I. SURVEY DESIGN: THE SAMPLE

A. General Description:

The MRI-Simmons sample is a strict area probability sample of adults 18 years of age and older living in private households in the coterminous 48 states. The sample, a multistage, known probability sample, is disproportionately over-allocated within the 13 MRI-Simmons media markets (Atlanta[1], Boston, Chicago, Dallas-Ft. Worth[2], Houston[3], Los Angeles, Miami[4], New York, Philadelphia, Phoenix[5], San Antonio[6], San Francisco and Washington, D.C.) and also within the upper 25% of the national income distribution The former enabled MRI-Simmons to report stable estimates for each of the 13 major markets. The sampling within the upper income population produces larger, more reliable samples, since many of the behaviors measured are more common among upper-income populations.

B. The Sample Frame

The sample frame is a Dynata (formerly Survey Sampling International, SSI) provided computer file of all Census Block Groups (BGs). The entire land area of the US is subdivided into approximately 225,000 Block Groups. These are organized by state, county, tract and BG. Dynata, utilizing an estimating algorithm based on county household income data updated annually, produces a median HHI for each BG. BGs are arrayed by the updated median household income, and the ranges for the upper 25%, the next 25% and the lowest 50% are determined. Each listing in the upper range is assigned a weight of four, each listing in the

[1] Atlanta replaced Cleveland in the sample beginning in the Fall of 2005 (Wave 53).
[2] Dallas-Ft. Worth replaced St. Louis in the sample beginning in the Spring of 1986 (Wave 15).
[3] Houston replaced Detroit in the sample beginning in the Fall of 2015 (Wave 73).
[4] Miami was added in Fall of 2017 (Wave 77).
[5] Phoenix was added in Fall of 2018 (Wave 79).
[6] San Antonio was added in Fall of 2018 (Wave 79).

middle range a weight of two, and the remaining lowest range a weight of one. These weights are used to produce income-weighted household counts used in the selection of primary sampling units and of clusters within the primary sampling units.

C. The Structure of the Sample

The sample consists of three major components: 13 major media markets, each of which is self-representing; and, outside these 13 markets, a sample of core based statistical areas; and a sample of non-core based statistical area counties.

Within each of these, a sample of clusters (i.e., geographically compact areas) is selected. All households located within the cluster are included in the sample. Finally, one randomly selected adult in each of these households constitutes the final sample.

D. Sample Selection (PSUs)

1. Selection of Primary Sampling Units

Step One: List the income-weighted household counts for each core based statistical area (CBSA) and for each non-core based statistical area (non-CBSA) county (exclusive of the 13 markets), ordered by nine geographic Census Divisions, state, and weighted household count to achieve stratification by region, state, and county size.

Step Two: Determine the sampling interval—Divide the total weighted count by eight, since the original design calls for eight clusters in each primary sampling unit. All the CBSA and counties equal-to or greater-than the sampling interval are automatically included as self-representing primary units.

Step Three: Sample the remaining areas using a random starting point (a random number between one and the sampling interval). Systematically apply the sampling interval to

the accumulated, weighted count of the remaining core based statistical areas and counties such that the probability of any non-certainty unit being selected is proportionate to its weighted size.

2. Cluster Selection Rate

A cluster selection rate is calculated for each of the 13 major markets and for each primary sampling unit. This rate is equal to the weighted count for the major market or primary sample unit divided by the number of clusters to be selected. In the major markets, the number of originally ordered clusters is listed below.

As of Wave 77:

New York	*998*		**Boston**	*600*
Los Angeles	*998*		**Detroit**	*600*
Chicago	*998*		**Washington, D.C.**	*600*
Philadelphia	*600*		**Atlanta**	*600*
San Francisco	*600*		**Dallas-Ft. Worth**	*600*
Miami*	*600*		**Phoenix**	*600*
San Antonio	*600*			

In the remaining primary sample units, the originally ordered number of clusters is a multiple of the number of clusters required for each selected PSU. From this set of clusters, a random subset is selected for use in the actual study.

* The Miami market is comprised of the following counties: Broward, Martin, Miami-Dade, Monroe and Palm Beach.

3. Selection of Sample Clusters

Sample clusters are geographically defined compact areas within which the final selection of respondents will be made. Within each primary sampling unit, the ordered listing of addresses are subjected to a systematic, random selection process. Beginning with a random starting point (between one and the cluster selection rate), every *n*th listing is selected by applying the selection rate to the weighted listing count.

Within the non self-representing CBSAs, MRI-Simmons further stratifies the CBSAs into non high-density Hispanic CBSAs and high-density CBSAs within Census Regions, respectively.

Generally, seventeen listings immediately following each initial selection are extracted. The last of these designates the terminal boundary of the cluster. The initial enumeration of the cluster comprises all the listed addresses. Pertinent information, i.e., name, address, telephone number, is extracted and printed for use by the field staff.

4. Designation of Sample Households

All households located within the boundaries established by the first listing and the last listing are included in the sample. In some instances the beginning or the end of a cluster may be located within a multiple-dwelling-unit (MDU) structure. Beginning in Wave 79, units within MDU's are listed by apartment or unit number. If the MDU is the only address chosen for the cluster, the 18 selected units comprise the entire cluster. If the MDU address is chosen as the starting point of a cluster and includes fewer than 18 units, the initially selected unit and all additional succeeding units in the MDU are selected as part of the entire cluster. If an MDU is the last listed address in the cluster, the number of apartment or unit numbers for the sample for that MDU are those that are arrayed first in the sequence until a total number of 18 addresses for the cluster are chosen. In these clusters, no additions can be made. If an MDU

is either not the first or the last address selected for the cluster, all units are selected for inclusion in the sample.

Beginning in Wave 79, MRI-Simmons replaced prelisting these units by surname. Instead, all units within an MDU are sorted by apartment or unit numbers. The interviewer is instructed to sample only those units specifically listed in the sampling frame. This instruction only applies to MDU's that are the first or last address in the cluster or comprise the entire cluster listing.

5. Selection of Sample Individuals

The design calls for the selection of one person 18 years of age or older in each sample household. As the initial cluster lists are prepared, each listed unit is randomly pre-designated with the sex of the prospective respondent. Prior to beginning the selection process, the interviewer asks the household member answering the door whether anyone in the household is affiliated with the media. A positive response eliminates any member of the household from study eligibility. In all other cases, when the interviewer first contacts a sample *household,* the names and ages of *adults of* the pre-designated sex are recorded on a grid that specifies an objective, random selection free of interviewer control. If the household has no adult member of the pre-designated sex (a one-sex household), then all adult names and ages are listed and a sample respondent is selected. Thus there are, in effect, two samples, one of men and one of women, in each of which the respondents are randomly selected from among the adult household members.

II. THE SURVEY QUESTIONNAIRES

Two different questionnaires are used to collect data. Data pertaining to media exposure—that is print (magazines and newspapers), radio/audio and television, digital and other media, and demographic data about the respondent and the household—are obtained in a personal, face-to-face interview. Product and service usage, again both personal and household, are obtained from a respondent-completed product booklet left with the respondent at the time of the personal interview and, in a substantial majority of cases, personally picked up by the interviewer. MRI-Simmons also makes numerous additional attempts, at the telephone validation stage and through other follow-up calls, to retrieve product booklets through the mail. The interviewers personally retrieve some *60% -70%* of all returned product booklets.

