



ITC Bangladesh Survey

Wave 4 Technical Report

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Preface

This report documents the Wave 4 of the International Tobacco Control Policy Evaluation Survey carried out in Bangladesh. The Wave 4 was conducted from October 2014 to April 15, 2015, approximately 28 months after the Wave 3 was conducted.

For the most part, the format of this report is similar to the Wave 3 technical report. However, there are a number of changes to some of the content and methods of Wave 3:

- a) The Wave 3 respondents from the national probability sample were recontacted to participate in the Wave 4 survey whenever possible. The first priority was given to replenish the lost Wave 3 respondents from the unused households in the Wave 1 sampling list;
- b) In case there were not enough unused households in the Wave 1 sample list, the Wave 2 or Wave 3 dropouts of the national probability sample were to be recontacted;
- c) In case there were neither enough replenishments from the Wave 1 sampling list nor availability of recontact respondents from those not present in Wave 3, there was the possibility of using the Wave 3 sampling list to replenish the lost Wave 3 respondents, or carrying out further enumeration; in the end, these alternatives were not necessary;
- d) The purposive sample, including tribal populations (Garo and Chakma), and a village selected to cover one land port in which cross-border trades take place frequently, did not join the Wave 4 survey.

This report also presents the weight calculations for Wave 4 respondents.

1. Introduction

1.1 Background

The International Tobacco Control (ITC) Project is a multi-country prospective cohort study designed to measure the psychosocial and behavioural impact of key policies of the World Health Organization (WHO) Framework Convention on Tobacco Control (FCTC).

Bangladesh was the first country to sign the FCTC on June 16 2003 and ratified it on May 10, 2004. The ratification was made concrete with the passage of the Tobacco Control Act (TCA) on March 15, 2005. Under this Act, the following regulations are enforced as per a supplementary Gazette notification of the Government of Bangladesh dated May 30, 2006:

- (i) It is prohibited to smoke in public places and transports, except at designated smoking areas;
- (ii) The advertising of tobacco products on print and electronic media, email, internet, or any other written or printed or spoken form, is banned;
- (iii) Consumption of tobacco products cannot be encouraged through charity, prizes, scholarships or sponsorships of sport activities;
- (iv) Automatic vending machines for selling tobacco products are not allowed;
- (v) Effective since 1 September 2006, a warning label has to be printed on a minimum of 30% area of the packets of tobacco products, clearly stating that smoking causes death, stroke, heart disease, lung cancer, breathing or other health problems. It should warn against any of these ailments caused by smoking.

On April 29, 2013, the National Assembly of Bangladesh passed the Tobacco Control Law Amendment Bill 9. The TCA amendment has the following changes:

- (i) Smokeless tobacco has been brought under the definition of “Tobacco”;
- (ii) Restaurants and indoor workplaces have been included among the public places that are to be completely smoke-free;
- (iii) Advertisements at points of sale are not allowed and “corporate social responsibility” activities are restricted. Anti-tobacco messages are needed if tobacco use is included in a movie;
- (iv) Sales of tobacco to and by minors are not allowed;
- (v) Graphic health warnings shall be printed on tobacco packs that cover at least 50% of each principal surface area. Misleading descriptors such as “light”, “mild” and “low tar”, are not allowed.

On March 12, 2015, the Bangladesh government published the implementation rules of the 2013 TCA amendment and subsequently the 2013 TCA amendment came into effect. However, tobacco producers were granted a 12-month grace period before implementing the new health warning rule. After March 2016, tobacco producers were, however, required to print the graphic health warnings on the tobacco package.

To evaluate the effect of the FCTC, the ITC Project is conducting parallel prospective cohort surveys with adult smokers in 28 countries—(Canada, United States, United Kingdom, Australia, Ireland, Thailand, Malaysia, China, South Korea, New Zealand, Mexico, Uruguay, France,

Germany, The Netherlands, Brazil, Mauritius, Bangladesh, Bhutan, India, Kenya, Zambia, Spain, Romania, Greece, Hungary, Poland and Abu Dhabi – United Arab Emirates).

The ITC Bangladesh Wave 1 Survey was carried out from February to May 2009.

The ITC Bangladesh Wave 2 Survey was carried out from March to June 2010.

The ITC Bangladesh Wave 3 Survey was carried out from November 2011 to May 2012.

The ITC Bangladesh Wave 4 Survey was carried out from October 2014 to April 2015.

1.2 Main Objectives

The objectives of the ITC Bangladesh Survey are:

a. To examine the prevalence and patterns of tobacco use in Bangladesh.

The ITC Bangladesh Survey provides multidimensional estimates of prevalence and patterns of tobacco use among the Bangladeshi population. It describes the population's consumption patterns, quitting behaviour, as well as its knowledge, beliefs, and attitudes about tobacco use. Specifically, the survey investigates the population's shift from traditional tobacco products such as bidis and smokeless tobacco to cigarettes.

b. To examine the impact of specific tobacco control policies implemented in Bangladesh in course of the study period.

The ITC Bangladesh Survey evaluates the impact of tobacco control policies in the following areas of the FCTC:

- Health warning labels and package descriptors
- Smoke-free legislation
- Pricing and taxation of tobacco products, as well as the prevalence of compensatory behaviours that may offset the impact of taxation (e.g., cheaper purchasing options, smuggling)
- Education and support for cessation
- Tobacco advertising and promotion

This report provides a detailed picture of the current tobacco control policy landscape in Bangladesh, including cigarette smokers, bidi smokers, and non-smokers' beliefs, attitudes, and behaviours, following the passage of the TCA in 2005 and TCA Amendment in 2013. Of particular importance in Bangladesh is the linkage between tobacco control and the poverty of tobacco users.

c. To compare smoking behaviour and the impact of policies between Bangladesh and other ITC countries.

The ITC Project aims to provide an evidence base to guide policies enacted under the FCTC, and to systematically evaluate the effectiveness of these legislative efforts. All ITC Surveys are developed using the same conceptual framework and methods, and the survey questions are designed to be identical or functionally equivalent in order to allow strong comparisons across countries. The evaluation studies conducted from the ITC Surveys take advantage of natural environments created when an ITC country implements a policy: changes in policy-relevant variables in that country from pre- to post-policy survey waves are compared to other ITC countries where that policy has not changed. This research design provides high levels of internal validity, allowing more confident judgments regarding the possible causal impact of the policy.

d. To suggest changes to current government tobacco policies

Recommendations to strengthen the current tobacco policies are made based on existing and derived survey information. The aim is to optimise the effects of tobacco control policies with regard to situational and individual difference moderators: (a) demographic variables; (b) personality variables (e.g. time perspective); (c) environmental context (e.g. number of peers/family members who smoke); and (d) the individual's smoking history (e.g. past quit attempts, smoking intensity and quitting smoking).

1.3 Survey Design

The ITC Bangladesh Survey is a longitudinal cohort study. In other words, the respondents who participate in this survey will be re-contacted in the future to participate in follow-up surveys.

1.4 The Research Team

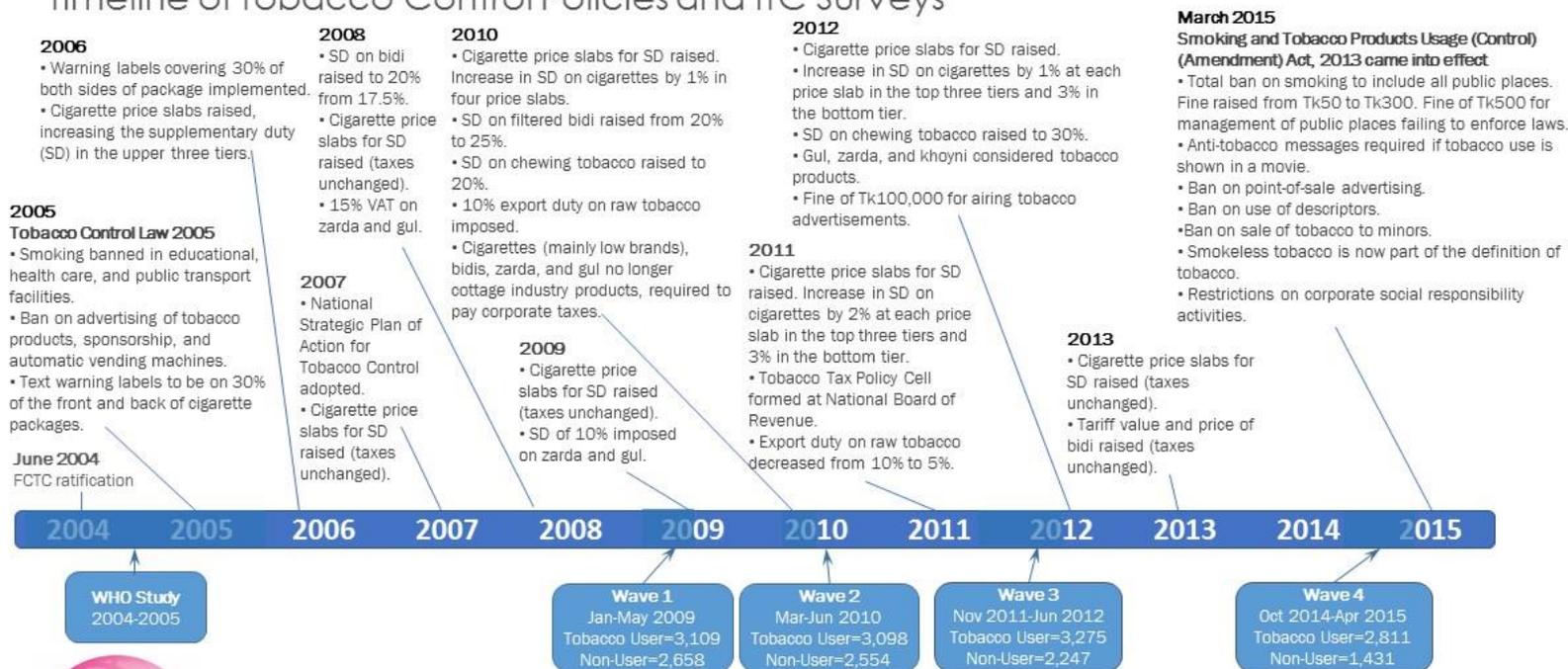
The ITC Bangladesh Survey is conducted by researchers at the Bureau of Economic Research (BER) and the Department of Economics at the University of Dhaka, with assistance from a consultant affiliated at the Boston University School of Medical Center, Duke Kunshan University and Duke University, and project staff at the University of Waterloo in Canada.

Figure 1: ITC Bangladesh Survey Timeline

BANGLADESH



Timeline of Tobacco Control Policies and ITC Surveys



Survey Mode: Face-to-Face (F2F)
Respondent Types: Cigarette, Bidi, Dual, Mixed, Smokeless, Non-User

Updated October 2015

2. Sampling Design

The ITC Bangladesh Survey is a nationally representative probability sample of tobacco users and non-users of tobacco selected through a multi-stage clustered sampling design (sampling with probability proportional to population size at the levels of district, Upazila/Thana, village/ward). For the details of the original sampling design see Chapter 6 of the Wave 1 technical report].

2.1 Wave 1 Samples

In Wave 1, the total sample of the ITC Bangladesh Survey consisted of two samples: a national sample (representing the broad national population of Bangladesh) and a floating population sample (representing the floating and urban poor population).

The probability sampling part of the national sample, which was designed to represent the broad national population of Bangladesh, was selected as part of the Wave 1 Survey in 2009. For this national sample, 23 districts out of the 64 districts covering Bangladesh were selected, and of the 23, 21 were selected randomly, with probability proportional to population size. All Wave 1 probability sample participated in the Wave 4 survey.

At the same time, certain parts of the national sample were selected purposively. Two districts were purposively selected to include the tribal populations (Garo and Chakma); as well, in one of the randomly selected districts, one with a single sampled Upazila, one village was randomly selected while the other was purposively selected to cover one land port in which cross-border trades take place frequently, making it potentially a significant outlet of illegal trade of tobacco products between Bangladesh and India. The probability part of the national sample is considered to include this district and the randomly selected village.

A total of 40 Upazilas from the 23 districts, and (usually) 2 villages (or wards) from each Upazila (Thana) were selected, again with probability proportional to size. Thus, a total of 80 villages/wards were selected for the main survey. One village included roughly 300-600 households. A maximum of 450 households could be enumerated in each village.

2.2 Wave 3 Enumeration

In Wave 3, to enhance the rigor and usefulness of the project, a second round of enumeration of the sample areas was conducted in order to determine the prevalence of smoked and smokeless tobacco use. The first round of enumeration was done between December 2008 and January 2009 at the beginning of the project. The follow-up enumeration allows us to again estimate, with great precision (equal to that of the Global Adult Tobacco Survey) the prevalence of tobacco use and its varieties (including dual use and mixed use). This provided a broad assessment of whether tobacco control policies are having any significant impact on the overall tobacco use in Bangladesh. The enumeration was administered simultaneously with the Wave 3 survey in the same area in order to economize on the travel allowance of the field investigators.

2.3 Wave 4 Sampling Plan

The Wave 4 sampling plan (see Figure 2) was to try to recontact as many Wave 3 respondents as possible from the national probability sample, even if they were tobacco users at Wave 3 who have quit using tobacco. There was a separate quitter survey for those respondents from Wave 3 who quit using tobacco since that time. All Wave 3 respondents from the purposive sample were excluded for the Wave 4 survey.

