DESCRIPTION OF METHODOLOGY

GENERAL INFORMATION

THE NATIONAL CONSUMER STUDY (NCS/NHCS)
FALL 2016 ADULT 6-MONTH STUDY
(Late April 2016 – Late November 2016)

Overview
The Fall 2016 Adult 6-Month Study uses a probability sample design that measures all American adults – Hispanics/Latinos and non-Hispanics, English-speaking and Spanish-speaking – with a uniform questionnaire and consistent data collection and data processing procedures.

The study provides single-source measurement of major media (English-language and Spanish-language), products/brands, services, and in-depth demographic, lifestyle and psychographic characteristics. Simmons clients are able to compare the consumer behavior of Hispanics/Latinos to the total population with a single research tool. All respondents – regardless of origin or language ability – are asked the full range of questions measured by the National Consumer Survey. In addition to these data elements which are available to all NCS and NHCS subscribers, an additional set of “Hispanic only” questions are asked of Hispanic respondents. These additional data variables include extended demographic, lifestyle and psychographic information for Hispanic respondents and they are made available to NHCS subscribers with the appropriate data license. Additionally, the study provides extensive measurement of Spanish-language media, producing estimates of usage and time spent that are comparable to the estimates produced for English-language media. These incremental data elements enrich NHCS clients’ ability to profile and segment the diverse Hispanic/Latino market.

The Fall 2016 Adult 6-Month Study is based on a sample of 13,296 interviews with English and Spanish speaking adults 18 years or older residing in the United States, excluding Alaska and Hawaii. Among the total sample, 3,431 respondents are of Hispanic/Latino origin or descent. Respondents participated between late April 2016 and late November 2016.

The Fall 2016 6-Month NCS study is comprised of two quarterly waves - Summer 2016 wave (fielded from late April 2016 to late August 2016) and the Fall 2016 wave (fielded from late July 2016 to late November 2016).

The following sections of this manual describe the methods and procedures used in the execution of the Fall 2016 Adult 6-Month Study.
SECTION I. Description of Methodology - This section describes the methodology used in the design and execution of the study, including the sample design, questionnaire design, data collection procedures, and selected computations.

SECTION II. Coding Simmons Data - Contains general information on coding Simmons data.

SECTION III. Index to Definitions – Utilize this section for definitions of demographic terms, geographic definitions, radio formats and more. Of special note to NHCS subscribers, this section includes definitions of Hispanic-only demographic/lifestyle variables.

SECTION IV. Special Notices – Refer to this section for detailed information on changes in the survey instrument or other procedures that are specific to this release.

TECHNICAL APPENDIX – Contains in-depth lists of information referenced in the manual.

CODEBOOK – A reference to the contents of the study.
TABLE OF CONTENTS

Sample Design and Selection Procedures
   Introduction and Summary ................................................................................................. 5
   Stratification of the Sample ................................................................................................ 5
      Hispanic Stratum ........................................................................................................... 5
      Non-Hispanic Stratum .................................................................................................. 6
   Non-Response Sample Carried Over from a Prior Wave ................................................... 8

Data Collection
   Overview ..............................................................................................................................8
   Field Procedures.................................................................................................................. 9
   Incentives .......................................................................................................................... 10
   Special Response Rate Procedures ....................................................................................11
   Non-Responding Households Attempted by Phone ..........................................................11

The Survey Instrument ...........................................................................................................13

   Data Processing ................................................................................................................ 15

Weighting and Projecting the Sample ................................................................................. 17

Print Media Questioning
   Magazines ........................................................................................................................ 19
   National Newspapers (Daily & Weekend) ........................................................................ 19
   Local/Regional Newspaper (Daily & Weekend) .............................................................. 19
   Yellow Pages .................................................................................................................... 20
   Internet Overview ............................................................................................................. 21
   Online/Internet Use ........................................................................................................... 21
   Online Activities ............................................................................................................... 21
   Websites/Search Engines ............................................................................................... 21
   Apps for Cell Phones/Smartphones or Tablets ................................................................. 21
   Digital Music Services (Excluding Satellite Radio) ......................................................... 21
   Internet Usage at Home ................................................................................................... 22
   Internet Usage at Work .................................................................................................... 22
   Other Internet Questions .................................................................................................. 22

Print Readership Estimation
   Magazines ........................................................................................................................ 23
   Newspapers ....................................................................................................................... 24
   Sunday National Magazine & Comic Inserts ................................................................... 25
DESCRIPTION OF METHODOLOGY
THE SIMMONS NATIONAL CONSUMER STUDY (NCS/NHCS)
FALL 2016 ADULT 6-MONTH STUDY
(Late April 2016 – Late November 2016)

TABLE OF CONTENTS (Cont.)

Cable and Broadcast Media
   Cable Television .................................................................................................................. 26
   Broadcast Television ......................................................................................................... 27
   Radio ................................................................................................................................. 29

Quintiles/Terciles/Volume Groups ....................................................................................... 30

Sampling Error ..................................................................................................................... 33

Limitations ............................................................................................................................ 35
SAMPLE DESIGN AND SELECTION PROCEDURES

Introduction and Summary

Starting with the Winter 2016 field, one single sample frame was used:

The General Market National Address-Based Sample is a sample of households drawn from a list frame of U.S. households excluding addresses in Alaska and Hawaii. Both addresses with landline telephones as well as addresses without a landline telephone are covered by the Address-Based frame. All English-speaking and Spanish-speaking adults in each sample household (including non-Hispanics and Hispanics) are designated as eligible respondents and are invited to respond to the survey. For convenience this sample is called the General Market Address sample. Depending on the user’s needs it may be viewed as either a sample of Adults or a sample of Households from the USA (excluding Alaska and Hawaii).

For this sample, access to the target population of adults is through the household, and access to the household is through the street address.

Stratification of the Sample

The General Market National Address-Based Sample is a disproportionate stratified sample of households/adults selected from a universe of U.S. households excluding Alaska and Hawaii. Simmons deploys a stratification scheme that utilizes ethnicity, presence of a landline, income and geography as its stratification variables. The selection file is first divided into two primary strata, a Hispanic Stratum and a Non-Hispanic Stratum. Each of these primary strata are in turn further subdivided divided by presence of landline, geography and household income. The Hispanic Stratum contains address records that have a higher than average probability of having a Hispanic adult in the household. The non-Hispanic Stratum is classified as all other address records in the sample file that do not have a higher than average probability of having a Hispanic adult in the household.

**Hispanic Stratum**

The Hispanic stratum consists of addresses classified as having a higher than average chance of containing Hispanic adults. This stratum is first divided into addresses with a landline and addresses without a landline. The landline stratum and no landline stratum are then further subdivided by the following income categories:

1. Records with unknown income or household income less than $50,000
2. Records with household income greater than or equal to $50,000 but less than $100,000
3. Records with household income greater than or equal to $100,000

The final stratification variable for the Hispanic Stratum is geography. There are 12 geographic areas, consisting of the eight selected DMAs listed below and the balance of the U.S. stratified by four Census Regions:
DESCRIPTION OF METHODOLOGY
THE SIMMONS NATIONAL CONSUMER STUDY (NCS/NHCS)
FALL 2016 ADULT 6-MONTH STUDY
(Late April 2016 – Late November 2016)

Chicago                       Miami
Dallas                        New York
Houston                      San Antonio
Los Angeles                  San Francisco


Taken together, the 2 landline categories, 3 income categories and 12 geographic areas define 72 separate sampling strata within the Hispanic Stratum.