A. The Personal Interview

The personal interview, conducted with the specifically selected sample respondent, is the technique used to collect data about the basic media exposure of the respondent and the demographic profile of the respondent and household.

1. Newspaper Reading

The reading of both daily and Sunday/weekend newspapers is measured using an indirect questioning procedure. The questionnaire includes a listing of daily and Sunday newspapers that circulate in the particular area. The respondent is asked which, if any, of the daily newspapers were read or looked into in the past seven days. Then for each newspaper mentioned, a question about frequency of reading is asked.

This is followed by "When was the last time you read or looked into...?" for each daily newspaper read or looked into in the past seven days.

For interviews conducted on Sunday and Monday, "read yesterday" is defined as "last Friday" for a daily newspaper. A comparable procedure is followed for Sunday/weekend newspapers, using a four-week time span in the initial question. The audience measure is based on the number of people who report reading the daily newspaper "yesterday" (or on the most recent weekday) or reading the Sunday paper within the past seven days.

Beginning in Wave 23, MRI-Simmons introduced a separate set of additional questions for Sunday and Monday interviewing. In addition to the standard readership question asking "when last time read," MRI-Simmons also asks the respondent whether he/she read the weekday issues "this Saturday or Sunday." In the case of *USA Today* and *The Wall Street Journal*, MRI-Simmons credits readership if the respondent answers he/she read "this Saturday or Sunday" or "Friday." This procedure accounts for any additional readership of Friday issues of the papers over the weekend.

In addition, questions regarding location of reading and how the newspaper was obtained are asked for the nationally circulated newspapers.

Beginning in Wave 57, MRI-Simmons added select qualitative questions for national newspapers measurement. These are: 1) time spent reading, 2) percent of pages read and 3) overall rating. In order to maintain clarity in the survey, these qualitative questions along with the magazine qualitative questions are asked after the newspaper and magazine readership questions have been administered.

2. Magazine Reading

MRI-Simmons procedure for measuring magazine audiences is a recent reading technique specifically developed for the magazine environment in the United States, taking full account of experiences gained in other countries using similar techniques. The principle of the recent reading technique is that the number of people reading **any** issue of a magazine during its publication period (recent reading) is equal to the total number of people reading any **particular** issue over its total life (average issue audience). Effective Wave 65, MRI-Simmons, asks about both print and electronic reading of the magazine brand. The average-issue audiences for these publications are any reading of the hard or printed copy within the publication period, whether or not the reader has also visited the magazine's website or any other digital source.

It is essentially a two-step procedure. The first step, a screening procedure, serves to eliminate magazines the respondent has not read or looked into in the last six months. The second step, applied only to magazines seen by the respondent in the last six months, ascertains reading within each magazine's publication period.

The interviewer first produces a binder containing sort boards and a deck of cards on which are printed black-and-white logos of some +/- 210 magazines. Black and white reproductions are used following the practice of the past through the book studies. Some magazine logos change color with successive issues while others retain the same color. The logo deck is therefore neutral in this respect. The deck is shuffled in front of the respondent to ensure that it is in random order.

The respondent is then asked to sort the cards on the sort board into three groups, indicating whether they were read or looked into within the last six months. The questioning begins as follows:

“Magazines can be read or looked into in different ways. This card shows examples of some of them. They can be printed on paper or they can be published electronically, such as those read on a computer or on the internet or with an e-reader such as the Amazon Kindle. You may also be able to read or look into a magazine on a tablet, such as the Apple iPad, a cell phone or other mobile device or you may look at the magazine’s website.”

"The titles of magazines and other publications are printed on these cards.”

The interviewer then opens the "in the last six months" sort board and continues:

"This is a sort board. I'd like you to sort these cards into piles on the board to show whether or not you've read or looked into them in the last six months. If you are sure that you have read or looked into the publications, put the cards in this position." The interviewer points to the "yes—sure have" block on the board.

Then, "If you are not sure if you have read or looked the publications in the last six months, put the cards in this position." The interviewer points to the "not sure" block on the board.

Finally, "If you are sure that you have not read or looked into the publications, place the cards in this position." The interviewer points to the "no—sure have not" block on the board.

Before handing over the deck of cards, the interviewer reads the following explanation to the respondent:

"We want to know whether you've read or looked into any copy, whether it belonged to you or not."

"It could have been in your home, someone else's home, or any other place at all, such as the beauty (barber) shop, doctor's office, etc."

"It doesn't matter whether you read it, or just looked into it."

"Please include copies printed on paper as well as electronic versions, such as copies read on the internet or with an e-reader, tablet, cell phone or other mobile device. Also please include reading or looking into the magazine's website. You can use this card as a helpful reference.

The interviewer then hands the deck of cards to the respondent, saying:

"Now, would you sort these cards to show whether you've read or looked into the magazines and other publications in the last six months? Please take your time and consider each one carefully."

Actual card sorting takes some six to eight minutes on average. In-flight publications are screened in a similar way by using separate decks (up until Wave 50, cable publications were also screened in using a separate deck). Additionally, in Wave 52 MRI-Simmons added a Spanish language title deck and procedure.

After the initial sorting, the respondent is asked to read to the interviewer the names and code numbers on the logo cards he/she has sorted into the "yes" and the "not sure"

positions. In addition to retaining the involvement of the respondent, who would otherwise have nothing to do while the interviewer records the results, this has the advantage of removing stray cases of confusion due to initial misreading of the cards, such as New York for The New Yorker, or Four Wheeler for 4 Wheel & Off-Road, and so forth. On average, about 16-17 publications are screened in, with wide variation: some respondents screen in none or very few and others 30 to 40 or more.

The interviewer then asks the frequency-of-reading questions about each screened-in publication: that is, ["On the average, out of 4 issues that are published, how many issues of (Name of Magazine) do you read or look into? Is it 0,1,2,3 or 4?"] This frequency question serves several purposes. First, it gives the respondent an opportunity to say what is most natural to him/her, and what he/she generally supposes the interviewer wants to know—how often he/she reads the particular magazine. Second, it contributes to the process of familiarization with the magazines that have been screened in, a process that begins with the initial sorting. Previous research suggests title confusion is minimized when respondents have multiple opportunities to consider titles that at first sight they think they may have read. Third, the frequency data are used directly to estimate cumulative audiences.

Then the recency question follows. First, the interviewer separates the cards into weeklies, monthlies, and so forth (each publication is identified on its logo card by publication interval), and the corresponding sort boards are opened. (Beginning in Wave 77, MRI-Simmons included quarterly publications, however, they are measured as bi-monthlies.) The respondent is asked to consider very carefully when he/she last read or looked into each publication, excluding today. A date is provided to facilitate the accurate identification of the reading period—for example, for weeklies, "the seven days since last Wednesday" for interviews conducted on a Wednesday; for monthlies, "the 30 days since September 10th" for interviews

on October 10th, and so on. The card for each screened-in magazine is placed by the respondent in one of three positions on the sort board: "Yes, sure have," "Not sure," or "No," and the response recorded by the interviewer.

Only those respondents who place a logo card in the "Yes—sure have" position—that is, those who have read or looked into a magazine during the period equal to its most recent publication interval—are classified as members of the total audience of the publication. The remaining two categories, "No" and "Not sure," are not classified as such.