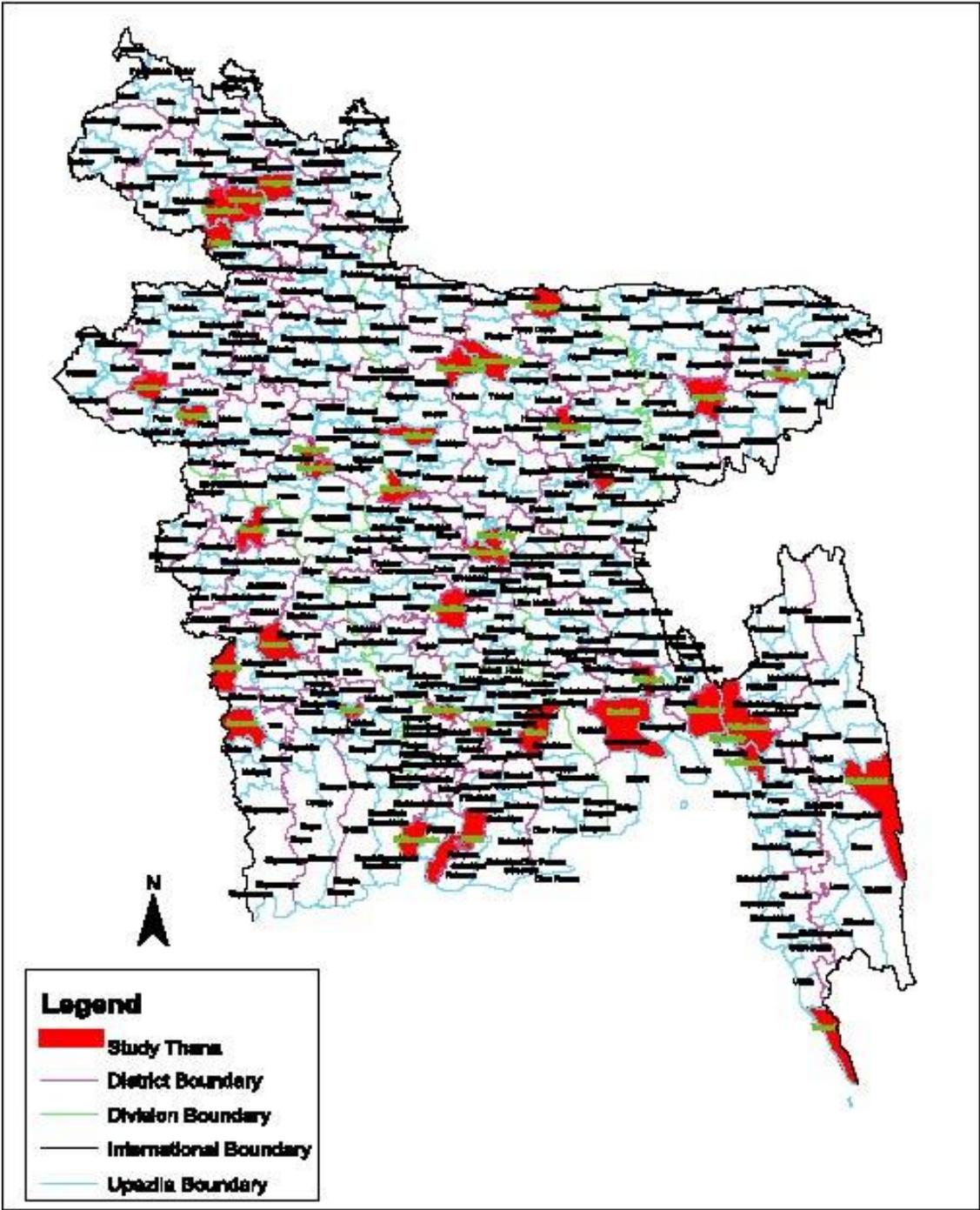
In a few areas, respondents from earlier waves who had not participated in Wave 3 were also recontacted, either in the recontact phase or after replenishment had begun.

At the replenishment phase, from each village/ward surveyed in the national probability sample (see Section 2.1), we selected 5 households from the Wave 1 enumerated sample that were not used for interviews in Waves 1, 2 or 3: three households with at least one smoker and two households with all non-smokers. Then from each household, one randomly selected non-user and all tobacco users were included on the replenishment sample list. The interviewers were asked to replenish from a new household following the smoking status in Wave 1. In case there were not sufficiently many households available from the Wave 1 sample or the interviewers ran out of replenishment sample due to refusal or unavailability of respondents, the interviewers tried to recontact the respondents from the probability sample who dropped out in Wave 2 or Wave 3.

2.4 Sample Size and Representation

The total interview sample in Wave 4 consisted of 4,246 respondents, including 3,627 recontact respondents and 619 respondents replenished at Wave 4. Of 3,627 recontact respondents, 3,244 were recruited in Wave 1, 153 in Wave 2, and 230 in Wave 3.

Figure 2: ITC Bangladesh Wave 4 Sampling Areas



3. Survey Process, Protocols and Fieldwork

3.1 Survey Process

The ITC Bangladesh Wave 4 Survey consisted of 9 main steps (see Appendix B). The interviewers:

1. Approached a household and introduced themselves;
2. Completed the Household Recontact Form (HRF) or Household Enumeration Form (HEF) Form A;
3. Administered the Household Survey to the head or key Informant;
4. Completed HRF/HEF Form B and determined whether each of the respondents was available for an interview;
5. Had each available respondent read the information letter and obtained the consent;
6. Administered a survey screener to each available respondent;
7. Completed the individual survey determined by the screening result;
8. Completed the individual outcome code in the HRF/HEF Form B;
9. Thanked the respondents and provided a token of appreciation to the household. For each household of respondents, the head of the household was presented with a token of appreciation of 200 Taka (approximately 2.60 USD) as remuneration for their time.

3.2 Recontact Participant Selection and Consent

Respondents from the probability sample who were interviewed in Wave 3 were recontacted in Wave 4. Interviewers were asked to reintroduce themselves to respondents using a pre-determined script.

Information and Consent

Once contact with a respondent from Wave 3 was re-established, the information letter was provided and the consent form was administered (See Appendix C).

3.3 Replenishment Participant Selection and Consent

Identifying Eligible Members

There were two different categories of eligible respondents in a replenishment household:

- Adult tobacco users;
- Adult tobacco non-users.

Selection of Household Members

Household members aged 15 years and older were sampled.

- From households without tobacco users, one non-user was randomly selected;
- From households with tobacco users, all available users were selected, and one non-user was randomly selected for interviewing.

Information and Consent

Once a respondent was selected, the information letter was provided and the consent form was administered (See Appendix C).

3.4 Household Recontact Form

The household recontact form was used specifically for the cohort sample to collect and update the household information. This form could only be used with recontact households – only those people who participated in any of the previous three waves of the ITC Bangladesh Survey could get a recontact form. All household recontact forms were pre-filled with the cohort sample information (see Appendix D).

3.5 Household Survey

In each selected household that contained eligible adult members, the identified key Informant or Head of Household was given a brief household (H) survey which collected information about the household including income, expenditure, and wealth index. The purpose of the household survey was to measure the socio-economic status of the household, as well as affordability/purchasing power of tobacco.

If the Key Informant/Head of Household was available at the first household visit, the H survey was administered before the individual household members were selected and interviewed. If not, an appointment was made to come back to complete the H Survey.

3.6 Main Questionnaire

3.6.1 Screeners

After completing the household survey and before administering the appropriate individual questionnaires, each selected respondent was given a survey screener. There were three individual screeners (See Appendix E):

- **Screener 1:** Replenishment (for a new respondent);
- **Screener 2:** Never User and Ex-User (for a recontact respondent who was a non-tobacco user);
- **Screener 3:** Smoked Tobacco Users, Smokeless Tobacco Users, or Quitter (for a recontact respondent who was either a tobacco user or who had quit using tobacco).

3.6.2 Individual Survey Types:

- **P Survey** : Replenishment Supplement (only for replenishment respondents);
- **M Survey***: Mixed Tobacco User who used both smokeless and smoked tobacco;
- **L Survey***: Smokeless Tobacco User;
- **C Survey***: Cigarette Smoker;
- **B Survey*** : Bidi Smoker;
- **D Survey ***: Dual Smoker;
- **N Survey***: Non-User;
- **Q Survey***: Quitter.

*(for both recontact and replenishment respondents)

3.6.3 Content of Survey

A summary of the survey questions is given below:

- Demographic questions (e.g., age, gender, religion, education, income, socio-economic status);
- Questions relevant to the policies of interest. These include measures of awareness (e.g., of warning labels, cessation assistance, advertising and promotion, prices) and, where relevant, of more extensive cognitive processing (e.g., thinking about health warnings);
- Moderator variables (e.g., time perspective, stress);
- Well-established questions assessing smoking behaviour;
- Other important psychosocial predictors of smoking behaviour (psychosocial mediating variables, e.g., normative beliefs, self-efficacy, intentions to quit);
- Questions enquiring about household income, expenditures, wealth, and tobacco cultivation.

3.6.3 Language of Survey

All surveys were translated into Bengali, which is the national language in Bangladesh. The locations of the survey determined the language version.

3.6.4 Length of the Interview

The survey was conducted by a face-to-face interview with the respondent. It took about an hour and half to complete the tobacco user surveys, and about 45 minutes to complete the tobacco non-user survey.

3.6.5 Collecting Empty Tobacco Packs

During the main survey, in some villages, empty tobacco packs and smokeless tobacco containers were collected from respondents who used tobacco products and subsequently handed to the field supervisor. Interviewers were provided with clear plastic bags and stickers for collecting empty cigarette bidi packs and smokeless tobacco containers from respondents.

3.7 Progress Report

3.7.1 Survey Translation

All the surveys for Wave 4 fieldwork were finalized by the first week of July 2014. Translation of the survey documents into Bengali started in July and was completed by the third week of August 2014. The checking and correction of the Bengali translation continued until the second week of September 2014. The printed copies of the questionnaires were ready for the survey teams by early October 2014.

3.7.2 Field Work Preparation

The Dhaka team prepared all the supporting survey materials (such as bags, T-shirts, pen, paper, official letters) for the survey teams by the second week of September 2014.

3.7.3 Interviewer Training Workshop

The Interviewer Training Workshop took place from August 16 to 19, 2014. A four-day long training workshop was conducted in Bengali by the Bangladesh team at the Bureau of Economic Research, Dhaka University. A total of 41 participants attended the training workshop. The first two-day training was classroom-based and focused on understanding the survey protocol, questions and procedure. A mock interview and a question-answer session were held after the training session. The trainees provided some constructive feedback towards the survey questions and the translation, leading to a few modifications on the Wave 4 Survey. The second two-day

training was outdoor and focused on pilot interview, the fieldwork management and the survey quality check issues.

Part of the indoor training program was video-documented because the time gap between the training and the start of the fieldwork was three weeks. A half day short training program was organized prior to sending the interviewers to the field so as to refresh their memories about the survey process and questions.

3.7.4 Survey Fieldwork

The fieldwork started on September 22, 2014. Due to the Eid festival, the survey was suspended for 9 days and resumed on October 12, 2014. Four survey teams consisting of four enumerators and one supervisor travelled to four different regions of Bangladesh, namely Chittagong, Barisal, Dhaka, and Rajshahi. The fifth team started the fieldwork in Dhaka (part of Dhaka region) on November 1, 2014. The fieldwork at the Sylhet region was shared by the Dhaka team and the Chittagong team.

The fieldwork at the Chittagong, Barisal, Rajshahi and Sylhet regions completed on 7 January 2015. However, the fieldwork in Dhaka did not finish until April 15, 2015 for two reasons. First, many of the cohort respondents were only available after hours in the weekdays or on the weekends and second, the remaining fieldwork was suspended for almost three months because the political situation became very unstable after the first week of January 2015.

The total numbers of respondents were 4,242, including 2,811 tobacco users (including cigarette smokers, bidi smokers, dual smokers, smokeless tobacco users, and mixed tobacco users) and 1,431 nonusers.

3.7.5 Questionnaire Checking

The Dhaka team started to receive completed questionnaires from the field in the last week of October 2014. Questionnaire checking started immediately after that. Fieldwork and questionnaire checking continued simultaneously and questionnaire checking was completed by April 2015.

3.7.6 Data Entry

The Dhaka team received the first version of the EpiData templates for the W4 surveys and household forms in the third week of October 2014. A few changes were made to the EpiData template of each survey and form based on feedback from the BD team. The EpiData templates were finalized in the third week of December 2014. The data entry started in January and ended in April 2015 and the entries were checked immediately.

3.7.7 Data Checking and Cleaning

Once duplicate data entry was completed by the in-country data clerks, the Wave 4 data files were transferred securely to the University of Waterloo using ITC's secure internal website, which can only be accessed by users who have an account on the website. As an extra precaution to maintain security, data files were encrypted prior to uploading them to the website.

Once the data were successfully transferred, the University of Waterloo data analyst commenced data cleaning. The data analyst conducted duplicate entry comparisons of the data files, using the SAS statistical software and identified discrepancies between the two data files. A list of these discrepancies were sent to the in-country data manager for verification and correction. The in-country data manager sent the corrections to the University of Waterloo data analyst for verification.

After discrepancies had been identified and corrections sent by the in-country data manager, the University of Waterloo data analyst conducted additional checks on the data to ensure that all skip patterns had been correctly followed and to ensure that the data did not contain invalid values. Respondent identifier codes were also checked thoroughly to ensure the data could be correctly linked within a survey wave and between waves over time. Any additional discrepancies that were identified were also sent back to the in-country data manager for verification. This back and forth communication between the University of Waterloo data analyst and the in-country data manager went on until the data were deemed clean by the University of Waterloo data analyst. Following data processing and cleaning, sampling weights were constructed for the dataset and the final, cleaned datasets were released to the country team, by posting them on the secure, internal ITC website.

3.7.8 Linking of Wave 4 Data to Wave 3 Data

The checked and processed Wave 4 data were linked to Wave 3, Wave 2, and Wave 1 data. The ID mismatches were resolved and the coding was completed for revisions in Wave 1-3 ID variables. The screener data from Wave 4 were checked for changes in smoking status of individual respondents between the two waves. This data were used in the dynamic longitudinal analysis of smoking behavior.

3.7.9 Data Delivery

Wave 4 data were delivered to the Data Management Centre (DMC) at the University of Waterloo in the second week of May 2015. A DMC data analyst processed the Wave 4 data which were released on 13 November 2015 and have been available for further analysis.