Non-Hispanic Stratum

The Non-Hispanic stratum consists of all addresses in the Address-Based frame that have not been identified as part of the Hispanic Stratum. This stratum is first divided into addresses with a landline and addresses without a landline. The landline stratum and no landline stratum are then further subdivided by the following income categories:

1. Records with unknown income or household income less than $50,000
2. Records with household income greater than or equal to $50,000 but less than $100,000
3. Records with household income greater than or equal to $100,000

The final stratification variable for the Non-Hispanic Stratum is geography. There are 18 geographic areas, consisting of the fourteen selected DMAs listed below and the balance of the U.S. stratified by four Census Regions:

Atlanta                       Los Angeles
Boston                        Miami
Chicago                       New York
Cleveland                     Philadelphia
Dallas                        San Antonio
Detroit                       San Francisco
Houston                       Washington, D.C


Taken together, the 2 landline categories, 3 income categories and 18 geographic areas define 108 separate sampling strata within the Non-Hispanic Stratum.
Non-Response Sample Carried Over from a Prior Wave

The non-response stratum “carries over” non-responding sample units (household addresses) from a prior wave into the current wave with a one-wave hiatus in between. This strategy identifies the sample records with a “non-response” final disposition in the previous wave and places them into a holding queue for one wave until the next wave’s sample is mailed. That is, the non-responding households from Quarterly Wave 1 are carried over to Quarterly Wave 3, skipping one quarterly wave in between.

As an example, non-responders from the Spring 2016 wave were “carried over” to the Fall 2016 wave – hiatus in Summer 2016 - and subjected to the same mailing protocol and response rate procedures as the “fresh” Fall 2016 sample. The final response rate calculations for the Fall 2016 6-Month Study are based on the responders from the new sample introduced for the current wave, plus the responders and non-responders from the “non-response” sample carried over from a prior wave.

For study counts on intab households by DMA, please refer to Appendix A.
DESCRIPTION OF METHODOLOGY
THE SIMMONS NATIONAL CONSUMER STUDY (NCS/NHCS)
FALL 2016 ADULT 6-MONTH STUDY
(Late April 2016 – Late November 2016)

DATA COLLECTION

Overview

A two-phase data collection approach is used:

Phase I: Mail-based recruitment questionnaire
Phase II: Mail-out, mail-back self-administered survey booklets

For Phase I, Simmons mails a 4-page self-administered questionnaire to all designated households. All households in the General Market National address sample receive an English-language questionnaire. Additionally, households which are identified as likely to be Hispanic are also sent Spanish-language materials.

The Phase I address sample recruitment questionnaire is completed by any eligible adult 18+ household member who is either English-speaking or Spanish-speaking. Households whose members are affiliated with media companies are not qualified to participate.

The questionnaire includes an “opt-out” option for participating in Phase II: “Would you be interested in participating in one of our future consumer studies?” Households with a response of “Yes” or “Not Sure”, are defined as households accepting surveys and are sent a Thank You letter followed by the standard Phase II NCS/Hispanic booklet mailing. Selected households with a “No” or “No Answer” response, are defined as households not accepting surveys and further approached with special treatments for Phase I conversion, which are addressed under the section “Special Response Rate Procedures”.

The Phase I questionnaire collects demographic information about the household and the head of house, along with the necessary information to mail the self-administered survey booklets to all eligible persons in the household. All household members 6 years of age and older are enumerated so each member can be sent a self-administered survey booklet. For Hispanic members, language preference is asked for their individual survey booklets and either an English or Spanish survey booklet is mailed to them.

In Phase II a self-administered personal survey booklet is mailed to every adult, teen 12-17 years, and child 6-11 years – Hispanic and non-Hispanic, English-speaking and Spanish-speaking via FedEx delivery.
DESCRIPTION OF METHODOLOGY
THE SIMMONS NATIONAL CONSUMER STUDY (NCS/NHCS)
FALL 2016 ADULT 6-MONTH STUDY
(Late April 2016 – Late November 2016)

Field Procedures

Simmons sends alert treatments to households selected in advance of the first Phase I recruitment mailing. These treatments may include postcards, letters, or both. These alert treatments serve to inform the household that we will be sending a short survey, and encourage them to cooperate when the survey is received.

The Phase I recruitment mail-packet is delivered via USPS and can include up to three mailings. Specifically, the mail-packet includes: a 4-page self-administered recruitment questionnaire, cover letter, an up-front incentive (see section titled Incentives) and a live stamped envelope for the return of the survey. Households which are identified as likely to be Hispanic (Hispanic stratum) - receive bilingual materials in their Phase I packet.

For any households that did not return a completed questionnaire after the first questionnaire mailing, a reminder postcard is sent.

Next, a second mailing of Phase I is delivered to all non-responding households and includes the exact same contents as the 1st mailing with the exception of the following items: no incentive and a business-reply envelope instead of a live stamp. A 3rd mailing of Phase I is sent to non-responding households that did not include a landline number attached in the original sample record file. This mailing includes the same contents as the 2nd mailing along with a $1 incentive.

For household records that include a landline number attached, the mailing process ends with the 2nd mailing, if there is no response and then those records are moved to the telephone call center for standard dialing protocols.

If the household consents and is deemed eligible, then a mailing of the phase II, the self-administered personal survey is mailed to every adult, teen and child. Survey materials for the household are mailed to the primary contact respondent who completed phase I questionnaire. Within this package, each participating household member receives a personalized survey packet sealed in a plastic bag with a name label. Each survey packet contains a cash incentive, a small premium gift item (for kids and teens only), and a personalized cover letter. The primary household contact receives a separate household booklet containing questions about household characteristics and household product/brand ownership, purchase and usage, in addition to an adult personal booklet. Postage-paid return envelopes are also included.

Other survey aids may be included in the household mailing, for example, a “checklist” for the household, media reference guides, or other materials designed to enhance respondent cooperation.

Reminder mailings are sent to all households consenting. Two reminder mailings are made to achieve reminder contact with each consenting household where the first reminder is sent to all adults who consented and the second reminder is sent to the primary contact of the household. If there is a presence of a telephone number in the sample records, then two reminder phone calls are made as well.
Respondents receiving English-language survey materials are provided with a toll-free number and website address that they are encouraged to contact if they have questions or need more information. Respondents receiving Spanish-language survey materials are provided with a separate toll-free number staffed by bilingual interviewers and voice mail capabilities, along with a separate website address that points to a Spanish-language version of the respondent website.

Incentives

Simmons uses a Hybrid Incentive Structure where households will receive different front-end and back-end incentives if they are classified as Hard-to-Reach and/or are classified as “fresh” or “non-response carryover” sample along with their homeowner status. Hard-to-Reach variables are classified as households with a presence of Hispanic, Black, 18-34-year-old adult or likely to be a cell-phone only household (no landline present). The Households’ Hard-to-Reach status is determined based on appended data from Data Enhancement Partner(s) for the selected address. The current Hybrid Incentive Structure is outlined below:

### “Fresh” Sample

<table>
<thead>
<tr>
<th>Hard-to-Reach Variable</th>
<th>Homeowner</th>
<th>Renter</th>
<th>Homeowner</th>
<th>Renter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presence of Hispanic Adult</td>
<td>$5</td>
<td>$5</td>
<td>$5</td>
<td>$10</td>
</tr>
<tr>
<td>Presence of Black Adult</td>
<td>$5</td>
<td>$5</td>
<td>$5</td>
<td>$10</td>
</tr>
<tr>
<td>Presence of 18-34</td>
<td>$5</td>
<td>$5</td>
<td>$10</td>
<td>$10</td>
</tr>
<tr>
<td>No Landline Present</td>
<td>$5</td>
<td>$5</td>
<td>$5</td>
<td>$10</td>
</tr>
<tr>
<td>All other records</td>
<td>$5</td>
<td>$5</td>
<td>$0</td>
<td>$5</td>
</tr>
</tbody>
</table>