Upon completion of this second card sort, respondents are asked whether they looked into a paper copy or an electronic version (or both) of each magazine selected as “Yes-Sure Have” in the second sort. Then a series of questions are asked about each publication for which the respondent is classified as a reader, having read the publication within the most recent publishing interval. Respondents who have read a paper version are asked a different set of questions than the electronic version readers. The paper copy questions, sometimes termed the “qualitative” aspects of magazine reading, include place of reading, reading days, reading time, source of copy, percent of pages looked at and rating. The responses to these questions are used to define in-home and out-of-home audience, primary and pass-along readers, reading days, and page exposures. As appropriate, the questions are asked using show cards displaying the range of possible responses. The electronic readership questions include: devices used to read the electronic version or visit the magazine’s website and electronic version or digital reproduction read.

Four versions of the questionnaire are employed. In two, weeklies are listed first, followed by bi-weekly, tri-weekly, monthly and bi-monthly magazines. In the remaining two versions, the order is reversed. Within the publication interval-ordered sets, titles are listed in one version in alphabetical order and in the other in reverse alphabetical order.

3. Radio/Audio Listening

The interviewer displays cards on which are listed five time periods. While showing this card, the following questions are asked:

"Thinking about YESTERDAY, to the nearest half hour, how much time, if any, did you spend listening to or hearing radio or other audio services during the time period of (TIME PERIOD)—either in your home, car or any other place?" and "During the period (TIME PERIOD), what station or stations did you listen to? Please give me the Call Letters of each station and whether it was AM, FM, SiriusXM, the internet or an App." These two questions are asked for "yesterday."

Weekend listening is combined using the following questions: “Thinking about last weekend, that is last Saturday and last Sunday, please tell me whether or not you listened to or heard radio or other audio services on either Saturday or Sunday during the time period of (TIME PERIOD)—either in your home, car or any other place? This time, just say Yes or No for each time period.” and “During the time period of (TIME PERIOD), what station or stations did you listen to? Include listening on Saturday or on Sunday. Please give me the Call Letters of each station and whether it was AM, FM, SiriusXM, the internet or an App.”

4. Television Viewing

The interviewing procedure employed for television is similar to that for radio. A show card indicating a list of time periods is shown and the following question asked: "These are time periods during which people can watch television. To the nearest half hour, how much time, if any, did you spend watching television in each of these time periods yesterday? How about (TIME PERIOD)?"

Unlike radio/audio, time spent is also asked for "last Saturday" and for "last Sunday," providing the basis for audience estimates of time slot and average half-hour viewership for weekdays and weekends.

If the interview is conducted on a Sunday or Monday, then "last Friday" instead of "yesterday" is asked to determine weekday viewership.

5. Cable and Other Television Services

A series of questions is asked to establish:

a. Services household subscribes to [Cable, Satellite, Fiber Optic TV, subscription(s) to one or more streaming services(s), and subscription to streaming service that gives access to multiple TV channels, including live TV)
b. The company through which household accesses programming on satellite dish;
c. Whether Pay-Per-View or Video-On-Demand have been watched in the last year
d. The number of hours viewed for specified cable, broadcast and premium cable channels;
e. Whether the household has a DVR.

Identification of Cable and Fiber Optic TV Service Providers

Beginning with Wave 77, MRI-Simmons has begun identifying the Cable and Fiber Optic TV providers for respondents of the national survey. Every wave approximately 5,500 Cable TV respondents and approximately 1,500 fiber optic TV service providers are assigned to respondents who stated that they subscribed to either of these two TV provider systems. These provider assignments are conducted by a GfK company division, Etilize. They conduct their research by matching respondent addresses from the sample, to each cable and fiber optic TV provider available in their geographic area. The final numbers are compiled into the largest companies throughout the country; all others that do not have intab high

enough to be stable or have a very high level of regionality are rolled into the Other response (punch).

6. Outdoor Travel

   A series of questions is asked to establish:

   a. Miles traveled in past week, past month.

7. Public or Civic Affairs/Politics

   The following questions are asked:

   a. Activities participated in last 12 months relating to public or civic affairs;

   b. Political outlook;

   c. Political parties affiliated with.

8. Online Services/Internet Usage

   A series of questions is asked to establish:

   a. The availability and use of the internet;

   b. How connected to the internet at home;

   c. Which Internet Service Provider household subscribes to;

   d. If no internet in household, any alternative access locations;

   e. Connect to internet via Wi-Fi, wireless connection or Cell phone Smartphone/other mobile device

   f. Activities on the internet;

   g. Search engines used;

   h. Chat, Instant Messenger, or video chat services used;

   i. Social media, photo or video-sharing services visited/used;

   j. Activities using social media, photo or video-sharing service;

   k. Time spent using the internet yesterday/Saturday/Sunday (not including IM);

l. Specific websites/apps visited (in past 30 days).

9. Video Game Systems

a. Household owns any video game systems;

b. Online video game services personally played or used in the last 30 days.

10. Demographic Information

A complete set of demographic characteristics of the respondent, the household head and the household itself is obtained. For respondents, this includes age, sex, marital status, occupation, industry, household and individual employment income, education, household composition, race, sexual orientation, gender identification and home ownership.

This information is obtained by using straightforward questions and show cards that contain the range of possible responses. The recording of the replies requires minimal effort on the part of the interviewer, since responses are pre-coded on the questionnaire in the same manner as on the show cards.

B. Product Booklet

Data on usage of an extensive range of goods and services are obtained using a product booklet completed by the respondent and, if the respondent is not the Principal Shopper, the Principal Shopper. Upon completion of the media and demographic personal interview, a product booklet is left with the respondent. A ten-dollar incentive was *initially* offered for its completion through Wave 34. *In Wave 38, MRI-Simmons conducted additional retrieval efforts (in-person, over the phone or by mail) among non-respondents to the initial product booklet attempts. In these cases, MRI-Simmons offered a $50 incentive for completion. These additional efforts at product booklet retrieval are now part of MRI-Simmons standard protocol for collecting product booklets.*

Currently, MRI-Simmons offers a range of incentives from $40 - $100 for completing the product booklet. In most cases, an appointment is made for the collection of this questionnaire. If necessary, additional efforts, such as those discussed above, are made to retrieve the self-administered questionnaire via mail. In general, this questionnaire is designed to measure:

1. Ownership and/or use of products or services;
2. The brand (kind, type, variety, etc.) used;
3. Quantities used within specified time periods;
4. Participation in the decision to buy or use.

Product data are of two types: personal product questions answered by the respondent and household product questions answered by the Principal Shopper (who may or may not be the respondent).

Although questions are necessarily tailored to particular subjects, every effort is made to use standardized wording and standard time frames, as well as to ask simple, unambiguous questions. The product booklet is also designed to minimize the amount of recording entry by respondents. Whenever possible the product booklet is constructed so that a check mark or a number completely records the response.

In addition, viewing of network TV programs, sports, and specials is also obtained in product booklet. And, a series of psychographic type questions are also included in the product booklet.

III. THE SURVEY EXECUTION

MRI-Simmons works with LHK Partners to develop the protocols for executing the study, including training and evaluating the field staff.

A. Staffing the Fieldwork

The study is conducted by a staff of some 100-125 interviewers recruited, trained, and supervised by eight LHK field supervisors and a staff of eight recruiters and trainers who are, in turn, directed and supervised by a full-time Field Director and the two LHK senior partners. Since the study is continuous, a great deal of effort is expended to recruit, train and maintain an experienced field staff. The performances of supervisors and of interviewers are reviewed continually.