3.8 Contingencies in Field

The BD4 fieldwork, except in Dhaka, went smoothly until the first week in January 2015. The Field Coordinator successfully coordinated field responsibilities and supervised over telephone/mobile phone. The project manager made frequent visits to the field during the survey fieldwork period. In October 2014, the project manager accompanied the co-principal investigator to visit Chasha, Bhadra, and Shahajani in Dhaka. A few more of previous waves' respondents from those locations were successfully recontacted. In the same month, the project manager made another visit to Chanchra, Roypara, and Bijaynagar in Khulna to check on how the fieldwork was progressing and he also checked the quality data collected. Again, a few of previous waves' recontact respondents were successfully recontacted. To ensure quality data collection, he talked to some of the respondents face-to-face and made phone calls to some of other interviewees and their households. Though some of the respondents there could not be contacted, the project manager was pleased with overall fieldwork there. When the BD team was informed that many of the respondents could not be contacted in Chittagong, the field coordinator immediately travelled to the field and assisted the field work team in locating the missing respondents. Many were not available locally at the time. He collected the information about them, their new addresses and their mobile numbers, in order to track them down when working in those particular areas later. Later on fieldwork team successfully recontacted some of them.

To maintain the quality of data collection, BD team randomly picked households (20% for the first 2 weeks and later on 10% of the interviewed cases from each area) and made phone calls to the households interviewed. One interviewer in the Dhaka team was found to have been falsifying data. The interviewer was immediately terminated. Two other interviewers from the Chittagong team were also terminated due to the lack of commitment to the work given. After the first week, one interviewer from Barisal quit. When the fieldworkers conducted the fieldwork in October, it rained frequently; thus the BD team provided them with umbrellas and torch lights to allow them to continue the data collection. Since the start of the Wave 4 field work, the BD team took every

measure to avoid the unpleasant events. Except a few cases in Shibpasha in Sylhet and in Dhaka, interviewers were warmly welcome by the local communities.

In Dhaka, the BD team faced a new challenge of political violence near the end of Wave 4 fieldwork. During the unrest, unknown visitors like fieldworkers were unwelcome inside residences of the respondents. Therefore, for the sake of the safety of the interviewers, the fieldwork in Dhaka had to be suspended. By the end of March 2015, the political condition had improved substantially; therefore the city fieldwork resumed. In Lalbagh, the BD team had to employ more fieldworkers, males in particular, to conduct the fieldwork. The fieldworkers had to track the respondents down at their workplaces in the evenings because they were working nightshifts due to strikes and blockade during the daytime. By mid-April 2015, the BD team successfully completed the Wave 4 fieldwork.

4. Monitoring and Quality Control

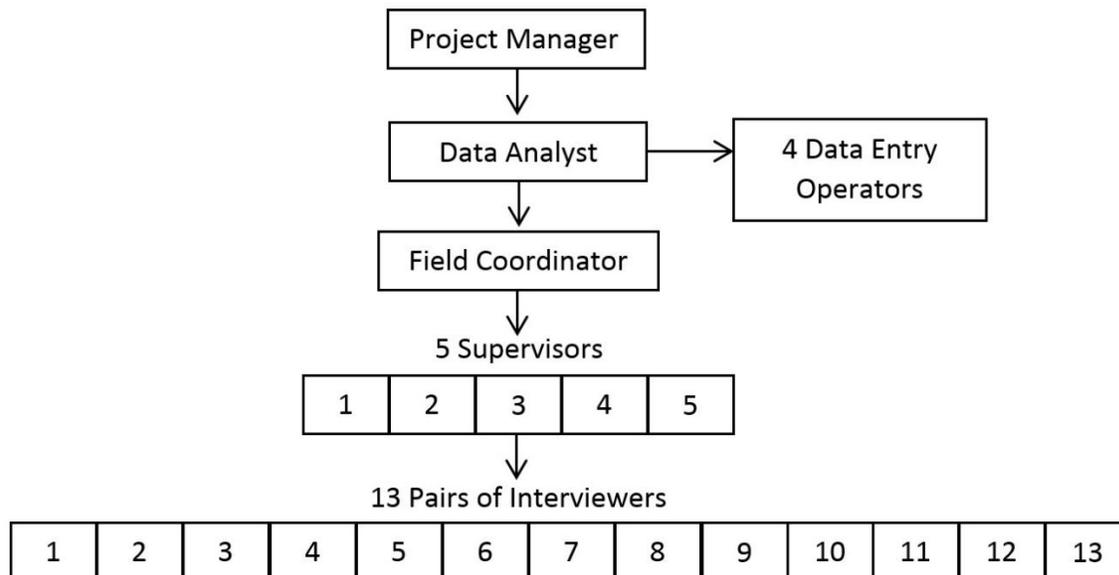
4.1 Management of Fieldwork Teams

The project fieldwork team consisted of five levels of management, including:

- **Project Manager:** responsible for overseeing all aspects of the survey fieldwork, as well as administrative duties and communicating with the ITC Bangladesh team in Waterloo and the Project Consultants.
- **Data Analyst:** responsible for collecting and checking all completed forms and overseeing the data entry process. In addition, four data entry operators were engaged to conduct the data entry, checking, cleaning, and compilation.
- **Field Coordinator:** duties included training the Field Supervisors and interviewers and assigning them to survey areas, obtaining supplies, managing all forms, and reporting fieldwork progress.
- **5 Field Supervisors:** responsible for contacting local authorities, making appointments for interviews, gathering packages of tobacco products, and monitoring the interviews. In Dhaka, the field coordinator worked as the field supervisor at needs.
- **26 Interviewers:** working in teams of two (interviewers were instructed to work in pairs at all times, for reasons of safety and efficiency): responsible for obtaining consent, interviewing respondents, and reporting to the field supervisor with any problems.

Outside the city of Dhaka, there were 20 fieldworkers in four teams, each consisting of 4 interviewers and one Field Supervisor. Each team was assigned one of the four zones namely, Dhaka, Chittagong, Barisal, and Rajshahi. The City of Dhaka fieldwork was covered by 10 interviewers. They also worked in teams, with two in each group. The supervisors usually supervised them.

Figure 3: Hierarchical Order of the ITC Bangladesh Field Staff.



4.2 Training Manuals

An English training manual about how to conduct the Wave 4 survey interview was written to train the survey interviewers before the survey fieldwork began. The English language enumeration manual and the training manual were translated into Bengali subsequently.

4.3 Interviewing Aids (see Appendix A)

- **Manikin Flashcards:** There were two questions that required the aid of a flashcard when the response options were read out, to save time and to facilitate interviewing. The flashcards included pictures of little man-like figures (manikins) with bipolar degrees of emotion (from negative to positive emotions). Researchers studying emotional responses have found the use of these manikins to be helpful to respondents in rating their own emotional responses.

4.4 Monitoring and Quality Assurance

To ensure the accuracy and quality of the ITC Bangladesh Survey, the survey fieldwork was monitored in several ways.

- **Field Supervision:** The Field Supervisor travelled with each interview team and provided regular feedback to the interviewers. The Field Supervisor ensured that the survey protocol and data collection standards were being closely followed. Field Supervisors could monitor interviews and were available to address any questions or concerns from the interviewers.
- **Identification Numbers:** Field Supervisors were instructed to ensure that household and respondent identification numbers were being properly filled out.

- **Checking for Completeness:** At the end of each day, interviewers were required to perform a self-check on the survey questionnaires they completed that day. Each interviewer reviewed the entire completed survey to determine whether any questions were missed or skipped. The Field Supervisor then collected all completed questionnaires from the interview teams under his/her supervision. Upon the completion of each survey in each village/ward, the Field Supervisors gave the completed and checked questionnaires to the Field Coordinator. The Field Coordinator conducted some quality checks on data collection and then gave the questionnaires to the data manager for data entry.
- **Weekly Meetings:** During the survey fieldwork period, the Field Coordinator held weekly meetings with all interviewers, the Data Manager and quality control staff members. Items on the agenda of these meetings included: i) summary of work for the past week; ii) identifying problems and finding solutions; and iii) arranging tasks for the coming week, etc. The Data Manager was responsible for taking minutes and keeping them on file.
- **Telephone Hotline:** A hotline on a mobile phone was used to communicate continuously with the field staff and to provide updates on fieldwork progress on a daily basis. The Field Supervisors were instructed to use the hotline mobile phone to report any difficulties to their Field Coordinator, so that the Field Coordinator could address it immediately.
- **Progress Reports:** The Project Manager provided regular progress reports on quotas and any problems or issues to the investigator teams.

4.5 Data Quality Control

Data entry proceeded in parallel with the field work. In order to ensure the quality of the data collection process, we used a multistage monitoring system:

- There were random visits by the Project Manager and the Field Coordinators to monitor the interviewers in the field.
- Enumerated households were randomly called to verify the information that enumerators filled in on the forms.
- Field Supervisors cross-checked all completed enumeration forms daily to ensure that they had been properly completed.
- After data entry, two data analysts continuously ran routine checks on the data sets, informing the Field Coordinator and Project Manager about any potential problems. When problems arose, the Project Manager consulted the investigators for input into making decisions about the best method(s) to correct errors. These methods could be communicated to all field staff using the hotline service. All the Field Supervisors possessed mobile phones and were instructed to report to the Field Coordinator and the data entry staff about any detected problems. As the survey proceeded, the feedback gathered from the data sets helped the enumerators in the field to learn from past omissions and to improve on the data collection process.

4.6 Handling Special Situations

Private interviews

Adult participants were interviewed alone whenever possible. If another person insisted on being present, the respondent needed to agree for the interview to proceed.

Proxy Interviews

A proxy interview is an interview conducted with another knowledgeable member of the household on behalf of the selected respondent. Proxy interviews were not allowed in the ITC Bangladesh Survey.

Respondent Not Available

If a respondent was unavailable, an appointment time (hard appointment) was rescheduled to interview that respondent.

Substitution

Only if a selected household was recorded to have the disposition “No one at home” or “Cannot answer” for all four visits over four different times, (weekday day-time, weekday night-time, weekend day-time and weekend night-time) could the household be replaced by a substitute, selected by the Field Supervisor.

Handling Multiple Respondents

An interviewer could not interview two adults at the same time. If there was a smoker and a non-smoker in the same household, the Non-Smoker survey was conducted after the smoker survey. If only the non-smoker respondent was present, the non-Smoker survey was postponed until after the smoker survey.

5. Disposition Codes and Retention Rates

5.1 Sample Size and Representation

The total sample consisted of 4,242 respondents, including 2,811 tobacco users and 1,431 non tobacco users. The following tables are the breakdown of the sample.

Table 1. Smoking status by gender (M= male/ F = female) within division

Division	Exclusively cigarettes		Exclusively bidi		Dual user		Mixed		Smokeless		Quitter		Non-user	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Barisal	142	3	14	0	7	0	30	3	46	75	27	6	38	95
Chittagong	274	4	26	5	7	1	48	4	30	87	49	15	62	207
Dhaka	429	6	40	2	40	0	56	4	51	126	81	17	125	365
Khulna	113	3	21	1	41	0	50	0	28	28	28	6	25	139
Rajshahi	241	4	68	7	35	1	41	1	39	55	60	6	58	267
Sylhet	68	0	12	0	12	0	16	0	8	37	19	7	8	42
All	1,267	20	181	15	142	2	241	12	202	408	264	57	316	1,115

Table 2. Smoking status by residence (U = urban/ R= rural) within division

Division	Exclusively cigarettes		Exclusively bidi		Dual user		Mixed		Smokeless		Quitter		Non-user	
	U	R	U	R	U	R	U	R	U	R	U	R	U	R
Barisal	28	117	1	13	0	7	2	31	7	114	5	28	23	110
Chittagong	0	278	0	31	0	8	0	52	0	117	0	64	0	269
Dhaka	317	118	0	42	5	35	17	43	66	111	52	46	306	184
Khulna	54	62	1	21	5	36	18	32	19	37	11	23	49	115
Rajshahi	141	104	18	57	14	22	21	21	43	51	29	37	170	155
Sylhet	16	52	2	10	3	9	5	11	10	35	8	18	10	40
All	556	731	22	174	27	117	63	190	145	465	105	216	558	873

Table 3. Retention rates (Wave 3 to 4) by tobacco use within division and wave of recruitment*

		Wave of Recruitment									
		Wave 1			Wave 2			Wave 3			Wave 4
		N Surveyed in Wave 3	Retained in Wave 4		N Surveyed in Wave 3	Retained in Wave 4		N Surveyed in Wave 3	Retained in Wave 4		Total Recruited
N	%		N	%		N	%				
Barisal	User*	307	277	90.2	4	4	100.0	24	21	87.5	40
	Non-user	120	111	92.5	4	3	75.0	15	13	86.7	14
Chittagong	User	474	382	80.6	16	14	87.5	33	24	72.7	94
	Non-user	259	222	85.7	14	8	57.1	26	20	76.9	51
Dhaka	User	714	565	79.1	63	48	76.2	50	31	62.0	179
	Non-user	404	318	78.7	37	26	70.3	66	40	60.6	122
Khulna	User	272	252	92.7	14	12	85.7	25	22	88.0	26
	Non-user	149	136	91.3	6	6	100.0	12	12	100.0	16
Rajshahi	User	499	479	96.0	11	11	100.0	21	17	81.0	20
	Non-user	321	317	98.8	9	9	100.0	24	24	100.0	6
Sylhet	User	164	149	90.9	12	12	100.0	4	4	100.0	12
	Non-user	46	41	89.1	1	1	100.0	3	2	66.7	6
All		3,729	3,249	87.1	191	154	80.6	303	230	75.9	586

Notes:

1. The total number of the recontact respondents surveyed in Wave 3 and retained in Wave 4 plus those newly recruited respondent in Wave 4 is 4,219. There were 23 dropouts who were surveyed in Wave 1 and/or Wave 2 but not surveyed in Wave 3, but recontacted in Wave 4.
2. *User includes user of exclusively cigarettes and exclusively bidi, dual user, mixed user, exclusively smokeless user and quitter

Table 4. Retention rates (Wave 3 to 4) by gender within division and wave of recruitment*

		Wave of Recruitment									
		Wave 1			Wave 2			Wave 3			Wave 4
		N Surveyed in Wave 3	Retained in Wave 4		N Surveyed in Wave 3	Retained in Wave 4		N Surveyed in Wave 3	Retained in Wave 4		Total Recruited
N	%		N	%		N	%				
Barisal	Male	273	245	89.7	4	4	100.	23	20	87.0	33
	Female	154	143	92.9	4	3	75.0	16	14	87.5	21
Chittagong	Male	452	365	80.8	17	11	64.7	33	23	69.7	93
	Female	281	239	85.1	13	11	84.6	26	21	80.8	52
Dhaka	Male	687	528	76.9	63	47	74.6	62	36	58.1	199
	Female	431	355	82.4	37	27	73.0	54	35	64.8	102
Khulna	Male	268	248	92.5	14	12	85.7	23	20	87.0	25
	Female	153	140	91.5	6	6	100.0	14	14	100.	17
Rajshahi	Male	511	493	96.5	10	10	100.	24	20	83.3	19
	Female	309	303	98.1	10	10	100.	21	21	100.	7
Sylhet	Male	133	121	91.0	7	7	100.	4	4	100.	9
	Female	77	69	89.6	6	6	100.	3	2	66.7	9
All		3,729	3,249	87.1	191	154	80.6	303	230	75.9	586

Note: The total number of the recontact respondents surveyed in Wave 3 and retained in Wave 4 plus those newly recruited respondent in Wave 4 is 4,219. There were 23 dropouts who were surveyed in Wave 1 and/or Wave 2 but not surveyed in Wave 3, but recontacted in Wave 4.