### “Non-Response or Carryover” Sample

<table>
<thead>
<tr>
<th>Hard-to-Reach Variable (Hispanic Stratum):</th>
<th>Front-End Incentive</th>
<th>Back-End Incentive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Homeowner</td>
<td>Renter</td>
</tr>
<tr>
<td>Presence of Black Adult</td>
<td>$10</td>
<td>$2</td>
</tr>
<tr>
<td>Presence of 18-34</td>
<td>$10</td>
<td>$2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hard-to-Reach Variable (Non-Hispanic Stratum):</th>
<th>Front-End Incentive</th>
<th>Back-End Incentive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Homeowner</td>
<td>Renter</td>
</tr>
<tr>
<td>Presence of Black Adult</td>
<td>$2</td>
<td>$2</td>
</tr>
<tr>
<td>Presence of 18-34</td>
<td>$2</td>
<td>$2</td>
</tr>
</tbody>
</table>

| All other records                        | Hispanic Stratum | Non-Hispanic Stratum |
|                                          | $2             | $5             |
|                                          | $10            | $5             |
|                                          | $5             | $2             |
|                                          | $0             | $10            |

An additional $1 incentive is included in the 3rd mailing to non-responding households.
For Phase II, a program known as “Dynamic Differential Survey Treatments (DST)” was used to incentivize the return of the Phase 2 booklets. This program relies upon both current and historical information about a household in order to assign a propensity-to-respond score prior to the mailing of the Phase 2 booklet. That is, a multivariate process is used to produce a single score for each household which estimates the difficulty of getting booklets back from the household. The score drives the incentive treatment offered to the household, a treatment which will increase as the “difficulty to respond” score increases. All persons receive a $15 upfront incentive when the booklet arrives at the household. The backend incentive varies depending on the response-propensity score (between $20 and $60).

Special Response Rate Procedures

In an effort to maximize cooperation from all households, additional procedures are employed with households who “opted-out” of participating in Phase II. These households receive a modified version of the “Thank You” letter with an additional incentive offer for participating in Phase II.

Simmons also uses the following Phase II booklet recovery procedures for households or individual adults who have not returned the phase II booklet: 1) A mail-based reminder to households that have not returned any booklet after six weeks which offers an additional incentive to adults in the household; and 2) A mail-based “Special” recovery which identifies households that have returned one or more booklets but have one or more booklets outstanding and offers an additional incentive to any remaining adults in the household who have not returned their booklet.

Non-Responding Households Attempted by Phone

Households with an appended landline, not responding to the initial two mail attempts of Phase I, are then turned over to the telephone center for dialing protocols.

Similarly, a two-phase data collection approach is used for these non-responding households where the phase I telephone placement interview mirrors the mail-based recruitment questionnaire. The only difference is an address verification question early in the phone interview to determine household eligibility. If the number dialed does not yield the same matching address from the sample record, the household is then deemed ineligible. The rest of the interview gathers the same demographic information about the household as the mail recruitment process.

For the Hispanic stratum, all telephone contacts begin in Spanish, with the interviewer switching to English only if the person answering the phone does not understand Spanish or asks to switch to English.

For the non-Hispanic stratum, all telephone contacts being in English, with the interviewer switching to Spanish only if the person answering the phone does not understand English or asks to switch to Spanish.

Simmons carefully selects the interviewing staff for the telephone placement interview. In particular, special screening procedures are deployed to assess the interviewing skills of all interviewing staff.
plus the language capabilities of the bilingual interviewing staff before they are assigned to the study. Additionally, Simmons staff conducts or, at minimum, participates in training for the interviewers, monitoring staff, supervisors and project managers, and remotely monitors the telephone interviewing (both English-language and Spanish-language interviews) throughout the course of the fieldwork to ensure compliance with procedures. When unable to attend in person, Simmons participates in training sessions by using webcam technology and having a data collection staff member available on-call to address any questions that may arise during training. All interviews are monitored and recorded by the call center to ensure quality control.

During Phase I placement calling, Simmons tries to contact each household through repeated telephone attempts and executes a maximum of 8 telephone attempts. Attempts are made during different times of the day and on 8 different days, making sure to include both weekday and weekend attempts.

Once consent is obtained from the household, the exact same mailing protocols that were used for households consenting by mail, are also used here for delivering the phase II self-administered survey booklets. If the household does not return the phase II survey booklets, reminder contacts are made both by phone and mail with a total of four reminders- two phone and two mail.
THE SURVEY INSTRUMENT

The National/Hispanic Consumer Study utilizes two basic types of survey booklets in each household: a Personal Survey Booklet and a Household Survey Booklet.

A Personal Booklet is sent to each qualified adult member in the household 18 years of age or older. It contains questions on the following topics:

- Media – Usage of newspapers, magazines, yellow pages, online/interactive services, broadcast and cable television, radio and movies
- Demographics – Comprehensive information about respondent characteristics
- Lifestyle/Psychographics – Extensive lifestyle and psychographic information
- Retail Shopping – Shopping and purchase information for specific supermarkets, department stores, discount stores and other retail specialty stores, including home furnishings, electronics, home improvement, apparel, toys, footwear, and sporting goods.
- Products/Services – Over 8,000 brands in more than 450 data categories

One Household Booklet is sent to each household. The Household Booklet is sent to the adult member who completed the phase 1 recruitment questionnaire, but the Household Booklet may be filled out by any adult(s) who have knowledge of the household’s purchase/usage behavior. The Household Booklet contains questions covering household use of selected products and services, as well as household ownership of certain types of products such as televisions, computers, and automobiles.

A critical design component of the NCS/NHCS Study is the use of a uniform questionnaire to collect the same information from all respondents – Hispanic and non-Hispanic, English-speaking and Spanish-speaking. No ascription of product or brand data is performed. All adults in the study are asked the same questions, with the exception that Hispanic adults are asked a set of additional questions about specific Spanish-language media vehicles as well as Hispanic-specific demographic, lifestyle and psychographic information.

There is one version of the Household Survey Booklet available in both English and Spanish for households across all five sample frames. The Spanish-language Household Booklet is a translation of the English-language Household Booklet. The same questions are asked in both booklets and the questions appear in the same order.

There are two versions of the Personal Booklet: One version is sent to Non-Hispanic adults and a separate version is sent to Hispanic/Latino respondents. All Hispanic adults are sent the same version of the Personal Booklet, regardless of which sample frame they originate from and regardless of whether they are sent an English-language booklet or Spanish-language booklet. The Hispanic
version of the Personal Booklet (available in both English and Spanish) contains all of the same questions asked in the Non-Hispanic Personal Booklet plus it contains additional questions asked only of Hispanic respondents.

There are four media rotation versions of the Personal Booklet. Those versions exist because question rotation is used in the collection of data for usage of individual magazines and cable networks.

There is an additional rotation that affects the English-language and Spanish-language versions of the Hispanic Personal Survey Booklets. The difference relates to certain media sections that are divided into subsections based on the language of the media vehicles. For example, within the Magazine section of the booklet, the English-language magazines appear together in one subsection and the Spanish-language magazines appear together in a separate but adjacent subsection. This formatting applies to the measurement of Cable Networks, Magazines, and Newspapers. For Hispanics receiving the Spanish-language version of the booklet, the Spanish-language subsection appears before the English-language subsection within a given medium. For Hispanics receiving the English-language version of the booklet, the English-language subsection appears before the Spanish-language subsection within the same medium. For the purposes of illustration, this formatting approach means, for example, the Spanish-dominant Hispanic respondent will first encounter the Spanish-language magazines in a self-contained sub-section, followed immediately by the English-language magazines.

For study details related to questionnaire rotations for magazines and cable media, please refer to Appendix F.
DESCRIPTION OF METHODOLOGY
THE SIMMONS NATIONAL CONSUMER STUDY (NCS/NHCS)
FALL 2016 ADULT 6-MONTH STUDY
(Late April 2016 – Late November 2016)

DATA PROCESSING

Respondents return booklets to an outside scanning company using postage-paid envelopes provided by Simmons. Every page of every booklet is scanned and these TIF images are placed on CDs for archival purposes. The scanning process also involves the conversion of respondent responses to check boxes into ASCII data files. These data files as well as TIF images of pages of the Personal and Household Booklets that contain respondent write-in information requiring key entry are electronically transferred to Simmons' data processing site in Florida.