Until Wave 73, all interviews were conducted using paper and pencil. Beginning with Wave 73, MRI-Simmons introduced computer assisted personal interviewing (CAPI), which enabled interviewers to conduct the survey with a tablet. In Wave 75, over 3000 interviews were conducted using CAPI. In Wave 76, over 6000 interviews were conducted using CAPI. As of Wave 81, 9289 interviews were conducted using CAPI.

Prior to each wave, training materials, including manuals and a taped model interview are prepared, in addition to the questionnaires, show cards, sort boards, and other materials needed for the execution of the interview.

As of Wave 74, MRI-Simmons only trains new interviewers on CAPI; no new interviewer is trained for conducting the interview with paper and pencil (PAPI). All interviewers receive continuous training and each new Wave are required to participate in a session designed to instruct the interviewers on updates to the survey or changes in procedures. New interviewers are required to attend an extensive new interviewer workshop. Included in the training are instructions on locating and listing the geographic cluster, making the initial contact, selecting the sample respondent, and executing the survey. Interviewers are instructed in the handling of difficult or unusual interviewing circumstances, including gaining access to gated communities and restricted access apartment buildings. Interviewers assigned to large

apartment buildings are instructed accordingly. Interviewers are briefed on the organization and planning of callbacks and the importance of gaining the cooperation of respondents.

Continuous quality checks are undertaken during the course of data collection and appropriate action is taken when necessary. No new interviewer may begin interviewing until he/she has been judged acceptable by the LHK trainers. The work of each interviewer is validated by telephone, or by mail or, on occasion, by personal contact. In practice, MRI-Simmons achieves approximately 40%-50% validation rate.

LHK Partners maintains frequent contact with the field supervisors, who in turn maintain similar contact with the interviewers. In this manner, tight control is maintained over the flow and the quality of the work. The computerized control system employed by MRI-Simmons/LHK Partners has a complete record, organized by cluster, of the entire sample which provides information about the current status of every cluster in the study.

B. Data Collection

The listed addresses for each cluster, as described in the "Selection of Sample Clusters" section form the foundation of interviewing. The interviewer interviews only households in addresses provided in the sample. If the listing contains a multiple dwelling the interviewer proceeds to the dwelling and describes its layout and then provides LHK Partners with the names and apartment numbers, if possible, based on the alphabetic interval chosen in the sample. The lists expanded by this method are used to make a mailing to all known, prospective respondents explaining the nature of the study and emphasizing the confidential nature of responses.

The sample then comprises all listed dwelling units in listed addresses starting with the initial dwelling and continuing to and including the last dwelling.

Beginning in Wave 79, MRI-Simmons replaced prelisting these units by surname. Instead, all units within an MDU are sorted by apartment or unit numbers. The interviewer is instructed to sample only those units specifically listed in the sampling frame. This instruction only applies to MDUs that are the first or last address in the cluster or comprise the entire cluster listing.

In Wave 76, MRI-Simmons changed personal interview incentives to one of the three possible incentives: $40, $50 and $75. The incentive amount is based on analysis of historical response rates using the PRIZM geo-demographic segmentation.

MRI-Simmons attempts as many as five or more additional calls at different times and on different days in order to contact "difficult-to-reach" respondents, but sometimes interviewers are unable to complete all five additional attempts for each household. In some instances, "traveling interviewers" must leave the cluster or primary sampling unit before all desired attempts could be made.

LHK attempts to assign interviewers with Spanish-speaking capabilities to areas known to have substantial Spanish-speaking populations. MRI-Simmons does not, however, specifically assign a bilingual interviewer in every instance requiring bilingual capabilities. When necessary (but on rare occasions), we rely on another household member to translate the questions into another language (e.g., Spanish) for the selected respondent. Beginning with Wave 48, the MRI-Simmons personal interview and product booklet were made available in both English and Spanish.

LHK continually recruits bilingual interviewers. In addition to the standard new hire training, bilingual interviewers are required to meet specified standards before being certified to interview in Spanish.

The sample respondent is selected by the established procedure. The interviewer lists, from oldest to youngest, all adult respondents of the pre-designated sex currently living in the household and then follows computer-generated instructions to select the respondent. On average, approximately 60 minutes is required to complete the personal interview.

Upon completion of the personal interview, the product booklet is introduced and the respondent is asked to complete it; the respondent is briefed on how to complete the product booklet, and arrangements are made, in a majority of cases, for the interviewer to retrieve the completed product booklet at a specified time and date.

As of Wave 76, respondents were offered $40/$50/$75/$100 to complete the product booklet. Respondents who haven't completed the booklet by a certain date may receive secondary or tertiary offers, to a maximum of $100. Also, in a number of pre-designated and/or hard-to-reach clusters the initial incentive has been and will remain $75.

In Wave 80, beginning in April 2019, to assist with production, MRI-Simmons increased personal interview and product booklet incentives for the Survey of the American Consumer as follows:

- Originally designated $25 clusters increased to $50 for interview and $50 for product booklet (from $40)
- Originally designated $40/$50 clusters increased to $100 and $100 for product booklet (from $40/50)
- Originally designated $75 clusters increased to $125 and $100 for product booklet (from $75)

C. Data Processing

All of the data collected using the two basic survey questionnaires are processed as described below, and all data then reside as data files. Access to these files is afforded to subscribers for the further tabulation of data.

1. Initial Editing and Coding

All completed personal interviews are reviewed by LHK Partners to ensure the interviewers are executing the study properly. Interviews that fail to meet completeness and internal consistency checks are referred to the field for correction. Most data are self-coded with the exception of items such as names of newspapers and occupations. In addition, internal editing checks are applied to ensure interviewers are following instructions. The results of these editing checks are communicated back to the field personnel. The product book is also checked, since it must meet completeness standards to be included in the study.

2. Data Capture

Two separate operations are utilized for data capture: one for the personal interview and another for the product booklet. Key entry of PAPI interviews are 100 percent validated. The product booklet is subjected to a minimum of 25% validation, with additional validation as may be required. All of these data are eventually combined into a single set of data files.

3. Data Ascription

The sample comprises all respondents who are personally interviewed. On average, about 57% - 59% of these respondents also complete the product booklet. In order to avoid problems created by shifting bases, an ascription process for product booklet non-respondents is utilized. This process is embodied in a computer program that finds the best match between a non-booklet respondent and a booklet respondent. "Best match" is defined as a pair of respondents who most closely resemble each other on a prioritized list of critical variables

including sex, geography, age, education, family status, and other demographic and behavioral items. Once the best available match is identified, the product booklet data of the responding member of the pair are assigned to the respondent who did not complete the product booklet.

a. Special Personal Computer/Cell Phone/ In-Home Internet Access/Pet Ownership Ascription

MRI-Simmons collects data for personal computers, cell phone ownership, in-home internet access and pet ownership in the media/demographic booklet (the personal interview) and the product booklet. Special ascriptions are used for respondents who provide conflicting information.

The basic premise for these ascription procedures is that the information provided by the respondent in the personal interview overrides the information provided in the product booklet.

For example, if a respondent indicates no to household computer ownership in the personal interview but indicates yes in the product booklet, the information provided in the product booklet is removed. This holds true for cell phone ownership, internet access and pet ownership.

If a respondent indicates yes to household computer ownership, cell phone ownership, in-home internet access, pet (dog and/or cat) ownership in the personal interview but indicates no or no answer in the product booklet, then the product booklet data for those variables are ascribed from a donor who responds yes to any of these questions, respectively, in the personal interview.