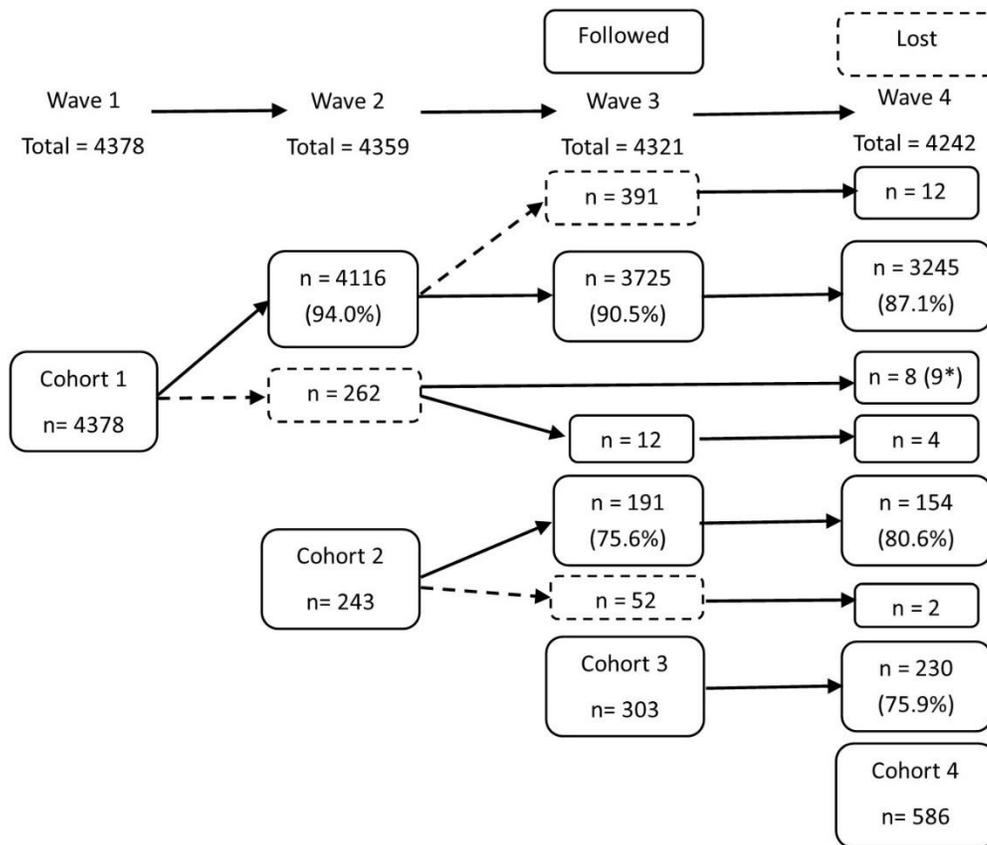
Table 5. Retention rates (Wave 3 to 4) by residence use within division and wave of recruitment*

		Wave of Recruitment									
		Wave 1			Wave 2			Wave 3			Wave 4
		N Surveyed in Wave 3	Retained in Wave 4		N Surveyed in Wave 3	Retained in Wave 4		N Surveyed in Wave 3	Retained in Wave 4		Total Recruited
N	%		N	%		N	%				
Division	Residence										
Barisal	Urban	60	54	90.0	1	0	0	3	2	66.7	10
	Rural	367	334	91.0	7	7	100.0	36	32	88.9	44
Chittagong	Urban	733	604	82.4	30	22	73.3	59	44	74.6	145
	Rural	582	399	68.6	76	51	67.1	100	56	56.0	246
Dhaka	Urban	536	484	90.3	24	23	95.8	16	15	93.8	55
	Rural	135	125	92.6	11	10	90.9	10	9	90.0	13
Khulna	Urban	286	263	92.0	9	8	88.9	27	25	92.6	29
	Rural	403	391	97.0	10	10	100.0	26	22	84.6	13
Rajshahi	Urban	417	405	97.1	10	10	100.0	19	19	100.0	13
	Rural	48	39	81.3	3	3	100.0	3	2	66.7	8
Sylhet	Urban	162	151	93.2	10	10	100.0	4	4	100.0	10
	Rural	3,729	3,249	87.1	191	154	80.6	303	230	75.9	586
All		3,729	60	54	90.0	1	0	0	3	2	66.7

Note: The total number of the recontact respondents surveyed in Wave 3 and retained in Wave 4 plus those newly recruited respondent in Wave 4 is 4,219. There were 23 dropouts who were surveyed in Wave 1 and/or Wave 2 but not surveyed in Wave 3, but recontacted in Wave 4.

The flowchart below shows the breakdown of the numbers of respondents (including the number of users and non-users who were successfully recontacted, lost, and replenished in Wave 4 respectively).

Figure 3 Number of respondents recontacted, lost or replenished in Wave 4



* One person was sampled in Wave 1 but not included at that time point because of missing tobacco use status. When this respondent was contacted again in Wave 4, all the required information (age, sex, tobacco use status) was available and so was included.

Notes:

1. The total number of respondents denotes the national probability sample and excludes the purposive sample surveyed Wave 1, 2 and 3.
2. Cohort 1: A probability sample of tobacco users and non-users recruited at Wave 1.
3. Cohort 2: A replenishment sample recruited at Wave 2.
4. Cohort 3: A replenishment sample recruited at Wave 3.
5. Cohort 4: A replenishment sample recruited at Wave 4.

6. Weight Construction

6.1 Wave 1 sampling design

The sample areas were selected through a multi-stage sampling design. For the national cohort sample, 23 districts¹ out of the 64 districts covering Bangladesh were selected, 21 of them randomly using probability proportional to population size. The other two districts were selected purposively to include tribal populations (Garo and Chakma). A total of 40 Upazilas from the 23 districts, and (usually) 2 villages from each Upazila were selected, and with one exception, this was done randomly with probability proportional to size at each stage. The exception was that in one of the randomly selected districts (Satkhira), one with a single randomly sampled Upazila, one village (Chaubaria) was randomly selected while the other (Bhomra) was purposively selected to cover one land port in which cross-border trades take place frequently, making it potentially a significant outlet of illegal trade of tobacco products between Bangladesh and India. (See footnote.) The probability part of the national sample is considered to include Satkhira district and the randomly selected village Chaubaria.

In addition, six urban slum areas from Dhaka area were selected to conduct the survey on the floating and urban poor population.

The interviewers collected data on housing condition of all the households (to a maximum of 450 households from each village) in 80 sample villages. Based on this census data, a CASHPOR Housing Index (CHI) was constructed to stratify the households in each village into tertiles according to their socio-economic status.

From each tertile, we attempted to select 10 households with smokers and 3 households with all non-smokers. Among the households with smokers, ideally 4 were with single smokers and 6 with multiple smokers. In cases where this combination could not be maintained due to lack of sufficient number of enumerated households, we gave more weight to the type available. For example, when we could not find at least 6 households with multiple smokers, we replaced with households with single smokers. The idea of sampling more multiple smoker households than single smoker households is to increase the number of smoker respondents selected from households.

From tertiles 1, 2, and 3, we kept the first 7, 7, and 6 households with smokers respectively in order of the household number to make the first approach for interview. In case of nonresponse or unavailability of the household, the first selection was replaced using the additional selection of 3, 3, and 4 households respectively from tertiles 1, 2 and 3. Thus from a total of 30 sample households with smokers, 20 were planned to be interviewed.

From tertiles 1, 2, and 3, we kept 2, 2, and 1 households without any smoker, again in order of the household number to make the first approach for interview. The remaining 1, 1, and 2

¹ Initially 22 districts were selected. But when we sent out enumerators to the field, they could not locate one area in Jessore district (District code 14 in the code list). So we replaced the initial selection of one area from Jessore with one adjacent area in Satkhira district. That added one district (coded 23 in the code list). This area has the advantage that it covers one of the possible land ports used for smuggling between India and Bangladesh. We expect to capture the illegal cross-border trade of tobacco products from this area in particular. So we can call this a purposive selection. The number of Upazilas and villages was, however, not altered.

households from tertiles 1, 2, and 3 respectively were used as replacement in case of non-response or unavailability. Thus from a total of 9 sample households without smokers, 5 were planned to be interviewed.

The households selected on the basis of socio-economic status and smoking status of household members constitute the total sample of 25 households from each village.

Thus at the end of the census, 2,000 households had been selected from 80 villages for the cohort survey. An additional 500 floating households were selected from the five slum areas in Dhaka city and enumerated.

From households with smokers, we selected all the available smokers and randomly selected one non-smoker for interview. From households without smokers, we randomly selected one non-smoker. Thus the total number of non-smoker respondents was fixed at 25, one from each sample household. The total number of smoker respondents varied from village to village depending on the smoking prevalence of that area and availability of respondents for interview. The respondents were selected from those aged 15 and above within each household.

Definitions of categories

The term “sampling category” refers to a category for which a quota is defined, and from which an eligible person is selected at random, e.g., non-smokers.

The term “refined category” refers to a category which a member is taken to represent. In the ITC Bangladesh Wave 1 Survey these are formed by crossing sampling categories with gender. An example of a refined category is female non-smokers.

Summary of Wave 1 weights computation

For each household enumerated in the census, we constructed a village-level household weight. We used this to construct a national level household weight *EHWT*. Then for each household with interviews, we constructed a national level household weight *IHWT*, consistent with the weights for enumerated households. For each individual, we constructed an individual weight *W1a* within his/her household. The product of interview household weight and individual within-household weight was then calibrated to sum to assumed population numbers in groups defined by a combination of geography and demographics, to produce Wave 1 inflation weights. Finally, the weights were rescaled within each sampling category (smoker and non-smoker) and “area” to sum to national sample sizes, for analytical use or in pooled analyses. The choices for “area” were tribal and border, where the first stage sample was purposive; probability sampling area outside Dhaka; Dhaka floating; Dhaka non-floating).

6.2 Wave 2 sampling design

Strong efforts were made to recontact all Wave 1 interview households and respondents. In the fixed population sample, where possible, Wave 1 respondents who dropped out were replaced from households in the same village, which had been enumerated at Wave 1, but were not interview households at Wave 1. New respondents were not taken from Wave 1 interviewed households.

Specifically, from each area, 5 households were selected from the enumerated sample that were not drawn in Wave 1: 3 with at least one smoker and 2 with all non-smokers. Then from each

household, one randomly selected non-smoker and all smokers were on the replenishment sample list. It was not possible to maintain the stratification by socio-economic status because it was not always feasible to find smoker respondents from each tertile. The interviewers were asked to replenish from a new household following the (individual dropout's) smoking status in Wave 1. In case they could not find any respondent from the replenishment sample list or the list ran out due to refusal, they asked for new sample and the survey coordinator randomly picked up new sample, selecting only as many (enumerated) households as were needed in the field. Thus in some areas, more than 5 households could be selected.

In one area (the Garo-tribal sample), the interviewers ran out of enumerated households for the replenishment sample. Thus, 4 households (id 40501-40504) were enumerated and then used for the survey.

In the fixed population sample, altogether 2017 Wave 1 households and 4,230 Wave 1 respondents were recontacted; and 253 respondents from 155 new households were added at Wave 2.

In the floating population sample, respondents from Wave 1 who could not be found were replaced by respondents from newly sampled households in the same areas.

In the floating population sample, altogether 145 Wave 1 households and 270 Wave 1 respondents were recontacted; and 927 respondents from 453 new households were added at Wave 2.

Note: A review of the Wave 2 data disclosed that some of the Wave 1 id codes had been incorrect. It was possible to make corrections to 219 id codes, and for these only the household member number had been incorrect. It was then necessary to correct age and gender for these cases. Because gender was used in the construction of the Wave 1 weights, the Wave 1 weights were recomputed. One continuing respondent whose data had not been entered at Wave 1 was added at this time.

Note: A number of recontacted non-smokers had become smokers by the time of Wave 2. For longitudinal purposes such respondents are considered baseline non-smokers. For cross-sectional purposes at Wave 2 they are considered to be smokers. (Wave 1 smokers who quit are considered to be quitters at Wave 2.)

Summary of Wave 2 weights computation

For households and respondents present at Waves 1 and 2 we constructed longitudinal Wave 1 – Wave 2 interview household weights, *and* longitudinal Wave 1 – Wave 2 individual inflation weights calibrated to sum to Wave 1 totals for gender and age-group within area. Corresponding rescaled analytic weights were also constructed. For all Wave 2 respondents we constructed cross-sectional Wave 2 interview household weights *IHWT2*, *adjusted* within-household individual weights *W1aX2*, and overall individual inflation weights, as well as rescaled analytic weights.

6.3 Wave 3 re-enumeration

Wave 3 was preceded by a full-scale enumeration like the one in Wave 1, primarily in the same villages. The number of households to be enumerated was capped at around 450. In many of the villages this again amounted to a census or near-census of households. Household enumeration weights were calculated using frame data from the 2011 census, rather than the 2001 census used at Wave 1.