A sample household becomes in-tab for the survey if the household returns the completed Household Booklet and at least one completed Personal Adult Booklet. Personal Adult Booklets that are completed and returned are used as in-tab only if the household has met the household in-tab criteria.

Once in the Florida operations center, the data files and key entry associated TIF images are opened, checked against valid respondent ids and inserted into the Oracle relational database for processing. Key to efficient processing is the fact that in addition to the data, a complete representation of the logical structure of the personal and household booklets is present in the Oracle database. This logical information structure includes cleaning rules, data gen rules, associations between questions, responses and categories along with other important structural elements. The use of proprietary graphically-based applications that access the Oracle database permits production personnel to independently inspect every aspect of the production process at any point in time.

During processing, key entry is accomplished via Windows-based proprietary programs that bring up the TIF image of a survey booklet page along with entry fields for key entry operators to code respondent write-in responses directly into the Oracle database. The ASCII data files sent by the scanning company are processed and cleaned using the cleaning rules and associations present within the booklet relational information structure stored within the Oracle database.

Weights are generated for each respondent using industry standard sample balancing software and demographic population targets acquired from third party vendors with expertise in demographic trends and projections.

Treatment of Missing Answers for Key Demographic Variables:

In some cases, there is a small incidence of item non-response for key Simmons demographic variables used primarily in the sample balancing process. In this case these answers were ascribed using Market Statistics' Cohort Ascription method. Cells, or "Cohorts", are formed by the "N-way" cross-tabulation of the "N" number of other questions answered by all respondents.

In the case of a missing response, the Cohort process attempts to find the best match between this "no answer" respondent and a respondent who answered the question. Best match is defined as a pair of respondents who most closely resemble each other on a prioritized list of critical variables that are specific to each target variable. Once the best available match is identified for a specific variable, the answer value of the responding member of the pair is "donated" to the respondent with the missing answer. If there is a pool of donors who are considered equally qualified, the program makes a
random selection from that pool. This process is performed separately for each variable to be ascribed using a unique, prioritized list of critical "predictor" variables. The list of predictor variables used most frequently include: Respondent Age, Sex, Race, Education, Marital Status, Heritage, Employment Status and Individual Employment Income; Head of Household Age, Sex, Education, Race, Marital Status, Employment Status and Heritage; Geography (DMA); Household Income; Household Size; Home Ownership.

Prior to the Cohort Ascription process, there is a process where certain demographic variables collected on the phone and in the self-administered booklet are compared for 1-Adult households. In the case of 1-Adult households, the respondent and head of household are the same individual. As such, the head of household descriptors collected during the recruitment interview can also be used to describe the Respondent, whose demographic information is collected through the self-administered personal survey booklet, and vice versa. There is an initial editing process for 1-Adult households where any missing values for Head of Household demographics collected during the recruitment interview are populated by the comparable values, if present, in the self-administered booklet. Similarly, if there are missing values for certain respondent demographics in the self-administered booklet, they are populated by the comparable values collected in the recruitment interview. If any conflicts are found between the recruitment value and the self-administered booklet value, the booklet values are used. In cases where both the recruitment value and the booklet value are missing, the respondent is a candidate for the Cohort Ascription process described below.

The following demographic variables are subject to ascription of missing answers using the Cohort method:

- Household Income, Home Ownership by Type of Residence, Market Value of Residence, Number of Children Under 18, Head of House Origin, Respondent Industry/Occupation, Respondent Individual Employment Income, Respondent Employment Description (work for private company/institution or gov’t office/institution), Respondent Company Size, Respondent Self-Employed Description (work at home/outside of home), Respondent Engaged Status, Respondent Country of Heritage (Hispanic respondents only)
- For both Respondent and Head of House: Age, Sex, Education, Race, Marital Status, Employment Status, Heritage (Hispanics only), Nativity (Hispanics only)

The majority of the above variables have an ascription incidence of less than 5 percent.

For a listing of variables with ascription incidence levels of 5 percent or greater, please refer to Appendix L.

A special process is used to ascribe missing answers to Language Spoken in Home. The ascription rate for this variable is less than 2 percent. Missing answers for this variable are ascribed either on the basis of predetermined rules or by a probability-based method using the frequency distribution of responses by respondents in “like” households who answered the language question.
WEIGHTING AND PROJECTING THE SAMPLE

The NCS/NHCS Study uses a single-frame probability sample design, starting with the Winter 2016 fieldwork. The weighting process involves two main steps.

In the first step, design weighting is used to account for differential selection rates explicit in the sample design. Each respondent is assigned a weight inversely proportional to his/her total probability of selection adjusted for the stratum response rate.

In the sample balancing phase, the design weights are adjusted to match universe estimates provided primarily by Nielsen for numerous demographic and geographic variables, using the successive ratio adjustment algorithm commonly known as sample balancing. Language population targets also used in sample balancing are derived in part from data provided by Nielsen from their Hispanic Enumeration Survey. Universe estimates of radio and TV usage by daypart are independently generated from the sample for non-Hispanics after removing the item non-response cases. Population targets derived from Nielsen are updated annually every Fall. Sample balanced weights are subject to a cap which is not less than six times the average case weight.

Simmons defines its target population for the survey as all English and Spanish speaking adults in the continental U.S., excluding persons in Alaska and Hawaii. Simmons modifies the universe estimates used in weighting to be consistent with the target population definition. That is, sample-based language adjustments are made to the total adult/household universe estimates to exclude the estimated portion of the adult/household population that does not speak either English or Spanish.

All non-Hispanic adult population estimates are adjusted downwards by 0.27% across the board for all demographics as follows:

Simmons’ Population Projection = Nielsen Population Estimate * 99.73%

All household population estimates are adjusted downwards by 0.35% across the board for all demographics as follows:

Simmons’ Household Projection = Nielsen Household Estimate * 99.65%

The estimated correction factor for the Hispanic population is 1 reflecting that the % of Hispanic adults speaking neither English nor Spanish is close to zero. In short, the population is too small to estimate.

Simmons produces both household weights and adult personal weights. In both cases Simmons uses seven mutually exclusive “models” (or post stratification partitions, each with its own sample balancing run) which, when combined, project to the total U.S. population in the 48 contiguous states for Hispanic Adults/Households, Non-Hispanic Adults/Households, and Total Adults/Households.
Sample balancing is performed separately for non-Hispanics and Hispanics. The non-Hispanic models for adult personal weights incorporate gender and geography. The Hispanic models for adult personal weights incorporate gender and origin of head of house. Simmons balances on different marginals within each of the models. Depending on the specific model, the marginals for the Hispanic models include Age within DMA, Education, Marital Status, Occupation, Individual Income, Home Ownership, Number of Children Under 18, Number of Hispanic Adults, County Size and Household Income. The Hispanic sample is also weighted by Language Strata population data, derived from the distributions reported in the aggregate of the two most recent Nielsen Hispanic Enumeration surveys, as well as Heritage within Region and Nativity (Born Inside/Outside the U.S.). The marginals for the Non-Hispanic models include Age, Race, Education, Marital Status, Occupation, Individual Employment Income, Household Income, Number of Children Under 18, Number of Adults 18+, Home Ownership, County Size, and either DMA totals or Census Region depending on the specific Non-Hispanic model.

For household weights, the non-Hispanic models incorporate gender of head of house and geography. The Hispanic models for household weights incorporate gender and origin of head of house. Depending on the specific model, the marginals for the Hispanic models include several head of house characteristics (Age, Education, Marital Status, Nativity), Home Ownership, Number of Children Under 18, Number of Hispanic Adults, Household Income, Language Spoken in the Home, County Size and Nielsen Region. The marginals for the non-Hispanic household models include head of house characteristics (Age, Education, Marital Status, Race), Home Ownership, Number of Children Under 18, Number of Adults 18+, Household Income, County Size and Census Region.

