ be the cell to which the $i^{th}$ respondent belongs to, the $w_i^{(2)}$ weight of that respondent is given by

$$w_i^{(2)} = w_i^{(1)} \times \frac{\hat{N}_\ell^{(2)}}{t_\ell^{(2)}} = w_i^{(1)} \times \sum_{i \in C_\ell^{(2)}} w_i^{(1)}$$

where $\hat{N}_1^{(2)}, \ldots, \hat{N}_3^{(2)}$ are given in column 3 of the second table of section A.1 and $C_\ell^{(2)}$ is the set of all respondents in cell $\ell$.

For respondents ages $< 25$, $w_i^{(2)} = w_i^{(1)}$.

It is important to recognize that this second calibration partially destroys the calibration done in step 1; in other words, we no longer necessary have that

$$\sum_{i \in C_k} w_i^{(2)} = \hat{N}_k \quad \text{for } k = 1, \ldots, 8$$

where $C_k$ and $\hat{N}_k$ were defined in step 1 above. Because of this, step 1 will need to be repeated (most likely multiple times) after calibrating to the other benchmark figures of section A.1; see step 4 below.

Step 3: The $w_i^{(2)}$ weights were then calibrated to the 4 geographic benchmark figures of the third table of section A.1. This was done using the same post-stratification technique as detailed above, and yielded the $w_i^{(3)}$ weights. As in step 2, this third calibration partially destroys the calibration done in steps 1 and 2, and those two steps will need to be repeated; see step 4 below.
Step 4: Repeat steps 1–3 until convergence; that is until,

\[ \sum_{i \in C_k} w_i^{(3)} = \hat{N}_k \text{ for } k = 1, \ldots, 8 \]

\[ \sum_{i \in C^{(2)}_\ell} w_i^{(3)} = \hat{N}^{(2)}_\ell \text{ for } \ell = 1, \ldots, 3 \]

and likewise for the calibrations on geographic region (step 3). In other words, repeating steps 1–3 until convergence ensures that the weights are calibrated to all of the benchmark figures of section A.1.

### A.3 Kantar Weights

Kantar TNS-NIPO, the survey firm who conducted the ITC Netherlands fieldwork, provided sampling weights. As mentioned in appendix A.2, we used those weights as the starting values for our raking algorithm. These weights were calibrated on sex and age groups using smoking prevalence figures from the 2018 Gezondheidsenquête/Leefstijlmonitor. This was done using a Random Iterative Method (RIM) weighting algorithm, which is essentially the same as our raking algorithm. However, those weights were not calibrated on education nor geographic regions. We wanted to reduce biases with respect to education and geographic regions, as well as gain precision by calibrating on sex \times age (as opposed to sex and age separately). It was thus decided to use the Kantar TNS-NIPO weights as the starting values in our weight computation (see section 1.1 and appendix A.2), which improved them by incorporating these factors.