6.4 Wave 3 sampling design

Strong efforts were made to recontact all Wave 2 interview households and respondents. In the fixed population sample, where possible, Wave 2 respondents who dropped out were replaced from households in the same village which had been enumerated at Wave 1, but were not interview households at Wave 1 or Wave 2. New respondents were not to be taken from Wave 1 or Wave 2 interviewed households. There were 5 individuals recruited in Wave 1, lost in Wave 2 and back again in Wave 3.

Specifically, from each village/ward, 5 households were selected from the Wave 1 enumerated sample that were not used in Wave 1 or Wave 2: 3 with at least one smoker and 2 with all non-smokers. Then from each household, one randomly selected non-smoker and all smokers were on the replenishment sample list. Again in Wave 3, it was not possible to maintain the stratification by socio-economic status because it is not always feasible to find smoker respondents from each tertile. The interviewers were asked to replenish from a new household following the (individual dropout's) smoking status in Wave 1. In case they could not find any respondent from the replenishment sample list or the list ran out due to refusal, they asked for new sample and the survey coordinator randomly picked up new sample, selecting only as many (enumerated) households as were needed in the field. Thus in some areas, more than 5 households could be selected. In a few sample areas, there was not enough smoker sample for full replenishment.

In the fixed population sample, altogether 2,061 Wave 2 (from cohorts #1 and #2) households and 4,155 Wave 2 respondents were re-contacted; and 307 respondents from 170 new households were added at Wave 3.

In the floating population sample, respondents from Wave 2 who could not be found were replaced by respondents from newly sampled households from the same areas.

In the floating population sample, no Wave 2 households were recontacted, and 1,055 respondents from 495 new households were added at Wave 3. As in earlier waves, the interviewers started randomly at one end of each area and continued enumerating at each household in a row until they met the target of the designated number of households from that area. The interviewers selected one non-smoker randomly and all smokers from each household.

Summary of Wave 3 weights computation

For households and respondents present at Waves 1, 2 and 3 we constructed longitudinal Wave 1 – Wave 2 – Wave 3 interview household and individual weights. For households and respondents present at Waves 2 and 3, we constructed longitudinal Wave 2–Wave 3 interview household and individual weights. For all Wave 3 respondents we constructed cross-sectional Wave 3 interview household weights $IHW3$, adjusted within-household weights $W1aX3$, and overall individual inflation weights, as well as rescaled analytic weights.

6.5 Wave 4 sampling design

In Wave 4 no attempt was made to sample from the floating population. Strong efforts were made to recontact all Wave 3 interview households and respondents in the fixed population sample, with the exception of the tribal areas Garo and Chakma and the border village Bhomra. In the rest of the national population sample, where possible, Wave 3 respondents who dropped out at Wave 4 were replaced from households in the same village which had been enumerated at Wave 1, but were not interview households at Wave 1, Wave 2, or Wave 3. New respondents were not to be taken from Wave 1, Wave 2, or Wave 3 interview households. There were 23 individuals recruited in an earlier wave, lost for Wave 3, and recontacted for Wave 4.

Specifically, from each village/ward, 5 households were selected from the Wave 1 enumerated sample that were not used in Wave 1, Wave 2, or Wave 3: 3 with at least one smoker and 2 with all non-smokers. Then from each household, one randomly selected non-smoker and all smokers were on the replenishment sample list. The interviewers were asked to replenish from a new household following the (individual dropout's) smoking status in Wave 3. In case they could not find any respondent from the replenishment sample list or the list ran out due to refusal, they asked for new sample and the survey coordinator randomly picked up new sample from the Wave 1 enumeration list, selecting only as many (enumerated) households as were needed in the field. Thus in some areas, more than 5 households could be selected. In case there were not sufficient number of households available for sampling or the interviewers ran out of replenishment sample due to refusal or unavailability of respondents, the interviewers were instructed to try to find the respondents who dropped out in W2 or W3.

In the fixed population sample, altogether 1,889 Wave 3 (from cohorts #1, #2 and #3) households and 3,633 Wave 3 respondents were re-contacted; and 586 respondents from 416 new households were added at Wave 4.

Summary of Wave 4 weights computation

For households and respondents present at Waves 1, 2, 3, and 4 we constructed longitudinal Wave 1 – Wave 2 – Wave 3 – Wave 4 interview household and individual weights. For households and respondents present at Waves 2, 3, and 4, we constructed longitudinal Wave 2–Wave 3–Wave 4 longitudinal weights. For households and respondents present at Waves 3 and 4 we constructed Wave 3–Wave 4 longitudinal weights. For all Wave 4 respondents we constructed cross-sectional Wave 4 interview household and individual weights.

6.6 Longitudinal Wave 1–Wave 2–Wave 3–Wave 4 weights

These longitudinal weights, for the national population sample with households and individuals present in all four waves, were based on the interviewed household weights *IHWT* from Wave 1. First, for those households which were still interview households in Wave 4, we rescaled the Wave 1 *IHWT* to sum to the total of the *IHWTs* for all Wave 1 households within each Upazila crossed with Wave 1 household smoking status. This produced for households present in all four waves a Wave 1 – Wave 2 – Wave 3 – Wave 4 weight *IHWT1234*.

For each respondent present in all three waves, we multiplied *IHWT1234* by the adjusted within-household weight *W1a* from Wave 1, producing a preliminary longitudinal weight *W1234WTT*. We then rescaled these *W1234WTT* weights to sum to the Wave 1 cross sectional weight

(*aDE62915v*) totals for age group (15-29, 30-44, 45+) and gender within district or Dhaka (non-floating) area. This produced the longitudinal inflation weights *W1234WT* for individuals.

The longitudinal inflation weight *W1234WT* is variable *dDE62921v* on the data set.

There is also a version of this weight rescaled to sum to individual sample size within area type, crossed with smoker/non-smoker status at recruitment. Area type means outside Dhaka or Dhaka non-floating. This is variable *dDE62951v* on the data set.

6.7 Longitudinal Wave 2–Wave 3–Wave 4 weights

These longitudinal weights, for the national population sample with households and individuals present in Waves 2, 3 and 4 were based on the interviewed household weights *IHWT2* from Wave 2. First, for those households which were still interview households in Wave 4, we rescaled the Wave 2 *IHWT2* to sum to the total of the *IHWT2*s at Wave 2 within each Upazila crossed with Wave 1 household smoking status. This produced for those households a Wave 2–Wave 3–Wave 4 weight *IHWT234*.

For each Wave 2, respondent still present in Wave 4 we multiplied *IHWT234* by the adjusted within-household weight *W1aX2* from Wave 2, producing a preliminary longitudinal weight *W234WTT*. We then rescaled these *W234WTT* weights to sum to the Wave 2 cross sectional weight (*bDE62915v*) totals for age group (15-29, 30-44, 45+) and gender within national probability sample area type (Dhaka non-floating, outside Dhaka). This produced the longitudinal inflation weights *W234WT* for individuals.

The longitudinal inflation weight *W234WT* is variable *dDE62923v* on the data set.

There is also an analytic version of this weight rescaled to sum to individual sample size within area type (Dhaka non-floating, outside Dhaka), crossed with smoker/non-smoker status at recruitment. This is variable *dDE62953v* on the data set.

6.8 Longitudinal Wave 3–Wave 4 weights

These longitudinal weights for the national population sample with households and individuals present in Waves 3 and 4 were based on the interviewed household weights *IHWT3* from Wave 3. First, for those households which were still interview households in Wave 4, we rescaled the Wave 3 *IHWT3* to sum to the total of the *IHWT3*s at Wave 3 within each Upazila crossed with Wave 1 household smoking status (or household smoking status at the time of its enumeration). This produced for those households a Wave 3–Wave 4 weight *IHWT34*.

For each Wave 3 respondent still present in Wave 4 we multiplied *IHWT34* by the adjusted within-household weight *W1aX3* from Wave 3, producing a preliminary longitudinal weight *W34WTT*. We then rescaled these *W34WTT* weights to sum to the Wave 3 cross sectional weight (*cDE62915v*) totals for age group (15-29, 30-44, 45+) and gender within district or Dhaka (non-floating) or floating population area. This produced the longitudinal inflation weights *W34WT* for individuals.

The longitudinal inflation weight *W34WT* is variable *dDE62925v* on the data set.

There is also an analytic version of this weight rescaled to sum to individual sample size within area type (Dhaka non-floating, outside Dhaka), crossed with smoker/non-smoker status at

recruitment. This is variable *dDE62955v* on the data set.

6.9 Wave 4 cross-sectional weights

We first constructed Wave 4 cross-sectional interview household weights *IHWT4*. In national population sample districts, for each interview household in a village, whether a Wave 1-3 household or a household newly recruited at Wave 4, we let *IHWT4* be the total value of *IHWT* from Wave 1 for households of the same village and household smoking status (stratum), divided by the number of interview households in that village-stratum in Wave 4.

Step 4I1: Each interviewed individual, in an old household or a new household, has been given a household level weight *W1X4*. This is interpreted as the number of people in the same household with the same refined category.

- for an adult male smoker or quitter, *W1X4* is the number of adult male smokers or quitters in the same household, divided by the number of adult male smokers or quitters interviewed in that household
- for an adult female smoker or quitter, *W1X4* is the number of adult female smokers or quitters in the same household, divided by the number of adult female smokers or quitters interviewed in that household
- for an adult male non-smoker, *W1X4* is the number of adult male non-smokers in the same household, divided by the number of adult male non-smokers interviewed in that household
- for an adult female non-smoker, *W1X4* is the number of adult female non-smokers in the same household, divided by the number of adult female non-smokers interviewed in that household
- for non-smoker households, *W1X4* is the number of adult non-smokers (regardless of sex) in the same household divided by the number of adult non-smokers interviewed in that household

For a majority of recontact respondents, *W1X4* should be the same as *W1X3* from Wave 3. Where a Wave 1-3 household has some Wave 4 interviews, but also at least one dropout, or at least one person who has changed from being a non-smoker to being a smoker, *W1X4* will be different from *W1X3* for some members of the household. Recontact respondents quitting smoking would not cause a change from *W1X3* to *W1X4*.

Note: *W1X4* as defined above does not necessarily sum within the household to the number of people aged 15 and over in the household, since there will typically be one refined category from which no one was interviewed (non-smoker, unrepresented sex).

We have capped the value of *W1X4* at 3 to reduce the potential variability of the weights. Step 4I1a below ensures that each individual still represents an approximately correct number at the Upazila level.

Step 4I1a: Each interviewed individual has been given an adjusted household level weight *W1aX4*. This adjustment is meant to ensure that prevalence estimates (of smoker/quitter) based on the final individual cross-sectional weights for Wave 4 will be approximately the average of prevalence of smokers based on the enumerations in Wave 1 and Wave 3, at the Upazila level. Although the individual cross-sectional weights should not be used for absolute prevalence estimates, they would be useful for modeling the dependence of tobacco use on other variables.

Consider an Upazila stratum to be defined by smoker/non-smoker (when enumerated) household within the Upazila.

Let $CAMS_{hUP}$, $CAFS_{hUP}$, $CAMNS_{hUP}$, $CAFNS_{hUP}$ be respectively the contributions to the average total estimates at Waves 1 and Wave 3 of adult male smokers, adult female smokers, adult male non-smokers, adult female non-smokers, from the enumeration in the Upazila stratum. For example,

$$CAMS_{hUP} = (\sum_{hUP} EHWT * n_{male,sm}) / 2$$

Where the sum is taken over enumerated households in the Upazila stratum in Wave 1 and Wave 3 and $n_{male,sm}$ is the (household- and wave-specific number of male smokers in the household and wave for which $EHWT$ is the weight.

Let $W1AMS_{hUP}$, $W1AFS_{hUP}$, $W1AMNS_{hUP}$, $W1AFNS_{hUP}$ be respectively the sums of $W1X4$ in all interviewed households for adult male smokers/quitters, adult female smokers/quitters, adult male non-smokers, adult female non-smokers, in the Upazila stratum h .

- for an adult male smoker/quitter, $W1aX4$ will be given by

$$W1aX4 = (CAMS_{hUP} \cdot W1X4 / W1AMS_{hUP}) / IHWT4$$

- similarly for the other refined categories

In case there is representation of only one gender of smokers or of non-smokers in the Upazila stratum, the relevant categories can be collapsed by gender for that Upazila stratum.

Step 4I2: Each interviewed individual has been given a preliminary national level weight $W4X4$.

For each individual, $W4X4$ will be thought of as the number of people in the national probability sample part of the country and same refined category represented by that individual.

The weight $W4X4$ is given by

$$W4X4 = IHWT4 \cdot W1aX4.$$

6.10 Calibration of individual weights at the national level

Step 4C1: Each interviewed individual has been given a calibrated national level weight

$$W6X4 = W4X4 \cdot N_{area,dem} / W4X4_{area,dem}$$

Where $N_{area,dem}$ is the known (from 2011 census) number of people in the same area with same gender (but regardless of tobacco use status) as the individual, and $W4X4_{area,dem}$

is the sum of the $W4X4$ weights for interviewed individuals in the same area, with same gender (regardless of tobacco use status).

The choices for area were again the Dhaka non-floating area and the outside Dhaka probability sample area.

The inflation weights $W6X4$ are what would be used for descriptive inference about the country's population. (The variable name for $W6X4$ is $dDE62915v$).

6.11 Rescaling

Finally, the weights have been rescaled within each sampling category (smoker/quitter and non-smoker) and area type (Dhaka non-floating, outside Dhaka) to sum to national sample sizes, for analytical use or in pooled analyses.

The formula used for the final rescaled (analytic) weights is as follows:

$$\text{Rescaled weight } RWTX4 = n_c \cdot W6X4 / (\sum_c W6X4),$$

Where n_c is the actual (i.e. unweighted) size of the country subsample for the sampling category, and $\sum_c W6X4$ denotes a sum over that subsample of the original weights.

(The variable name for the rescaled weight is $dDE62919v$.)

6.12 Split households

In Wave 4 there were several cases where multiple respondents from the same Wave 3 household filled out the household head form. These were investigated and found to be cases where the household had split between Wave 3 and Wave 4. For the longitudinal weights we considered the household to be intact, as it had been at recruitment. However, for the cross-sectional weights we took each of the components after the split to be a household.