A comparison of the demographic composition of the sample before and after sample balancing is provided in Appendix B.
PRINT MEDIA QUESTIONING

Readership of Magazines and Newspapers is measured using a frequency of reading method.

Magazines

Readership of English-language magazines and Spanish-language magazines is measured in the same manner. Logos of the magazines are shown in the questionnaire using full-color partial covers. For each magazine, the respondent is asked whether he or she may have read or looked into any issue of the magazine in the last 6 months, and if so, on average, out of four issues published, how many he or she read or looked into.

All respondents – non-Hispanic and Hispanic, English-speaking and Spanish-speaking – are asked about all English-language titles. Only Hispanic respondents (both English-speaking and Spanish-speaking Hispanics) are asked about the Spanish-language magazines.

Within the magazine section of the Hispanic booklet, the English-language magazines appear together in one subsection and the Spanish-language magazines appear together in a separate but adjacent subsection. For Hispanics receiving the Spanish-language version of the booklet, the Spanish-language magazine subsection appears before the English-language subsection. For Hispanics receiving the English-language version of the booklet, the English-language magazines appear before the Spanish-language magazines.

National Newspapers (Daily and Weekend)

National newspapers are a standalone measurement (i.e. measured separately from local/regional newspapers) using a frequency of reading approach and the same pre-listed logo approach in all self-administered personal booklets, both Hispanic and non-Hispanic. For each national newspaper, respondents are asked to mark if they read or looked into the newspaper in the last six months. For each national newspaper marked, the respondent is also asked to mark the appropriate box to indicate on average, out of every five issues published, how many he or she read or looked into (for daily national newspapers). The same approach is used for Weekend national newspapers with the exception that the frequency of reading question asks the respondent to mark, on average, out of four issues published, how many he or she read or looked into. Additionally, for each national newspaper read or looked into, respondents are asked to indicate how they obtained the last issue read using the following response options: subscribe at home, subscribe at office, newsstand purchase, other purchase, read someone else’s copy or free issue at hotel, airport or other place/method.

National Sunday newspapers are always presented first in both the non-Hispanic and Hispanic books. The actual titles within the listing of Sunday/daily newspapers are rotated. The rotation is determined by the booklet rotation for all books.
Local/Regional Newspapers (Daily and Weekend)

Simmons uses a uniform write-in approach for its measurement of local/regional newspapers. The same frequency of reading approach that is used for national newspapers is also used for local/regional newspapers for both non-Hispanic and Hispanic respondents. Respondents are asked to write in the name of any daily newspapers read or looked into in the last six months and to mark the appropriate box. For each newspaper named by the respondent, the respondent is also asked to mark the appropriate box to indicate on average, out of five issues published, how many he or she read or looked into (for daily newspapers). The same approach is used for Weekend newspapers, with the exception that the frequency of reading question asks the respondent to mark, on average, out of four issues published, how many he or she read or looked into.

Booklets sent to non-Hispanic adults collect readership of Daily and Weekend newspapers. Booklets sent to Hispanic adults collect readership of Daily and Weekend newspapers for both English-language and Spanish-language papers.

The layout for newspaper write-ins presents the Weekend readership section in the 1st column and the Daily readership section in the 2nd column.

For Hispanics receiving the Spanish-language version of the booklet, the Spanish-language newspaper write-in section appears before the English-language write-in section. For Hispanics receiving the English-language version of the booklet, the English-language newspaper write-in section appears before the Spanish-language write-in section.

Yellow Pages

All respondents are asked the same questions about the Yellow Pages:

- How often they use the Yellow Pages, at home and at work or elsewhere
- The last time (before today) they used the Yellow Pages, at home and at work or elsewhere
DESCRIPTION OF METHODOLOGY
THE SIMMONS NATIONAL CONSUMER STUDY (NCS/NHCS)
FALL 2016 ADULT 6-MONTH STUDY
(Late April 2016 – Late November 2016)

Internet Overview

All respondents are asked the same questions regarding Online/Internet Use, Online Activities, Internet Usage at Home/Work, and Other Internet questions as described below. For Websites/Search Engines visited in the last 7 days and/or 30 days, all respondents are asked about the same list of English-language websites. All Hispanic respondents are asked about an additional list of Spanish-language websites, which is integrated within the list of English-language websites.

Online/Internet Use

Respondents are asked if they use the Internet either at home, work or somewhere else. Respondents are asked about where they access the Internet with regard to location (home, work, school, etc.), the devices they use to connect to the Internet at home and at work and the methods of access they use at home and at work. Additionally, users are questioned about how often they went online at home or work in the last 7 days, how many hours they spent online at work or home in the last 7 days, and how many unique or different web sites they visited at home or work in the last 7 days. Also users are asked which Internet browsers they used.

Online Activities

Respondents are asked to mark the types of websites or online activities they used or visited in the last 7 days and/or last 30 days, the number of times they visited in the last 30 days and whether they used or visited any of these types of websites using a mobile/handheld device in the last 30 days.

Websites/Search Engines

Respondents are asked if they used/visited any websites or search engines in the last 7 days and/or last 30 days. Respondents who answered yes are asked about a specific list of websites/search engines. Respondents are asked to mark the specific websites/search engines used in the last 7 days and/or last 30 days and how many times they visited the website in the last 30 days.

Apps for Cell Phones/Smartphones or Tablets

Respondents are asked if they used any apps in the last 30 days. Respondents who answered yes are asked which specific types of apps they used in the last 30 days, separately for cell phones/smartphones and then for tablets. Respondents are also asked whether they have paid for apps and then if so, are asked to indicate which price points they have paid by device (Cell phone/tablet).

Digital Music Services (Excluding Satellite Radio)

Respondents are asked if they used a digital music service in the last 30 days. Respondents who answered yes are asked about a specific list of digital music services. Respondents are asked to mark the services they used in the last 30 days and those they paid a subscription for.
DESCRIPTION OF METHODOLOGY
THE SIMMONS NATIONAL CONSUMER STUDY (NCS/NHCS)
FALL 2016 ADULT 6-MONTH STUDY
(Late April 2016 – Late November 2016)

Internet Usage at Home (Excluding E-mail) in the Last 7 Days

Respondents are asked if they used the Internet at their physical home for something other than e-mail in the past 7 days. Respondents who answered yes are asked to fill out a time grid for the time periods that they used the Internet for, whether last weekday or weekend, and then the total time they used the Internet during that time period over the last 7 days. Respondents are also asked what percentage of the total time spent on the Internet was work-related.

Internet Usage at Work (Excluding E-mail) in the Last 7 Days

Respondents are asked if they used the Internet at work for something other than e-mail in the past 7 days. Respondents who answered yes are asked to fill out a time grid for the time periods that they used the Internet for, whether last weekday or weekend, and then the total time they used the Internet during that time period over the last 7 days. Respondents are also asked what percentage of the total time spent on the Internet was personal-related.

Other Internet Questions

In addition, respondents are also asked about how often they use search engines, whether they used a video-chat/video-calling service, whether Internet Advertising influenced their purchase and their attitudes and opinions about the Internet.
PRINT READERSHIP ESTIMATION

Simmons uses theoretical probabilities based on frequency of reading to estimate the Average Issue Audience readership of individual magazines and newspapers.

Magazines

For magazines, respondents who claim to read 4 of 4 issues are given a probability of 1. Respondents who claim to read 3 of 4 issues are given a probability of .75. Respondents who claim to read 2 of 4 issues are given a probability of .50. Respondents who claim to read 1 of 4 issues are given a probability of .25. Respondents who read or looked into the magazine in the last six months but claimed to read less than 1 of 4 issues during that period are given a .125 probability. Simmons reports average issue audience estimates using these probabilities. Once all respondents have been assigned their respective probabilities for a magazine, the probability for each respondent is multiplied by the weight for that respondent. The average issue audience for a particular magazine is calculated as the sum of the probability-weight products across all respondents.