For the personal computer ascription, the donor is selected by placing each potential donor (a respondent who indicated yes in both questionnaires) into one of eight cells based on sex and geography (2 sex by 4 geography). The geographic variables are the North East, Midwest, South and West Census Regions.

Selection of a specific donor within these cells is performed identical to the process for selecting donors in product booklet ascription described above. Accordingly, special personal computer ascription is essentially performed twice, once for household computer ownership and once for personally using a computer at work. Consistent with product booklet ascription, the maximum number of times a donor can be used is **three.**

The cell phone, in-home internet access and pet ownership ascriptions work on a similar principle. However, because these are household use/ownership questions, a limited number of variables (e.g. age, sex of Principal Shopper, household income, presence of children) is used. Once again, the maximum number of times a donor can be used is **three**.

b. Special Ascription Pertaining to Psychographic Batteries

MRI-Simmons has historically released psychographic data for only those respondents who have completed all or almost all of the battery of questions in that topic area (e.g., Buying Styles). This restriction necessarily led to a unique sample balancing solution for each of the batteries and, in turn, unique weights for each psychographics sub-sample. Accessing these bases and unique weights had the potential to cause confusion and tabulation errors among our users. Beginning in Fall 04, MRI-Simmons employed a new ascription procedure that allowed users to access almost all of MRI-Simmons psychographic batteries using a single population weight.

The new ascription procedure uses the following three-step approach to ascribing items for a given psychographic battery:

1) For those who filled out at least one item within the battery, the missing items are ascribed collectively based on respondents' responses to other psychographic items, as well as their responses to both demographic and behavioral questions

2) For those who returned the product booklet and did not answer any items within the battery, the missing items are ascribed collectively based on respondents' responses to only demographic and behavioral questions

3) For those who did not return the product booklet, all psychographic batteries are ascribed collectively based on MRI-Simmons traditional product booklet ascription procedure.

This ascription procedure is currently used for the following psychographic batteries: Intent to Purchase, Buying Styles, Category *INFLUENTIALS℠* Segments (first released in Wave 58), Category-Specific Attitudes (Automotive, Food, Finance, Vacation Travel, Technology, Media), Cellular/Mobile Opinions (first released in Wave 58), Consumer Confidence, Fashion & Style Attitudes (first released in Wave 58), Health Attitudes, Intent to Purchase, Interest in Advertising, Interest in Sports (first released in Wave 53), and Alternative Advertising Places (first released in Wave 55).

c. Special Ascription for Spanish Television Programs

The addition of measured Spanish television programs in the product booklet created a special ascription procedure. All analyses of these data indicated that Spanish-language capability was the critical predictor for viewing these programs. Accordingly, MRI-Simmons modified the ascription process for these variables by adding language spoken in home as a required variable in the ascription process.

d. Product Booklet Hispanic Ascription

Beginning in Wave 77, MRI-Simmons separated the product booklet ascription process into two demographic categories: Non-Hispanic and Hispanic respondents. The ascription process, including all variables, for Non-Hispanics remains the same as before. To account for

the growing number of Hispanic respondents in the National sample, MRI-Simmons created a separate ascription process. The ascription process maintains all of the variables used in our current ascription algorithm and adds language spoken in the home as another matching variable. For product booklet Hispanic ascription, beginning in Wave 77, the maximum number of donor use was increased from three to four or five.

4. Database Merging

In addition to the questionnaire items, a considerable amount of additional information is developed for each respondent by incorporating other databases. There are three major types:

a. Geographic Classification: For each interviewing wave, a master file for each cluster in the sample is available details the following:

1) Geographic division and region;
2) County size;
3) Metropolitan area (Core Based Statistical Area - CBSA);
4) DMA and metropolitan area classification;
5) Zip code;
6) Local area median income

These data are incorporated in the record of each respondent.

b. Media Classification Data: Three industry-prepared databases are used to provide media classification data. These are:

1) A file of carrier newspapers for newspaper-distributed magazines (Parade, Sunday Magazine) and comics (Metro-Puck);
2) A file of radio stations detailing formats and network affiliation for each station;
3) A magazine file containing subject matter classification for each surveyed

magazine.

The data on these files are merged into the respondent data file for each wave so that each wave is as current as the industry source.

c. Geo-demographic Life-Style Classification: Proprietary systems of classifying populations by geo-demographic and lifestyle parameters have been developed. Each wave of MRI-Simmons data is processed through these systems and the appropriate classifications are incorporated in the database. Subscribers to these sources may have access to these classification systems on the MRI-Simmons database and utilize their conceptual structures on MRI-Simmons data.

5. Projection

MRI-Simmons reports have been designed to quantify media and marketing behavior of the adult household population. This is accomplished in two stages: weighting, which is the fulfillment of the sample design; and sample balancing, the precise tuning of major study demographics to the most recent independent estimates.

a. Weighting

If a sample were to be selected by choosing, say, every **tenth member of** a population, then the sample result could be projected to the population simply by multiplying by **ten**. In general, if N is the sampling interval—that is, every N^{th} member of a population is selected—then N times the sample result is a straightforward, unbiased estimate of the population. This is how the MRI-Simmons sample is weighted. However, since the sample selection is a multistage process, the weighting, which is essentially the reciprocal operation, must also be multistage. The original sample is selected separately and independently for the separate strata. In addition, the male and female portions constitute separate samples. Therefore, weighting (and subsequent balancing) must be undertaken for each of these separate populations. Within these strata the following factors are evaluated as part of the weighting:

1) Income Strata:

   Because of differential sampling rates, respondents in the three income strata are assigned weights equal to the reciprocal of the sampling rate, adjusted for differential sample recovery.

2) Number of Persons of Designated Sex:

   Since each respondent is selected at random from all adults of the designated sex in the household, each respondent is weighted by this number. For example, a male respondent in a household with two male adults has a 50% probability of selection and therefore has a weight of two.

3) Two Residences:

   Persons dividing their time between two residences during the four weeks preceding the interview have two chances of being included in the sample. They are therefore assigned a weight of .5.

4) One- and Two-sex Households:

   By design, two-sex households have a 60% chance of being included in the male sample and a 40% chance of being included in the female sample. One-sex households are included with certainty. Respondents in these households are weighted to reflect this differential.

5) Non-response Factor:

   Non-response adjustment factors are applied on the basis of income stratum and the 13 media markets vs. the balance of the sample. These factors are equal to the ratio of eligible respondents/completed respondents, calculated separately within the cross classifications of the three income strata and the two major geographic strata.

The product of these five factors yields the intrinsic sample weights which, multiplied by the projection factor for each stratum, produces the sample weight. The projection factor for any stratum is the independent estimate of its population divided by the sum of the corresponding intrinsically weighted respondents.

b. Sample Balancing

Sample balancing is a widely accepted and used technique in sample surveys. It was first discussed thoroughly by W. Edwards Deming in his book ***Statistical Adjustment of Data***. Sample surveys produce a large number of estimates. In some instances, more reliable and more precise estimates are available from other sources; either from larger, more comprehensive samples or from total counts and censuses. For example, a sample survey can produce an estimate of the population by age. However, the Bureau of the Census reports data on the age distribution more accurately and precisely than most other sources. Sample balancing is a technique for incorporating into a sample survey's results the estimated counts from an external or independent source. The rationale is that this type of incorporation improves the accuracy and precision of the sample survey. As with sample weighting, the basic idea of sample balancing is quite simple.