7 Protocol for Collecting Price of Tobacco Products in Bangladesh

Aim: The Bangladesh Government increased taxes on tobacco products in the past few years. Therefore, the research team would like to obtain the current market price of each tobacco product sold in Bangladesh. The collection of price information of tobacco products in Bangladesh was part of a larger national level survey - The International Tobacco Control Bangladesh Survey.

Instructions for collecting the prices of cigarettes

1. Record **ALL** brand families AND brand varieties sold in the local store. Examples of brand families would be Capstain, Star, Pilot, Marlboro and Gold Leaf. Examples of brand varieties would be *Filter, White*.
2. Record the price for each brand and variety in that store.
3. Record the price separately for sales in packs and in sticks by asking the storekeeper. Do not divide the price per pack by the number of sticks in pack to derive the price per stick.
4. Ask the storekeeper to identify the 10 brands s/he sells most commonly. Mark it with a ✓ (check) next to the brand name.
5. In the column for the unit of measurement in packs, record if it is a pack of 10 or 20 sticks.

Instructions for collection the prices of bidis and smokeless tobacco

1. Record **ALL** brands of bidis and smokeless tobacco sold in the local store.
2. Record the price for each bidi brand and smokeless tobacco brand in that store.
3. Ask the storekeeper to identify the 10 brands s/he sells most commonly for bidis and smokeless tobacco. Mark it with an "X" next to the brand of bidis and smokeless tobacco.
4. In the column for the unit of measurement in mini-packs/containers for smokeless tobacco, record the weight of the mini pack or container. For example, a container of zarda can be big, medium or small size. So specify both size and weight, such as, *small (100gm)*. Use separate row for each size of the same brand. If the storekeeper reports the price of mini-packs of gul in dozens, you have to write *dozen (each mini-pack 10 gm)*.
5. In the column for unit of measurement in loose amount of smokeless tobacco, mention the weight in grams.

Script:

After entering the store, you should introduce yourself and the purpose of your visit.

You say:

"Assalamualaikum, my name is <>, and I am a member of the University of Dhaka."

(If you already know the person you may skip self-introduction)

You say:

"University of Dhaka is conducting an important national survey on tobacco use in Bangladesh. I am gathering information about the brands of cigarettes, bidis and smokeless tobacco available for sale in this ward/village. Participation is voluntary.

If you agree to take part, I would like to take a list of the cigarettes for sale in your store, their prices, and ask you which brands you sell the most. It should only take between 10 to 15 minutes. We will be providing you with 50 Taka as a small token of appreciation for your time.

I would like to assure you that the tobacco prices in your store are strictly confidential. Data from this research will not be destroyed but any details that could identify you or your store will be removed from the information collected. We will report price information based on the group of participating storekeepers. All price information will be kept strictly confidential and will not be

shared with any person or group that is not associated with this survey. Identifying information (which is not attached to the responses themselves) will be kept in secure locations here at the University of Dhaka and at the University of Waterloo, Canada, following security procedures that we employ for our surveys. The data will be held in secure electronic files on computers that have security certificates, are password protected, and can only be accessed by the research team. The main research team will report on the data, with no identifying information for various publications. Eventually, after two years, the data without names or personal information may be shared with other health researchers.

Would you be willing to let me record the tobacco product prices?"

If yes, collect the price information. After the collection of price information, you say:
"Thank you for all your help. I really appreciate it."

Provide the token of appreciation.

If no, thank the storekeeper and go to the next store.

Appendix A: Field Materials

Every Interviewer going into the field should have the following:

Field preparatory materials:

- Interviewer's scripts
- ID card
- Household address list with columns for checking off up to four visits, noting appointments
- Map of survey areas selected (where possible) locations of the households
- Pencil
- Blue pen and other stationery supplies
- Fieldwork manual

Field interview materials:

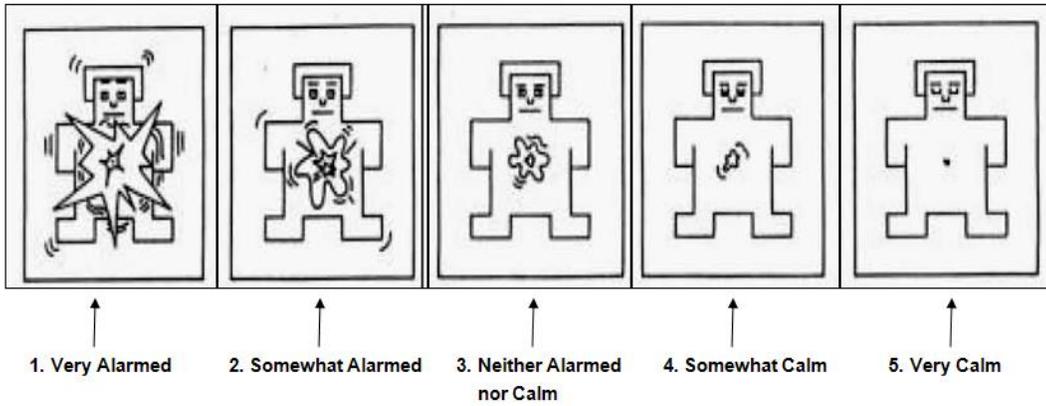
- Household Enumeration Forms
- Household Recontact Forms
- Household survey questionnaires
- Screeners
- Eight types of tobacco use survey questionnaires in Bengali
- Information Letters & Consent Forms
- Token of appreciation for households

Every Supervisor should have the following field materials:

- Maps of selected survey areas, where possible.
- List of recontacted households in each survey areas
- Made sure the screener label is properly applied to the screener before the field visit
- Extra screeners and survey questionnaires
- Extra stationery for interviewers
- Extra forms for interviewers – all household and individual surveys, household recontact/enumeration forms and consent forms
- Extra ink pads

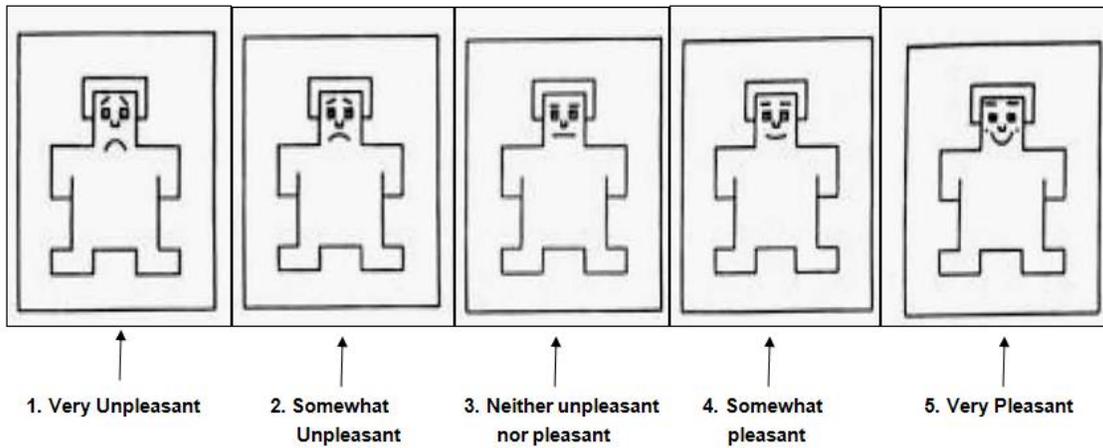
MANIKIN FLASHCARD 1

AROUSAL SCALE

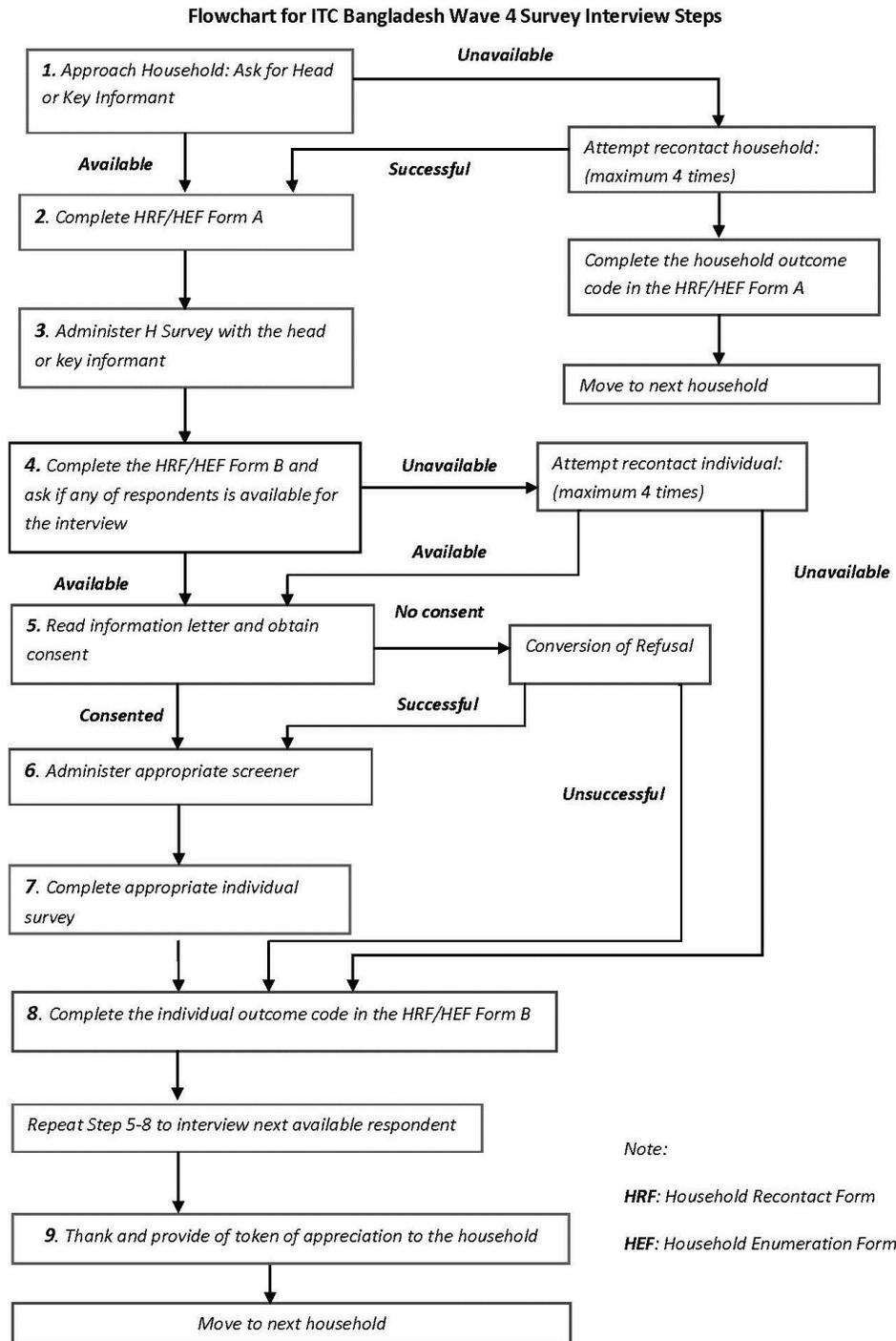


MANIKIN FLASHCARD 2

VALENCE SCALE



Appendix B: Flowchart for ITC Bangladesh Wave 4 Fieldwork Interview Steps



Appendix C: Survey Information Letter and Consent Form



RESPONDENT INFORMATION LETTER

Research Project: Tobacco Control Policy Evaluation in Bangladesh
Human Research Ethics Committee, University of Waterloo Clearance Number: ORE 19862
University of Dhaka, Ethics Clearance Number: BMRC/ERC/2013-2016/1729

What is this research about?

The aims of this research are: 1) to find out how many people in Bangladesh use tobacco—how many smoke and how many use smokeless tobacco, 2) to find out how the beliefs and opinions of tobacco users might be related to tobacco use and whether governmental policies and programs affect tobacco use, and 3) to find out how other events in Bangladesh—nationally or in your community—affect tobacco use. We will also examine how religion, culture, and ethnicity may affect smoking and smokeless tobacco use by comparing the views of Bangladeshi tobacco users to those of tobacco users from India, Southeast Asia, China, South Korea, and from western countries such as USA, Canada, UK, and Australia.

Who is conducting this research?

This research is led by a team of Dhaka University professors from the Department of Economics:

- Professor SM Ashiquzzaman, Project Leader and Principal Researcher
- Dr. Nigar Nargis, Principal Investigator
- Mr. AKM Ghulam Hussain, Co-Principal Investigator

The consultants for the project include:

- Professor Geoffrey Fong (Department of Psychology, University of Waterloo, Canada)
- Professor Mary Thompson (Department of Statistical and Actuarial Science, University of Waterloo, Canada)
- Dr. Abu SM Abdullah (Boston Medical Center, Boston University School of Medicine, USA)

What are we asking of you?

This research involves completing the survey interview (approximately 90 minutes for tobacco users and 60 minutes for non-users of tobacco) today. We plan to return every 12-18 months to do follow-up surveys because we are interested in how people's opinions and behaviours might change over time. Tobacco use includes smoking cigarettes, smoking bidis, and using smokeless tobacco (e.g. jorda, shadapata).

We would also like to collect empty cigarette, bidi and smokeless packs from you and members of your household who are tobacco users for the purpose of comparing with the packs collected from other parts of the country.

Involvement in this research is voluntary. You and/or any of your household members are free to withdraw at any time or may decline to answer any of the questions. You or any member of your

household may decline to participate or withdraw at any time without any impact on the token of appreciation that is provided. If you and/or any of your household members agree to participate in this research, we will provide your household with a token of appreciation for your time. Your household will be given a similar token of appreciation for each subsequent time that you agree to participate.

Confidentiality and Security of Data

All the information you provide is treated as strictly confidential, subject to legal requirements and limitations. Data from this research will not be destroyed, but any identifying information about you such as name and address will be removed so that your answers cannot be linked back to you.

The data will be held in secure electronic files at the University of Dhaka and at the University of Waterloo on computers that have security certificates, are password protected, and can only be accessed by the research team. Eventually, after two years, the data without names or personal information may be shared with other health researchers.