Special data assignments are made for respondents who provide incomplete information about their readership of individual titles. Respondents who marked one of the options for number of issues read but who did not mark they screened to the title (i.e. failed to mark “Read or Looked Into in Last 6 Months”) are assigned the missing screener answer. Respondents who marked they screened to the publication in the last 6 months but did not mark the number of issues read during that period are assigned a frequency answer. This assignment is done using the Cohort Ascription method of assigning the frequency answer from a “best match” donor. Potential donors are respondents who screened to the title in question and also provided a frequency response, and who “match” the recipient on three attributes: gender, age class and education class. Donors are randomly selected from the pool of qualified donors within the classification cell. A donor is used only once for a specific title. In a small percentage of cases a donor is not found within the classification cell and a frequency response is randomly assigned.

For study specific assignment of missing frequency rates, please refer to Appendix L.

Adjustment for Item Non-Response:

Estimates for English-language magazines and Spanish-language magazines contain a statistical adjustment for item non-response. The adjustment for English-language magazines is performed separately for non-Hispanic adults and Hispanic adults. For the purposes of the adjustment for English-language magazines for non-Hispanic adults, a non-responder to a magazine title consisted of respondents who failed to mark any of the magazine titles in the entire column in which the title appeared and also failed to mark the box at the bottom of the column to indicate they did not read or look into any of the titles in the column in the last six months.²

²Two columns of magazine logos are presented to the respondent on each page in the magazine section. At the bottom of each column, there is a box the respondent can mark if he/she did not read or look into any of the magazines in that column in the last 6 months.
Estimates for English-language magazines also contain a statistical adjustment for item non-response among Hispanic respondents. To be considered a potential non-responder to a specific title, as opposed to a non-user of the medium of English-language magazines, a Hispanic respondent had to have screened to at least one English-language magazine to be considered a user of the medium. As such, for the purposes of the adjustment for English-language magazines for Hispanic adults, a non-responder to a magazine title consisted of users of the medium (i.e. Hispanic respondents who screened to at least one English-language magazine) who met the following criteria: failed to mark any of the magazine titles in the entire column in which the title appeared and also failed to mark the box at the bottom of the column to indicate they did not read or look into any of the titles in the column in the last six months.

Estimates for Spanish-language magazines contain a similar statistical adjustment for item non-response among Hispanic respondents. Spanish-language magazine readership is only asked of Hispanic respondents. For the purposes of this adjustment, a non-responder to a magazine title consisted of respondents who failed to mark any of the measured Spanish-language titles and also failed to mark any of the boxes at the bottom of the columns containing Spanish-language titles to indicate they did not read or look into any of the titles in the column in the last six months.²

For both English-language and Spanish-language magazines, once non-responders were identified, statistical models were used to estimate probabilities of reading, by title, for each non-responder. These probabilities were then used to estimate which respondents would have screened to titles had they answered the question. These statistical models included demographic data as well as information about the types of magazines the respondent indicated he read in his survey response. After screens were estimated for non-responders, frequency of reading was estimated using statistical models that assessed key correlates and determinates of readership levels among the respondents who screened to that title in their survey response. For each respondent, for each new title screener added due to non-response, the statistical reading frequency model for that title was applied to that respondent in order to assign a reading frequency to that respondent.

For study specific non-response adjustment rates, please refer to Appendix L.

**Newspapers**

Simmons uses theoretical probabilities based on frequency of reading to estimate the readership of newspapers and newspaper inserts. Respondents are assigned the following probabilities based on the responses given to number of issues read. (Example: Respondents who claim to read 4 of 4 issues are given a probability of 1.0)

<table>
<thead>
<tr>
<th>Sunday Newspaper Readership</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less Than 1</td>
<td>.125</td>
<td>.25</td>
<td>.50</td>
<td>.75</td>
</tr>
</tbody>
</table>

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DESCRIPTION OF METHODOLOGY
THE SIMMONS NATIONAL CONSUMER STUDY (NCS/NHCS)
FALL 2016 ADULT 6-MONTH STUDY
(Late April 2016 – Late November 2016)

Daily Newspaper Readership

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less Than 1</td>
<td>.1</td>
</tr>
<tr>
<td>1</td>
<td>.2</td>
</tr>
<tr>
<td>2</td>
<td>.4</td>
</tr>
<tr>
<td>3</td>
<td>.6</td>
</tr>
<tr>
<td>4</td>
<td>.8</td>
</tr>
<tr>
<td>5</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Simmons reports average issue audience estimates using these probabilities. Once all respondents have been assigned their respective probabilities for a newspaper, the probability for each respondent is multiplied by the weight for that respondent. The average issue audience for a particular newspaper is calculated as the sum of the probability-weight products across all respondents.

Special data assignments are made for respondents who provide incomplete information about their readership of individual titles. Respondents who marked one of the options for number of issues read but who did not mark they screened to the title (i.e. failed to mark “Read or Looked Into in Last 6 Months”) are assigned the missing screener answer for both national newspaper readership and local/regional newspaper readership. Respondents who marked they screened to the publication in the last 6 months but did not mark the number of issues read during that period are assigned a frequency answer. Newspaper data that is collected via respondent write-in (for both non-Hispanic and Hispanic respondents) is key-entered by Simmons using proprietary software. At the time of key entry, the software identifies and deals with missing frequencies through a random assignment process. For national newspapers, the assignment is done using the Cohort Ascription method of assigning the frequency answer from a “best match” donor.

For study specific frequency of reading assignment rates, please refer to Appendix L.

Sunday National Magazines & Comic Inserts

Simmons’ average issue audience estimates for Sunday National Magazine and Comic inserts are compiled based on the results of the carrier newspapers read.

This technique assumes that if the respondent is an average issue reader of a Sunday newspaper that carries a National Sunday Magazine, Comic or newspaper insert, then, the respondent is also an average issue reader of that National Sunday Magazine, Comic or insert. The National Sunday Magazines, Comics and newspaper inserts carry the same probability assigned to the individual newspaper that was read.
CABLE AND BROADCAST MEDIA

Cable Television

Cable television viewing was asked in two parts.

The respondent is first asked about total viewing by individual network. Viewing of English-language cable networks and Spanish-language cable networks is measured in the same manner. The names and color logos of the networks are shown in the questionnaire. For each cable network, the respondent is asked:

- Whether he/she viewed that network in past 7 days.
- Total time spent viewing the network in the past 7 days.
- Time-periods usually watched on a typical weekday.
- Time-periods usually watched on a typical weekend.

Both English-language and Spanish-language cable networks are measured. All respondents – non-Hispanic and Hispanic, English-speaking and Spanish-speaking – are asked about all English-language cable networks. Only Hispanic respondents (both English-speaking and Spanish-speaking Hispanics) are asked about the Spanish-language cable networks.

Within the Cable section of the Hispanic booklet, the English-language cable networks appear together in one subsection and the Spanish-language cable networks appear together in a separate but adjacent subsection. For Hispanics receiving the Spanish-language version of the booklet, the Spanish-language cable subsection appears before the English-language subsection. For Hispanics receiving the English-language version of the booklet, the English-language cable networks appear before the Spanish-language cable networks.

The second part asked about viewing of specific English-language cable television programs.