Consider a basic illustration: A sample survey estimates 4,500 men and 5,500 women in a particular population. A valid, reliable, independent source reports 4,700 men and 5,300 women for the same population. If the weight assigned every male respondent is multiplied by 47/45 and that of every female respondent by 53/55, the resultant estimates will conform to the desired distribution between men and women. This is termed a ratio adjustment; i.e., multiplying each weight by the ratio of the desired number to the obtained number. As such, it has a very important advantage: namely, it is a least squares adjustment. This means the sum of the squared difference between the original and the final weights is smaller than that of any

other type of adjustment producing the same results. The change necessary to obtain the desired result has been held to a minimum, and the maximum amount of the original weight structure has been maintained.

Sample balancing is simply a series of successive and reiterative ratio adjustments—successive in that only one set of factors such as age or sex can be balanced at one time, and therefore there is a succession of them. It is reiterative because each successive adjustment partially obfuscates the previous ones. Therefore, the process of balancing all the variables is essentially one of successive adjustments and is repeated until the desired parameters are obtained.

The MRI-Simmons sample is balanced within sex on the following sets of population parameters:

1. 13 media markets;
2. Remainder of the country by metropolitan versus non-metropolitan areas within Census Region;
3. DMA Size;
4. Age;
5. Household income;
6. Education;
7. Employment status and occupation;
8. Race within region;
9. Marital status;
10. County size;
11. Marketing region;
12. Household size;

13. Hispanic Origin within region (Added in Wave 35);
14. Language personally spoken in the home – Hispanic respondents only (Added in Wave 64).

Each wave of fieldwork is weighted and balanced separately to population estimates corresponding to the midpoint of the fieldwork for that particular wave. The independent sources of data used for sample balancing are the U.S. Bureau of the Census (beginning with Doublebase 2008, MRI-Simmons began using the Public-Use Microdata Samples (PUMS) data for establishing targets for the local markets), Claritas, Employment and Earnings (a monthly publication produced by the Bureau of Labor Statistics), and Nielsen's universe estimates of language use among Hispanics.

6. Final Weight Trimming

The sampling tolerances associated with a given sample are affected by the distribution of weights. In particular, extremely high weights disproportionately increase sampling error estimates. Therefore, after sample balancing, the distribution of weights is inspected and respondents with weights greater than 5.75 average weight are each assigned the average weight for the respective group. Weight trimming effectively reduces the highest weights, in turn reducing the sampling error. MRI-Simmons also trims the weights of all respondents whose weight is under 1,000.

7. Household Weight

Each household's weight is obtained by dividing the population weight by the number of adults in the household.

8. Rebalancing the Doublebase

Each year, to prepare two years' data for release, the four most recent waves are subjected to additional sample balancing, incorporating demographic and geographic estimates

for each of the 13 major markets along with the national demographic and geographic estimates employed in the initial balancing.

A Special Note About Wave 82 Sample Balancing

The specific details for sample balancing the two components of the Wave 82 data, in-person interviewing and online interviewing, are discussed in their respective Technical Guides. After each database was separately weighted and sample balanced, MRI-Simmons combined the two databases, with each one representing 50% of the total Wave 82 projected population. This process was accomplished using all sample balancing variables. With the exception of the employment/occupation variables, all variable targets were the same for each component.

D. Audience Estimating Procedures

1. Magazines

a. Total Audience (average issue audience): Through Wave 81 (survey period ending in November 2019), the calculation and tabulation of the total audience of a magazine includes all respondents who read a paper copy of the magazine during the past N days, where N is the publication interval of the magazine (7 for weeklies, 30 for monthlies, etc.). These responses come from the card-sorting technique described in Section II of this guide. Beginning in Wave 82, MRI-Simmons introduced a probability of reading calculation for the average issue audience by combining the recent reading question with the screen (read in the past 6 months) and frequency of reading answers. MRI-Simmons made this decision to enhance the reliability of magazine profile estimates by including more respondents in the tabulation of the average issue audience. In addition, the probability of reading calculation also improves the stability of magazine profiles wave-to-wave.

- **Probability of reading calculation for average issue audiences:** MRI-Simmons calculates an underlying probability of reading the average issue by dividing the claimed readership within the publication period within the frequency of read claim derived from the six month screen response. The probabilities are developed empirically and described below:

- **Probability of Readership:** Each Screener is assigned a "probability" (fraction) of readership, contributing to the overall readership profile**.**

    - **Screener:** The claimed weighted number of respondents who read or looked into a publication within the past six months.

    - **Frequency of Reading:** The claimed frequency of reading x number of issues out of an average 4 published issues of a magazine. The answer choices are 0, 1, 2, 3 or 4.

    - **Recency:** The claimed weighted number of respondents who read or looked into a magazine within the magazine's publication interval. This continues to be used to establish Average Issue Audience estimates.

    - **How Probability is Calculated:** Probability of readership is calculated using empirical data on the percentage of readers at each frequency level.

        - To avoid potential issues with small sample sizes for each frequency subset, probability calculations are based on using data for approximately 48,000 respondents from the current wave and the prior 3 waves.

        - The Probability Model assigns fractional probabilities of reading to each frequency level.

        - The Probability Model ensures scaled results reflect the readership to an Average Issue based on Recency of Reading.

- To reflect Recency of Reading, probabilities are ratio-adjusted to match total wave recent reading audiences by male and female, respectively.

- Ratio-adjusting the probabilities in this fashion retains the benefits of the recent reading methodology ,maintaining MRI-Simmons' historical calculation of average -issue audiences for adults, men and women.

Main Difference Between Recent Reading and Probability Model

- **Recent Reading Model:** The Recent Reading Model assigned 100% probability to anyone who read an issue in the most recent publication period and 0% probability to everyone else who claimed reading in the past six months.

- **Probability Model:** The new, Probability Model assigns a probability between .01%-100% of reading to all persons who have read the magazine in the past six months using magazine specific empirical data from current and previous surveys.

Refining the Probabilities

- **Readers within Frequencies Differ:** All readers within a frequency level are not alike and therefore the probabilities are further refined.

  Example: For Magazine X, screeners who indicated 1 out of 4 frequency have a probability, on average, of .26, but respondents within the magazine's target demographic may be somewhat more likely to read (e.g. .28), while other demographics may be less likely to read (.22).

Controls for Dominant Characteristics: MRI-Simmons creates 90 unique cells of estimated probabilities based on the most important explanatory variables for predicting the likelihood of reading an average issue. These cells were developed using a logistic regression

procedure which showed frequency of reading, gender, age and household income to be the most salient predictors of reading in the publication interval.

Qualitative Measures: Since the Survey's questioning procedures are unchanged, magazine qualitative questions (e.g. time spent reading, where read, how obtained, etc.) are only asked of recent-readers. This necessitates our ascribing qualitative questions to those respondents who screened into a title but did not become recent readers. Our analysis showed that qualitative estimates post-ascription are extremely consistent with the pre-ascription levels.

b. Primary Audience: The primary audience of a magazine is defined as readers who live in a household in which the magazine was obtained by either subscription or newsstand purchase. During the personal interview, questions are asked about how the magazine was obtained and who obtained it. Generally, purchase and subscription tend to be over claimed. When over claims exist, the accuracy of these estimates is improved by randomly reducing the number of purchasers and/or subscribers to the known circulation and the number of other primary readers to the same level.

c. In-Home Audience: Respondents are asked where the reading of the most recent publication interval took place and are shown a list of possible places. Those responding "at home" are classified as "in-home readers."

d. Magazine Groups: In some instances, individual magazines are reported as parts of magazine groups. For the most part these are gross audiences—the sum of the audiences of the constituent magazines.

e. Cumulative Audience: During the personal interview a frequency of reading question (0, 1, 2, 3, or 4 of the average 4 issues) is asked. Responses to this question, along with the responses to the publication-interval reading question, are used to estimate, first, two-issue

reach and, second, reach and corresponding frequency for any number of issues greater than two.