Concerns and Complaints

If you wish to discuss any questions about this research project, please contact:

AKM Ghulam Hussain, Assistant Professor, Department of Economics, University of Dhaka, Nilkhet, Dhaka 1000, Bangladesh. Phone: 8801815 04 22 91 (Cell)
E-mail: think2100@gmail.com;

If you wish to lodge a complaint concerning the manner in which this research is being conducted, please contact:

Professor Dr. Shafiquez Zaman, Director, Bureau of Economic Research, University of Dhaka, Nilkhet, Dhaka 1000, Bangladesh. Phone: 880 2 861 39 05
E-mail:Shafiquezaman55@yahoo.com

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee, Canada at the University of Waterloo, Canada. In the event you have any questions or concerns about your participation, please contact:

Dr. Maureen Nummelin, Director, Office of Research Ethics, University of Waterloo, 200 University Avenue West, Waterloo, Ontario, Canada, N2L 3G1 Phone: +1 519 888-4567 ext. 36005. E-mail: maureen.nummelin@uwaterloo.ca

RESPONDENT CONSENT FORM

Research Project: Tobacco Control Policy Evaluation in Bangladesh
Human Research Ethics Committee, University of Waterloo Clearance Number: ORE 19862
University of Dhaka, Ethics Clearance Number: BMRC/ERC/2013-2016/1729

I agree to take part in the above international research project conducted in Bangladesh by a research team based at the Bureau of Economic Research at the University of Dhaka. I have read the participant information sheet, which I will keep for my records. I understand that:

- This project is being conducted for research purposes.
- Participation in this research is voluntary and that I am free to withdraw from the research at any time or to withdraw any information previously supplied during the interview.
- Participation in this research involves completing a face-to-face interview today lasting approximately 90 minutes for tobacco users and 45 minutes for non- users of tobacco.
- I will be given a gift as a token of appreciation for my time.
- Only those people involved with this research will have access to any information I supply.
- All the information I provide is treated as strictly confidential.

I, _____ give my consent to take part in this research.
PRINT NAME

Signed:or **Right thumb print:**.....

Date:/...../.....

Witness Name:

Witness Signature:

Current address and contact details:

Village/Ward/Road/House:.....

Thana:..... Post Office:.....

District:..... Division:.....

Telephone:-Home: Work:

Cell:

Note: Please notify the research team using the postcard provided if there is a change in contact details above before the end of the study.

Appendix D Household Recontact Form

1. All ID codes of each recontact household in the Form A have been pre-filled in Form A (Page 1);
2. The name, gender and tobacco use status of each Wave 1 respondent in the recontact household has been pre-filled in the Form B (Page 3);

Page 1

INTERNATIONAL TOBACCO CONTROL POLICY SURVEY – BANGLADESH WAVE 4

Form completed:

SA1. Interviewer ID: -

FORM A: WAVE 4 HOUSEHOLD RECONTACT FORM

Contact Details (PRINT CLEARLY):

SA10. Name of Head of Household: _____

SA11. Address: _____

SA12. Post Office: _____

SA13. Name of Informant: _____

SA2. Ethnicity

SA3. Division

SA4. District

SA5. Thana/Upazila

SA6. Village/Ward

SA7. Household

SA8. Cohort/Float

SA9. Wave

SA14. Phone: Land

SA15. Phone: Cell

Name of Interviewer: _____

Signature: _____

Date:

VISITING RECORD – HOUSEHOLD LEVEL (FILL IN AFTER END OF INTERVIEW)

BD4-HHRF-1 02 02 **04 011** 2 4

1

No. of visit	Date	Time	Notes	Next Appointment	
				Date	Time
1					
2					
3					
4					

SA16. Final Household Outcome Code (circle one below):	
1. Could not find dwelling	7. No Answer –Survey Period Ends
2. Household moved, could not trace	8. Household Refusal
3. Household moved, out of range	9. Language Barrier
4. Threat to safety	10. Recontact prevented for other reasons (specify)*
5. No Contact-Weather Condition	11. Recontacted successfully
6. No Answer- 4 attempts	*specify other reason: _____

CONTACT PERSON: Name and address of someone who would be able to provide contact information at next survey if respondents move:
Name:
Address:

FORM B: HOUSEHOLD RECONTACT FORM

ID* at W3	NAME OF RESPONDENT**	Age	Sex M/F	Relationship to head at W4	Smoking Status*** at W3	Individual Outcome Code	New Address: Y/N (Record on next sheet)	Notes
737601					Q			

* ID number must be the same as the ID assigned in Wave 1, Wave 2 and/or Wave 3

**Name of respondent must be the same as in Wave 1, Wave 2 and/or Wave 3

***Indicate Smoking Status at Wave 3 (or most recent wave interviewed): : **C=Cigarette Smoker only, B=Bidi Smoker only, D=Dual Smoker of Cigarettes and Bidis, N=Non-Smoker, M=Mixed User of Smoked and Smokeless Tobacco, Q=Quitter, L=Smokeless User**

<u>Relationship to Head of Household Codes</u>				<u>Individual Outcome Codes</u>	
Head = 1	Brother = 7	Father = 13	Niece = 19	0.a No longer part of household, and out of range or untraceable 0.b Deceased 1 Missed (after 4 attempts) 2 Language Barrier 3 Health/Mentally Incapable	4 Proxy Refusal 5 Refusal 6 Incomplete (start, breakoff) 7 Complete 8 Away for the entire survey period
Spouse = 2	Sister = 8	Mother-in-law = 14	Other family relative = 20		
Son = 3	Brother-in-law = 9	Father-in-law = 15	Housekeeper = 21		
Son-in-law = 4	Sister-in-law = 10	Grandfather = 16	Non relative = 22		
Daughter = 5	Grandchild = 11	Grandmother = 17	Other (specify) = 23		
Daughter-in-law = 6	Mother = 12	Nephew = 18			

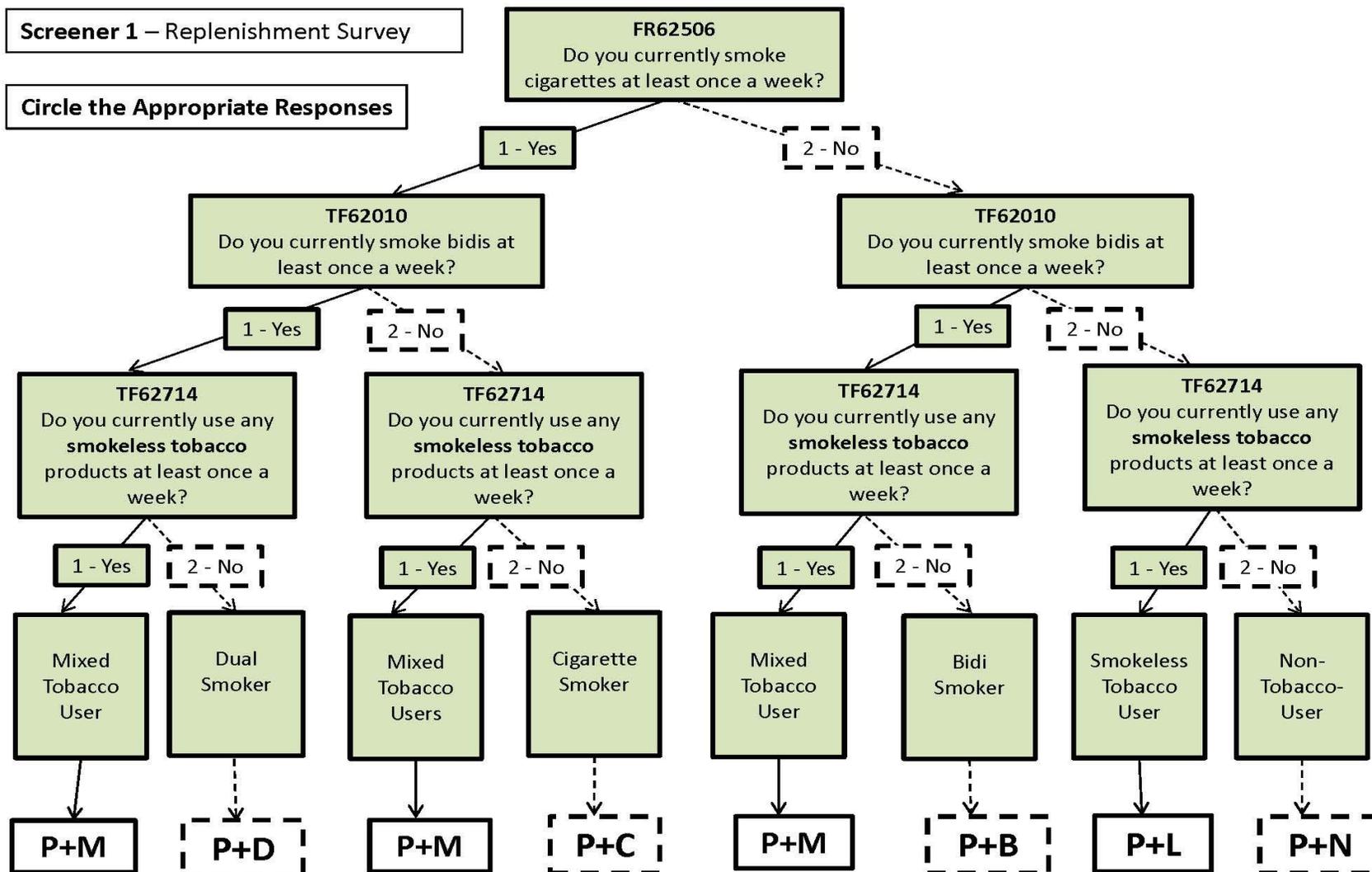
Change of Address Information:

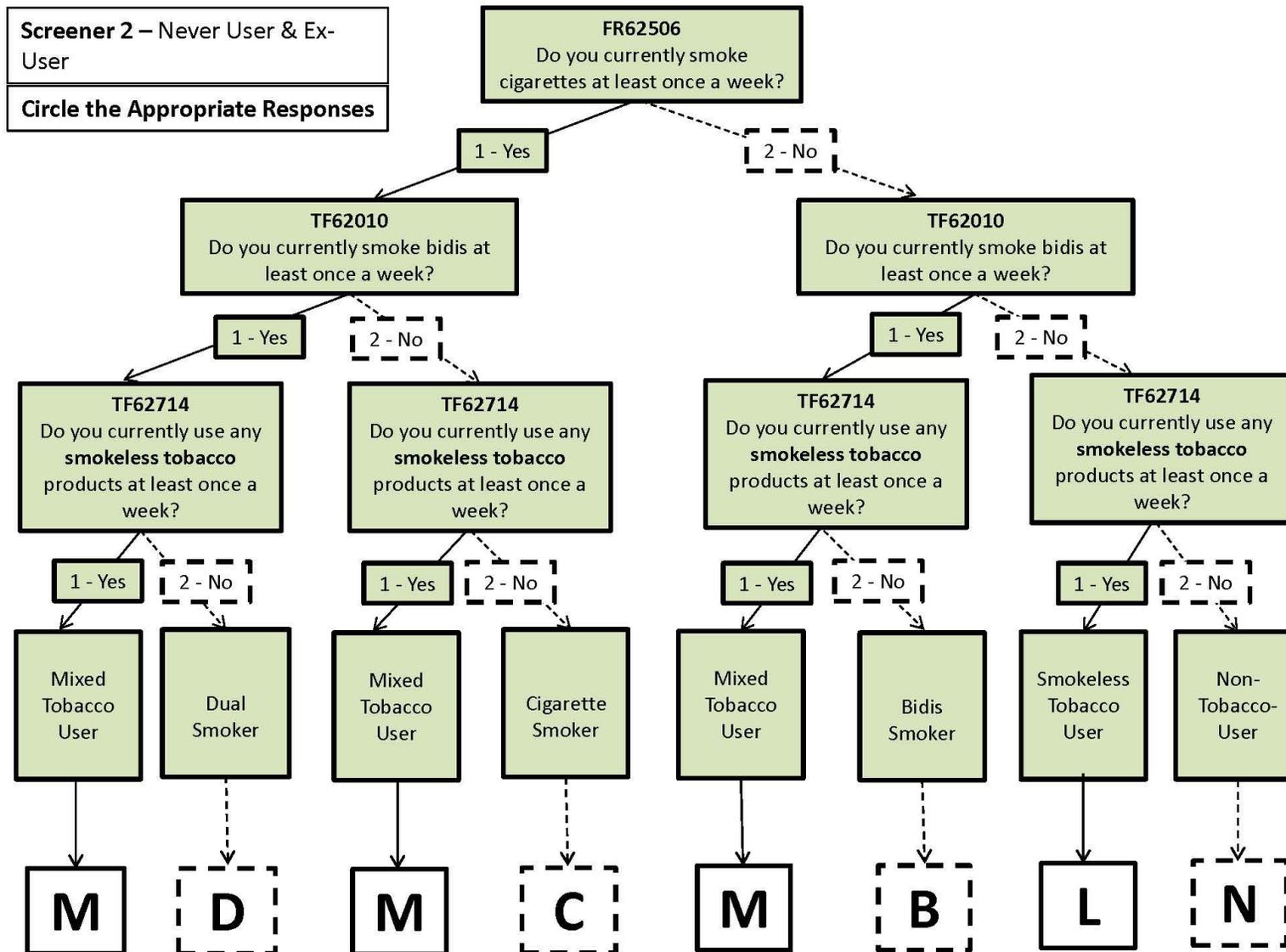
Name : _____
Address: _____ Post Office: _____
Phone Land: _____ Cell: _____