Programs, organized and identified by network, were listed in the questionnaire. Respondents were asked:

- Whether he/she watched the program in the past 4 weeks.
- If so, whether he/she watched the program in the past 7 days.
- If so, the degree of attention paid to program.
Broadcast Television

Viewing by Daypart:

Respondents were asked about their television viewing for the last five weekdays and last weekend. Respondents were asked to record the following information for each of 25 time periods for weekdays and 19 time periods for weekends: whether they viewed any television during the time period, the total time spent viewing any television, and the broadcast networks viewed. For Total Time Spent Viewing for the last five weekdays, there were five response options: Less than ½ hour, ½ hour but less than 1 hour, 1 hour but less than 2 hours, 2 hours but less than 4 hours, 4 hours or more. For last weekend, there were 3 response options: Less than ½ hour, ½ hour but less than 1 hour, 1 hour or more. For networks viewed, ten broadcast networks were prelisted and the respondent was asked to check any of the individual networks viewed (or “any other stations”) during each time period with any viewing. These questions were the same for all respondents.

Adjustments are performed for the time period viewing data to account for respondent time zone differences. For all respondents residing in the Central or Mountain time zones, adjustments are made for all entries from time period 7 (11AM-Noon) through time period 24 (1AM-2AM). All estimates are reported based on Eastern Standard Time. Any viewing by these respondents is adjusted by 1 hour to reflect EST time.

There are two special time zone adjustment rules: one for the 4PM-5PM time period and a second for the following time periods: 7-7:30PM, 7:30-8PM and 1-2AM.

For all respondents in Central and Mountain time zones that indicated viewing to the 4-5PM day part, a special assignment takes place to assign the one-hour day part between the possible two half-hour day parts (5-5:30PM and 5:30-6PM) for Eastern Standard Time reporting. Targets are established for the two half-hour time periods based on the distribution of viewing for 5-5:30pm and 5:30-6pm for respondents living in the Eastern/Pacific time zone in the current study. Based on the targets, the frequency from the 4-5PM time period could be randomly assigned to both of the half hours, or to only one or the other half hours. Prior to the target-based assignment process, respondents to the 4-5PM day part are randomly placed into the two half-hour day parts.

After this placement, the two half-hour day parts are adjusted to match the frequency distribution of the targets. After the day parts have been adjusted, for respondents in both half hours, a Time Spent Viewing adjustment is made to ensure it does not exceed the maximum time allowed in a half-hour block.

When moving the data from the two half-hour time periods for all respondents that indicated viewing to the 7-7:30PM and 7:30-8PM into the one-hour (8-9PM) time period, if an entry already exists then the program sums the midpoints of the two entries and inserts the appropriate frequency. The same process is followed for the 1-2AM time period, for which the program sums the midpoints of the 1-2AM and 2-5AM time periods and inserts the appropriate frequency.
Missing frequencies (time spent viewing) are randomly assigned to known viewers of the time period, that is, respondents who marked any combination of the “viewed any television” or viewed a specific network/other station, but who did not mark the time spent viewing for that time period. A missing frequency will be assigned if the respondent meets any of the following criteria:

- Respondent marked they viewed a network (or “Other Stations”) for the time period, but failed to mark any other information for the time period
- Respondent marked the first column “screener” for the time period, but failed to mark any other information for the time period
- Respondent marked they viewed a network/other station AND marked the first column “screener” but failed to mark a “time spent” frequency answer

For study details regarding the assignment rates for the time zone adjustment clean and missing frequencies, please refer to Appendix L.

**Program Viewing:**

Viewing information was also collected for specific programs. The Non-Hispanic version of the Personal Booklet collected information on English-language programs. The Hispanic version of the Personal Booklet collected the same information on the same English-language programs. In addition, all Hispanic respondents were asked about an additional list of Spanish-language programs. In the Hispanic version of the Personal Booklet, the English and Spanish programs were measured within the same section. Programs were grouped by frequency of broadcast (daily, weekly, seasonal/sports).

For daily and weekly programs, the respondent was asked:

- How many times he/she viewed the program
  - In the last week for daily programs
  - In the last month for weekly programs
- Whether he/she viewed the program
  - Yesterday (or last Friday) for daily programs
  - In last 7 days (for weekly programs)
- How much attention was paid last time viewed?

For seasonal/sports programs, the questions were:

- Viewed in past 12 months
- Number of times viewed in past 12 months
DESCRIPTION OF METHODOLOGY
THE SIMMONS NATIONAL CONSUMER STUDY (NCS/NHCS)
FALL 2016 ADULT 6-MONTH STUDY
(Late April 2016 – Late November 2016)

For special and program events, all English and Spanish specials were measured within the same section. The questions were:

- Whether he/she watched the last time it was shown
- Whether he/she plan to watch it the next time it is shown

If the respondent did watch a sports special the last time it was shown, he/she was also asked whether he/she watched at home or outside home.

**Telenovelas**

For NHCS subscribers, Simmons publishes estimates for the Hispanic population for viewership of Spanish-language telenovelas by daypart (daytime vs. primetime) for each Spanish-language network. These estimates are calculated from the measurement of individual telenovela titles and an “other telenovela” response option for each network/daypart combination.

**Radio**

A universal grid is used to collect radio listening data. All respondents are asked about their radio listening for the last 7 days. Respondents are first asked to record all of the radio stations that they heard in the last 7 days. Then for each station they recorded, they are asked to: 1) mark whether the station was AM or FM; 2) mark the time periods they heard the station for the last 5 weekdays (Monday-Friday); and 3) mark the time periods they heard the station over the last weekend (Saturday-Sunday). The measured time periods for both weekdays and weekend are 6am to 10am, 10am to 3pm, 3pm to 7pm, 7pm to midnight, and midnight to 6am. In a separate question, respondents are asked about total time spent listening to radio for the same time periods for the last 5 weekdays and the last weekend. For each time period, there were 7 response options: Less than ½ hour, ½ hour but less than 1 hour, 1 hour but less than 2 hours, 2 hours but less than 4 hours, 4 hours but less than 6 hours, 6 hours but less than 8 hours, and 8 hours or more. Finally, all respondents are asked to write in which radio station, of the stations heard in the last 7 days, was the respondent’s favorite station, and to mark whether the station is AM or FM.

A respondent is considered to have “cumed” to an individual weekday or weekend time period by either indicating listening in the applicable Station Daypart question (where specific station mentions were collected by time period), or in the Time Spent question, where total listening by daypart was collected. Additionally if a respondent did not mark any radio listening in the Station Daypart or Time Spent questions, but he or she wrote-in a valid station for the Favorite Station question (heard in last 7 days), then the respondent is considered to have cumed to radio for the Total Week (24-hour) daypart.
Simmons classifies respondents into Quintiles/Terciles and Volume Groups on the basis of their relative volume of usage of a given medium. The classifications are done separately for men and women for each individual medium (or daypart within medium).

To create quintiles or terciles for a medium, male respondents are sorted according to their volume of usage so that the heaviest users are at the top of the list and the non-users are at the bottom of the list. The list of male respondents is then divided into equal-sized groups. In the case of quintiles there are 5 groups, each representing approximately 20% of the male population. In the case of terciles there are three groups, each representing approximately a third of the male population. The same process is repeated for female respondents.

**Quintiles**

Five groups (quintiles) are established, each containing approximately 20 percent of the target population, for magazines, newspapers, radio (drive time and all day), television (primetime, early and late fringe, and all day), cable television, internet, yellow pages and outdoor.

The first 20 percent represent quintile 1, and are the heaviest users. The last 20 percent represent quintile 5, and are the lightest users (which also includes non-users). It is possible that non-users appeared in more than one bottom quintile, particularly for smaller dayparts.

**Terciles**

Three groups (terciles) are established, with each containing approximately one-third of the target population for radio (midday) and television (daytime, early fringe and late fringe).

The first 33 percent represent tercile 1, and are the heaviest users. The last 33 percent represent tercile 3, and are the lightest users (which also includes non-users). It is possible that non-users appeared in more than one bottom tercile, particularly for the smaller dayparts.
DESCRIPTION OF METHODOLOGY
THE SIMMONS NATIONAL CONSUMER STUDY (NCS/NHCS)
FALL 2016 ADULT 6-MONTH STUDY
(Late April 2016 – Late November 2016)

Special Spanish-Language and English-Language Quintiles Groups

The standard “Total” quintiles are calculated separately for males and females for the total base of adult respondents, based on their relative volume usage of the medium – including, where applicable, both English-language and Spanish-language vehicles.