This can best be shown by an illustration:

TABLE 1

	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
Frequency of Reading Answers	*Total In tab*	*Read In tab*	*Pct. Read Within*	*Pct. Not Read Within*	*Pct. Non-Read 2 Issues*	*Pct. Read 1 or 2 of 2 issues*	*No. Read 1 or 2 of 2 issues*
0	200	2	1.0	99.0	98.01	1.99	4
1	100	10	10.0	90.0	81.00	19.00	19
2	100	38	38.0	62.0	38.44	61.56	62
3	200	100	50.0	50.0	25.00	75.00	150
4	400	300	75.0	25.0	6.25	93.75	375
Screens	**1000**	**450**					**610**
Non-Screen	**9000**						

This table reads as follows:

Columns 1 and 2 are the basic survey data.

Column 3 = Column 2 / Column 1 The percent of each group reading

Column 4 = 100.0 - Column 3	The percent not reading
Column 5 = (Column 4)^2	The probability of not reading either of two
Column 6 = 100.0 - Column 5	The percent reading at least one of two issues
Column 7 = Column 6 X Column 1	The number reading at least one out of two issues

The foregoing is straightforward probability mathematics used to estimate higher orders of reach. However, there is a limitation to this method: the calculated cumulative audience, no matter how many issues are considered, could never exceed total screenings, in this instance 1000. This is an artificial limit. Another approach, the widely used “beta binomial," does not have this limitation. Briefly stated, the beta binomial method assumes a continuous distribution of probabilities of reading from 0 to 1 (compared to the 5-point distribution), and the solution is in fact the integral or sum of all of these probabilities, extended to the appropriate number of issues. The data required for this solution can be obtained directly from a two-issue measurement. Moreover, the solution is in fact simpler than the straight binomial expansion, particularly for more than two issues:

C_1 = proportion reached by one issue

C_2 = proportion reached by two issues

$A = (C_2 - C_1) / (2 \times C_1 - C_2 - (C_1)2)$

$B = A \times (1 - C_1)$

The proportion reached by *t* issues, *C*, is:

$$Ct = Ct\text{-}_1 + (B + t - 2) / (A + t - 1) \times (Ct\text{-}_1 – Ct\text{-}2)$$

Using the formula and the above illustration,

C_1 = .045, C_2 = .061, A = .593, B = .566

This produces the following results:

Cumulative Audience

Number of Issues	Proportion Reached
3	.0707
4	.0776
5	.0829

The frequency distribution for any reach can be obtained by using the same set of input in a slightly different format: Let D = A - B. Then the formula for obtaining the frequency **s** out of a total of **t** issues is:

$$R_s^t = \frac{D+s-1}{B+t-s} \text{ x } \frac{t-s+1}{s} \text{ x } R_{s-1}^t$$

where initially

$$R_1^t = \text{t}(C_t - C_{t-1})$$

It should be borne in mind that all extensions beyond the empirical data are hypothetical and although useful, based on assumptions that may or may not be warranted. These assumptions are:

1) Each issue has the same audience.

2) The turnover (or its corollary, the duplication) is the same between every pair of issues.

The method is useful, therefore, when the audience of a magazine is reasonably stable. The method can also be applied to demographic and marketing segments of the audience, although as the bases become smaller, reliability tends to decrease. Moreover, an additional assumption; i.e., fixed composition, is now implied.

2. Newspaper Audiences

a. Daily Newspaper Audience: All respondents who read a paper copy of the daily newspaper yesterday (or on the most recent weekday).

b. Sunday/Weekend Audiences: All respondents who read a paper copy of the Sunday (weekend) newspaper within the past seven days.

c. Newspaper Cumulative Audience: Cumulative audiences of newspapers are obtained using a frequency question in the same manner as magazines.

d. Newspaper-Distributed Magazines: The audiences reported for newspaper-distributed magazines are the measured audiences of their carrier newspapers, which is standard practice in newspaper research.

3. Broadcast Data

Data are collected for both radio and television for an average weekday (based on yesterday or last Friday) and for each of the most recent two weekend days. With exception of weekend radio listening, the number of half-hours watched (listened) within major time slots is obtained. This is used to produce two types of data:

a. Cumulative audience: The total number of people viewing (listening) within a day or daypart. In addition, radio estimates are obtained by format and network.

b. Average half-hour audience: The average half-hour audience within each time period is obtained from a weighted average; i.e., the number of half hours viewed divided by the total number of half hours in the time period.

c. Television program audiences: Viewing of current television programs is obtained using a series of respondent-completed questions in the product questionnaire. These questions are:

1. How many times a (month) (week) do you usually watch... (followed by a list of weekly or daily programs).

2. *Did you watch the program in the past seven days (yesterday)?*

3. *If you watched the program in the past seven days (yesterday), how much attention were you paying?*

4. *If you watched the program in the past seven days (yesterday), where did you watch it? The responses to these questions are used to develop audience estimates for programs ("Yes" to watched in the last seven days, or yesterday for daily programs). The frequency question is used to develop cumulative audiences, and the other two questions are used to produce estimates of in-home audience and degree of attentiveness.*

4. Cable and Broadcast Networks

The following question is asked to all respondents for a list of 130+ cable and broadcast networks and seven premium cable channels:

a) Have you watched in the past 30 days?

b) About how many hours have you watched (network) in the past 7 days?

Responses are used to develop both weekly cumulative audience estimates and average number of hours-per week estimates for individual cable, broadcast and premium channel networks.

5. Internet/Online Usage

A series of questions are asked about internet availability and usage in the last 30 days, place of access, activity on the internet. Similar questions are asked about using or looking at an online service in the last 30 days.

These responses are used to develop estimates of:

a. Internet available in home;

b. How connect to internet from home;

c. Where internet used in the last 30 days;

d. Device(s) used to look at internet in the last 30 days;

e. Internet activities done in the last 30 days;

f. How often look at or use internet yesterday/Saturday/Sunday;

g. Internet Service Providers household uses to connect to internet;

h. Search engines used (last 30 days)

i. Chat, Instant Messenger, or video chat services used (last 30 days)

j. Social media, photo or video-sharing services visited/used (last 30 days)

k. Activities using social media, photo or video-sharing service (last 30 days)

l. Web sites or Apps visited last 30 days (85+ websites/Apps)

6. Quintiles

Quintiles of exposure to the six media are generated from the recorded data, separately for men and women. In each instance quintiles are generated so that, if required, a single frequency may be assigned to either adjacent quintile. The specific definition for the quintiles is based on the most recent wave of data. These are contained in the appendix of this guide. The measures used to define these are as follows:

a. Magazines: The total number of magazines read in a 30-day period, obtained by weighting reading a weekly by 4, reading a bi-weekly by 2, reading a tri-weekly by 3, and reading a monthly by 1, etc., and then summing the total of these weights.

b. Newspapers: The number of newspapers read in a 28-day period, obtained by multiplying the number of daily newspapers “read in the past week” (using issue frequency claims times “read yesterday” newspapers) by 4 (the number of weeks in a 28-day period) and multiplying the number of weekend/Sunday newspapers ”read in the past 4 weeks” (using issue frequency claims times “read in past 7 days” weekend/Sunday newspapers) by 1, and summing the total of these two products.

c. Outdoor: Based on the number of miles traveled by motor vehicle in the last week.

d. Radio/Audio:

- Weekday – Number of half hours listened to Monday to Friday all day, developed from the average number of half hours listened to on an average day times five.
- Primetime – Number of half hours listened to Monday to Friday, 6am-7pm, developed from the average number of half hours listened to on an average day times five.

e. Television: Prepared in the same manner as radio using the counts of half-hours viewed daily and on the two weekend days. Two quintiles are developed, one for total TV and one for primetime TV, the latter based on the reported half hours viewed in primetime. (Terciles are created in a similar manner for daytime television viewing.)

f. Internet: Based on how often the internet is used or looked at in a typical month.