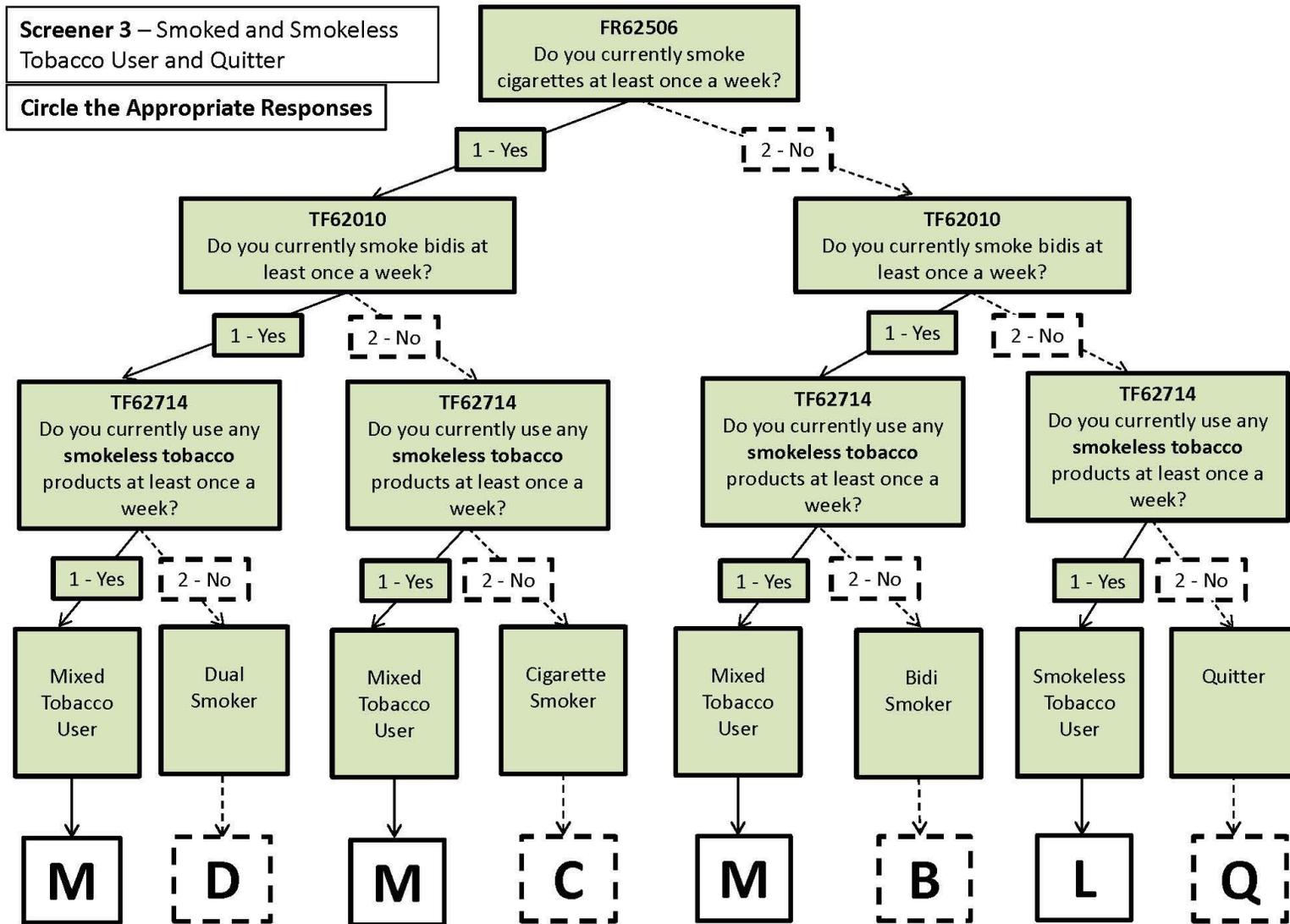
Name: _____
Address: _____ Post Office: _____
Phone Land: _____ Cell: _____

Name: _____
Address: _____ Post Office: _____
Phone Land: _____ Cell: _____

Appendix E: Screeners







Appendix F: Pictures of Survey Fieldwork



Appendix G: Country Profile

Bangladesh has an estimated population of 156 million, 25% of whom live in urban areas. In 2014, GDP per capita was US \$1,015 (current prices). It is one of the largest tobacco consuming countries in the world, where an estimated 46.3 million adults are users of smoked and/or smokeless tobacco products. Tobacco consumption leads to more than 57,000 deaths and about 1.2 million cases of tobacco-related illnesses in Bangladesh each year.

In 2009, the WHO conducted the Global Adult Tobacco Survey Bangladesh (GATS) which was a national study of adult tobacco use and the overall impact of tobacco control measures in Bangladesh. GATS Bangladesh (2009) found that 43.3% of adults 13 (aged 15 years and older) use some form of tobacco, with a higher prevalence of tobacco use among males (58.0%) than females (28.7%). In Bangladesh, tobacco is consumed in a variety of smoked (e.g., cigarettes, bidis) and smokeless (e.g., pan, zarda, gutka, betel quid with tobacco, gul, sadapata, khaini) forms. Estimates from GATS Bangladesh showed that 23.0% of adults use smoked tobacco, and that 27.2% of adults use smokeless tobacco. Findings also showed that while the prevalence of smoked tobacco use was much higher among males (44.7%) than females (1.5%), prevalence of smokeless tobacco use was similar among males (26.4%) and females (27.9%). Overall, the prevalence of both smoked and smokeless tobacco use was higher in rural areas than in urban areas.

The ITC Bangladesh Wave 3 Survey, which was conducted in 2011-2012, provided the most current estimates of adult tobacco use in Bangladesh. The Wave 3 Survey found that 36.5% of adults (aged 15 years and older) used some form of tobacco, with a higher prevalence of tobacco use among males (47.4%) than females (25.0%). Findings also showed that 19.7% and 22.0% of adults used smoked and smokeless tobacco, respectively. Although the prevalence of smoked tobacco use was much higher among males (37.4%) than females (0.9%), the gender difference for smokeless tobacco use was not as pronounced (19.6% for males vs. 24.6% for females). The prevalence estimates for exclusive use of a specific tobacco product ranged from 1.9% to 16.9% as follows: 1.9% for exclusive bidi use, 10.6% for exclusive cigarette use, and 16.9% for smokeless only use. In addition, findings showed that 5.1% of adults were mixed tobacco users (users of both smoked and smokeless tobacco products), and that 1.8% of adults are dual users (smokers of both cigarettes and bidis).

Cigarette and bidi prices in Bangladesh are very low. As of 2012, the average price per pack of 20 cigarettes was 28 BDT (equivalent to 0.35 USD in 2012 prices) for the lowest-cost brand, and 50 BDT (equivalent to 0.63 USD in 2012 prices) for the most sold brand. Excise taxes on cigarettes and bidis are well below the recommended percentage of at least 70% excise tax of the retail price set out by the WHO. On average, cigarette excise taxes account for just over half of retail prices, while bidi excise taxes account for approximately 10% of the retail price. Tobacco excise taxes also vary widely by product type (different tax rates for cigarettes vs. bidis), and by brand (more expensive cigarette brands are taxed at higher rates vs. less expensive brands).

As almost half of the population in Bangladesh lives below the poverty line, it is important to identify tobacco usage pattern and effectiveness of tobacco control initiatives specifically for the poor. Universal tobacco control policy instruments may not work unequivocally to save the poor from the tobacco epidemic. This aspect of tobacco control merits particular attention from policy makers in view of the growing concentration of tobacco usage in the developing countries, and among the poor within developing countries. Together, the evaluation provided by the proposed study and ongoing surveillance efforts will provide valuable information to the Bangladesh

Government toward the goal of strong FCTC implementation. The placement of a longitudinal tobacco control policy evaluation study in Bangladesh is important in its own right, as there are no existing research projects in Bangladesh that are suitable to evaluating the impact of tobacco control policies. The Bangladesh Government has made considerable progress in enacting tobacco control regulations and is in the process of building capacities to support the entire drive. However, it is not yet clear how effective the already implemented tobacco control efforts have been or the planned efforts would be.

In 2005, Bangladesh enacted the Tobacco Control Act (TCA), with corresponding regulations being implemented in 2006. However, recent evidence from two nationally representative surveys conducted in 2009—the Global Adult Tobacco Survey (GATS) and the International Tobacco Control (ITC) Bangladesh Survey—have found that despite the enactment of the TCA, Bangladesh has experienced an alarming increase (2.5 million more Bangladesh people are smoking) in tobacco consumption over the past five years. The low price of tobacco products, which has not kept up with the rapid increase in cost of living, is a major factor underlying the increase in tobacco use despite the Tobacco Control Act of 2005. The low impact of the TCA in failing to reduce tobacco consumption and prevalence in Bangladesh may also be due in part to low levels of enforcement of non-tax measures of the TCA, such as the advertising ban and smoke-free public places, and relatively low levels of implementation of warning labels, and the absence of the regulation about the smokeless tobacco products.

On April 29, 2013, the National Assembly of Bangladesh passed the Tobacco Control Law Amendment Bill 9. However, the amendment has not come into force due to the implementation rules is not published. Compared to the 2005 TCA, the amendment requires the following changes:

- (i) Smokeless tobacco has been brought under the definition of “Tobacco”;
- (ii) Restaurants and indoor workplaces have now been included among the public places that are to be completely smoke-free;
- (iii) Advertisements at points of sale are not allowed and “corporate social responsibility” activities are restricted. Anti-tobacco messages are needed if tobacco use is included in a movie;
- (iv) Sales of tobacco to and by minors are not allowed;
- (v) Graphic health warnings shall be printed on tobacco packs that cover at least 50% of each principal surface area. Misleading descriptors such as “light”, “mild” and “low tar”, are not allowed.

In addition to non-tax measures of the TCA, the Bangladesh government implemented several cigarette price and tax increases during the period of time between each wave of the ITC Bangladesh Wave 1 to 4 Surveys (2009-2014). Between the Wave 1 and Wave 2 Surveys, there was an increase in cigarette prices (per pack of 10 cigarettes) at each of the four retail price slabs (low, medium, high, and premium price tiers) and the supplementary duty (SD) was increased by 1% at each price slab. Between the Wave 2 and Wave 3 Surveys, there was another increase in cigarette prices at each of the four retail price slabs, and the SD was increased by 2% to 3%. Between the Wave 3 and Wave 4, the SD was increased and the high and premium slabs were combined into one slab. In addition, a ‘Health Development Surcharge’ was imposed on all imported and domestically produced tobacco products to be “used for used for the treatment and rehabilitation of tobacco disease-stricken people”.

Bidis are inexpensive hand-rolled cigarettes that are popular among the poor in Bangladesh, and account for 75% by volume of the cigarettes sold in the country. Based on estimates from GATS

Bangladesh, the average price per pack of 25 bidi sticks was 6.2 BDT (equivalent to 0.09 USD in 2009 prices), and price of a single bidi is about one-sixth the price of a cigarette. In Bangladesh, bidis are taxed at an even lower rate than cigarettes. It is also important to note that bidis are taxed based on a single “tariff value” set by the government, which is approximately half the actual retail price. Bidis are available in packs of 20 sticks or less, but are most commonly sold in packs of 25 non-filtered bidi sticks in Bangladesh. Between 2008 and 2013, an SD of 20% and a VAT of 15% were applied to a tariff value of 3.1579 BDT per pack of 25 non-filtered bidi sticks. In 2013-2014, the tariff value per pack of 25 non-filtered bidi sticks was increased to 3.88 BDT.

FCTC Status

Bangladesh was the first country to sign the FCTC (in June 2003) and among the first to ratify it (in June 2004). It introduced its Tobacco Control Act (2005) which banned smoking in health-care and educational facilities, restricted smoking in transportation and public places, and banned tobacco advertising, promotion and sponsorship. Until March 2016, health warnings were text-based, covering 30% of the pack. Tobacco Cessation Clinics have been set up by NGOs and currently do not offer nicotine replacement therapy. These initiatives, however, were considered grossly inadequate for the size of the population.

Appendix H: Areas Selected (National Probability Sample)

Division	District	Upazila/Thana	Selected village/ward
Barisal	Barguna	Amtali	Chhurikata
		Pathargata	Raihanpur
	Barisal	Banaripara	Machhrang
		Barisal Sadar	Chakhar
			Baidya Para
	Bhola	BholaSadar	Hijaltala
			Nabipur
Sundrkhali			
Chittagong	Chittagong	Fatikchari	RamgarChabagan
		Hat Hajari	Fatehpur
			Nehalpur
			Alampur
			Khoashnagar
	Cox's Bazar	Teknaf	Charlaikha
			Sonapahar
	Noakhali	NoakhaliSadar	Jamadargram
			PuranPollan Para
		Senbagh	Nazirpara
			PurbaFatehpur
Dhaka	Dhaka	Keraniganj	Jamalpur
		Khilgaon Thana	Chiladi
			Natunbagh
			Azimpur Road
			Lalbagh
	Mohammadpur Thana	Shahjahan Road	
		Lalmatia (Block-F)	
		Sabujbagh	
		Kusumbagh	
		Kalipur (Uttarpara)	
	Kishoreganj	Bhairab	Chandpur
		KishoreganjSadar	PurbaKatiar Char
			Auliar Para
	Madaripur	Shib Char	Nalgora
	Mymensingh	Muktagachha	Baghmara
			Lakshmikhola
		MymenshingSadar	Nimuria
			Natun Bazar
	Tangail	Kalihati	Durgabari
Haripur			
Nagarpur		Ramdebpur	
		ChashaBhadra	
Sahajani			
Khulna	Jessore	JessoreSadar	ChanchraRoypara

Division	District	Upazila/Thana	Selected village/ward	
		Sharsha	Bijoynagar	
			Mahisha	
			Dighirpar	
	Satkhira	SatkhiraSadar	Chaubaria	
	Khulna	Rupsha	Pithabhog	
			Nehalpur	
	Kushtia	KushtiaSadar	Railway Colony	
			Radhanagar	
	Rajshahi	Dinajpur	Phulbari	Chakchaka
				Shamsernagar
Parbatipur			Mujaffarnagar	
			ChhotaRamchandrapur	
Pabna		Bhangura	Adarsha Gram	
		Faridpur	Bhabanipur	
			Deobhog	
Rajshahi		Durgapur	Nishipara	
			Salgharia	
		Tanor	Palashbari	
Rangpur		Badarganj	Bel Pukur	
			Kalma	
		RangpurSadar	ShahaPur	
			KismatBasantapur	
Sylhet	Habiganj	Nabiganj	Pakpara	
			Putimari	
	Sylhet	Fenchuganj	Shibpasha	
			Bhanudeb	
			Ashighar	
			Ghilachhara	

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