NHCS subscribers have access to additional quintiles and volume groups for Magazines, Newspapers and Cable Television. These quintiles are calculated separately on the basis of the language of the medium, as detailed below:

Spanish and English Cable Television:

Spanish-Language Cable TV Quintiles – Quintiles are calculated separately for Hispanic males and Hispanic females, based on their relative volume usage of Spanish-Language Cable TV. Each quintile represents approximately 20% of the Hispanic population.

English-Language Cable TV Quintiles – Quintiles are calculated separately for males and females for the total base of adult respondents, based on their relative volume usage of English-Language Cable TV.

Spanish and English Magazines:

Spanish-Language Magazine Quintiles – Quintiles are calculated separately for Hispanic males and Hispanic females, based on their relative volume usage of Spanish-Language magazines. Each quintile represents approximately 20% of the Hispanic population.

English-Language Magazine Quintiles – Quintiles are calculated separately for males and females for the total base of adult respondents, based on their relative volume usage of English-Language magazines.

Spanish and English Newspapers:

Spanish-Language Newspaper Quintiles – Quintiles are calculated separately for Hispanic males and Hispanic females, based on their relative volume usage of Spanish-Language daily and weekend newspapers. Each quintile represents approximately 20% of the Hispanic population.

English-Language Newspaper Quintiles – Quintiles are calculated separately for males and females for the total base of adult respondents, based on their relative volume usage of English-Language daily and weekend newspapers (includes national and local/regional newspapers).
Volume Groups

For every reported type of quintile and tercile, the corresponding volume group segments are provided. As with quintiles and terciles, the same sort procedures are implemented for the creation of volume groups, that is, separating men and women, heavy versus light or non-users. However, with volume groups, all non-users automatically define the bottom volume group for men and women. Whenever there were five volume groups, the remaining respondents with usage are divided into four equal groups using the same methodology that is used for quintiles. Whenever there are three volume groups, the remaining respondents with usage are divided into two equal groups using the same methodology applied to quintiles.

Detailed Definitions of all Quintiles/Terciles/Volume Groups

Please refer to the Index to Definitions to find detailed definitions of how the volume usage of each medium is measured for the purposes of the quintiles/terciles/volume group calculations, as well as the definitions of each volume segment.
SAMPLING ERROR

One of the most common questions about research studies concerns the amount of sampling error present in the sample or study. This section describes how to calculate the sampling error for a sample percentage or incidence rate - the most commonly used statistic in most research studies.

The sampling error calculation for a sample percentage is based upon four criteria: the sample size, the probability with which one is willing to make a type I error, the contribution to variance due to the sampling design (known as the design effect) and the actual sample proportion itself. The typical formula for calculating the sample error for a proportion is illustrated below:

\[ P \pm 1.96 \times k \times \sqrt{\frac{P \times Q}{n}} \]

Where
\[ P = \text{the sample proportion} \]
\[ Q = 1 - P \]
\[ k = \text{the design effect} \]
\[ n = \text{the sample size} \]
\[ z = \text{the constant used for 95\% confidence intervals} = 1.96 \]

An example will help illustrate how the sampling error is calculated. Suppose that in a study with a sample of 10,230 respondents it is reported that 24\% of respondents purchased a book in the last 12 months. The design effect coefficient k for any Simmons study can be obtained from the Simmons tech guide – in this case imagine k equals 1.15. Substituting the numbers into the formula we find:

\[ 0.24 \pm 1.96 \times 1.15 \times \sqrt{\frac{0.24 \times 0.76}{10230}} \]

Where
\[ P = \text{the sample proportion} = 0.24 \]
\[ Q = 1 - P = 1 - 0.24 = 0.76 \]
\[ k = \text{the design effect} = 1.15 \]
\[ n = \text{the sample size} = 10,230 \]
\[ z = \text{the constant used for 95\% confidence intervals} = 1.96 \]

Thus an approximate sampling error for this particular incidence rate is plus or minus 0.00952 – that is not quite, but almost, 1\%. Accordingly there is approximately a 95\% chance that the true population proportion lies inside the interval between 0.23048 (that is, 0.24 - 0.00952) and 0.24952 (again, 0.24 + 0.00952). Note that the sample size is an important driver for this interval. If it is the case that the sample proportion comes from a sub-sample of the study – e.g. 24\% of women purchased a book in

---

2 Simmons data is subject to sampling and non-sampling errors. Non-Sampling errors can be found in the limitations section of this document.
the last 12 months, then be sure to use the total number of women in the study as the sample size n, rather than the sample size for the entire sample.

Design effect adjustment factors (values for k) for the Fall 2016 6-month study follow:

<table>
<thead>
<tr>
<th></th>
<th>Unified Sample</th>
<th>Non-Hispanic Sample</th>
<th>Hispanic Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1.72</td>
<td>1.57</td>
<td>2.04</td>
</tr>
<tr>
<td>Males</td>
<td>1.57</td>
<td>1.36</td>
<td>1.31</td>
</tr>
<tr>
<td>Females</td>
<td>1.69</td>
<td>1.56</td>
<td>1.50</td>
</tr>
<tr>
<td>18-34</td>
<td>1.55</td>
<td>1.37</td>
<td>1.33</td>
</tr>
<tr>
<td>35-54</td>
<td>1.52</td>
<td>1.37</td>
<td>1.59</td>
</tr>
<tr>
<td>55+</td>
<td>1.43</td>
<td>1.50</td>
<td>0.97</td>
</tr>
</tbody>
</table>

Simmons calculates design effect adjustment factors using a replication procedure using the replication structure imposed on the sample at the time of its selection.
LIMITATIONS

1. Non-responding and non-reporting persons may have media habits that differ from those of respondents. Therefore, non-responding persons and other limitations in the original designated sample prevent the unweighted sample from being a perfect probability sample.

2. Simmons’ instructions may not always be followed by the telephone interviewer or by the respondents. The recruiter and respondent may not always be under the direct control of Simmons.

3. The sample design and/or response patterns may preclude proportional representation of certain groups within the population such as ethnic groups, racial groups, persons in certain income or education groups, or persons whose primary language is other than English or Spanish. Such persons may have media habits, which differ from other persons.

4. The U.S. Census Bureau population estimates used in designing the sample are based upon the decennial U.S. Census and the U.S. Census Current Population Survey and are subject to all the limitations inherent therein. In addition, these estimates are subject to limitations such as sampling errors, errors in locating undocumented populations and processing and recording errors. Furthermore, annual population updates may be based on the results of sample surveys and are subject to their respective limitations.

5. Self-administered questionnaires may be completed improperly if respondents do not follow the booklet instructions.

6. Human and computer processing errors may occur before or after the self-administered questionnaires are received by Simmons, resulting in data variance which may be greater than that expected from the sampling variance alone.

7. The data upon which Simmons has based its in-tab sample weighting including racial or ethnic identification may not be exact.

8. Situations in which media used the same or similar print titles, call letters, frequency, or show name or have changed the above may have resulted in incorrect media identification by the respondent.

9. Due to methodological or operational changes, changes in survey area definitions or populations, or conditions not under Simmons control, any reported trend estimates may not be comparable.

10. Self-Administered questionnaires may not be received by Simmons due to circumstances beyond our control.
11. Defects and limitations found in data supplied by others (e.g., Nielsen, MSG, etc.) are inherent in Simmons estimates based thereon.

12. Simmons makes no warranties; express or implied, concerning the present or future methodology employed in producing Simmons data. All Simmons data or estimates represent only the opinion of Simmons, and use thereof is at the subscriber’s own risk.