7. Media Comparatives

In addition to the quintiles, the same measures are used to develop comparatives – moieties or half codes - for each medium. The total population is divided into two equal parts based on exposure to each of the five media, then identified as heavy and light exposure groups. These can be combined across media into any desired combination of heavy and/or light exposure populations.

8. Qualitative Magazine Measures

In the personal interview, a series of questions is asked of all readers of each magazine. The questions are administered using show cards that display all responses and their corresponding codes. These are:

a. Where the magazine was read (at home, at work, etc.);

b. On how many different days the magazine was read;

c. How much time was spent reading on the last reading day and how many issues were read that day;

d. What percentage of the pages were read or looked at;

e. How the magazine was obtained (subscription, newsstand, borrowed, etc.);

f. The overall rating the reader assigns to the magazine;

This range and variety of data provides media analysts with a multidimensional array of attributes for evaluation and media planning. It affords the opportunity for scaling and other types of augmenting and discounting. By detailing attributes of the exposure experience, these data can be used to measure in a more detailed way the advertising value of various types of readers of the measured magazines.

9. Primary Reader Adjustment

A primary reader is defined as a reader residing in a household in which some household member either subscribes to or purchases the magazine at a newsstand. Any reader who claims the magazine was so obtained is initially classified as a primary reader. However, in this study (and in most readership studies that attempt to measure source of copy) the purchase and subscription claims, compared with Alliance for Audited Media statements, appear to be fairly consistently overstated. Unadjusted, this would lead to an overstatement of primary readers. It is a longstanding and widely accepted practice in survey research to utilize reliable and accurate external data to adjust, scale, or weight survey data. In readership surveys it has become standard practice to adjust primary claims to circulation data. In the MRI-Simmons study this is accomplished by the following procedure:

a. For each wave of fieldwork, the circulation of each magazine is obtained. An upper limit of two primary readers per copy is set. The primary readers of all magazines having two or fewer primary readers per copy are not adjusted.

b. For each magazine having more than two primary readers per copy, the number is reduced to two by randomly designating the requisite number of primary readers and recoding them as secondary readers. The reduction selection is designed to maintain the observed distribution of male and female readers.

c. When primary readers per copy within sex exceeds 1.35, another random procedure is performed to reduce the level to no greater than 1.35.

d. Similarly, if the projected number of single-copy purchasers or subscribers exceeds a magazine's total circulation, the requisite number of these is randomly selected and reclassified to "other primary" prior to the overall evaluation of primary readers. In this selection, the reduction is designed to maintain the observed distribution of male and female single copy purchasers/subscribers.

10. Page Exposures

Page exposures are a measure of the average number of times the average page of a magazine is seen by an average reader. It is derived as follows, respondent by respondent, for each magazine read:

a. The number of days multiplied by the number of issues read on the most recent day produces an estimate of issue-reading days. If this statistic is in excess of 50 for any magazine for any respondent, as it is on very rare occasions, it is reduced to 50.

b. The number of issue-reading days multiplied by the percentage of pages read on the most recent reading day produces total page exposure. If this statistic is greater than 0 and less

than .1, it is made equal to .1. All values greater than 9.9 are made to equal the mean of all such values (approximately 16.0).

These two types of alterations (1 and 2) reduce the variance of the estimates that is otherwise drastically affected by extreme values.

E. Marketing Data Estimates

Mainly, two types of data are collected in the leave- behind marketing questionnaire; i.e., users and usage. "Users" refers to the number of people who report the purchase or use of a product or service within a specified period of time. This segment can be described in terms of demography, media exposure, and other *of consumption behavior*. The second type of data, "usage," refers to a quantitative measurement of product or service use, such as "amount used" (number of rolls of aluminum foil), "number of times or occasions" (three or more trips to a department store) or "dollars spent" (amount spent for men's suits in the past year). In many instances, the usage time frame is shorter than that for users. These two types of data are used to generate further descriptions of users and usage as follows:

1. Volume Usage

Users are classified as light, medium, or heavy users depending on their relative consumption or use of a particular product. In general, the goal is to divide product users into three user groups each including about one-third of all users.

2. Brand Users

Users of branded products are classified into one of three types for each brand used, based on evaluation of the brand used and corresponding volumes, as:

a. Sole users: Use only one brand

b. Primary users: Use more than one brand, but one more than of all the others

c. Secondary users: Use more than one brand but do not qualify as primary users.

IV. THE STUDY REPORTS

Reports are based on the two most recent waves of fieldwork. The semi-annual reports are, in fact, one year moving averages, with each wave of data being utilized in two successive reports.

Doublebase Reports

The Doublebase consists of four consecutive waves (two years) of data and is updated annually. The Doublebase reports are:

1. Mediamarket Reports: These reports are available in MEMRI and the electronic codebook; codebook pages are also sent to clients.

2. Upper Deck Report: These reports are available in MEMRI and the electronic codebook; codebook pages are also sent to clients.

A report on the demography, media exposure and product/service consumption of the affluent population (upper ten percent of households ranked by income).

3. Business to Business Report: These reports are available in MEMRI and the electronic codebook; codebook pages are also sent to clients.

This is a report on the demographic and business characteristics and business-related product/service usage of business decision-makers.

A. Format of MEMRI Cross-tabulation Data

For the basic deliverable, the MEMRI table are cross-tabulations of one set of data by another, for specified population groups. A standard format is employed, showing four different numbers, as follows:

1. Projected Number: The projected number in thousands;

2. Vertical Percentage: The proportion of the column total;

3. Horizontal Percentage: The proportion of the row total;

4. Index of Selectivity.

The index shows the ratio of the horizontal percentage of the detail row to the total row. In other words, this index shows the extent to which the reported data have a higher or lower concentration in the population segment represented by the detail line compared to the total population. An index over 100 means greater concentration, and one under 100 less concentration.

In study reports, projected numbers based on fewer than 50 respondents are indicated by an asterisk (*), indicating that these estimates should be used with caution. This standard is also used for estimates reported in MEMRI. The two sigma tolerances on these types of estimates generally are at least 40% of the estimate itself. Percentages and indices are not shown where a row (or column) total is based on fewer than 50 respondents.

B. Sampling Tolerances

All sample surveys are characterized by sampling tolerances. Sampling tolerance is the difference that can be expected between the results of a sample survey and the results of a full survey or census, using the same procedures and techniques. This is the difference due to the chance selection of one group of respondents or another. In sample surveys, the actual sampling tolerance is not known. What can be determined is what the samples of the specified size and design can be expected to have. Sampling tolerances are dependent on the size of the sample, the incidence of the particular characteristic and its homogeneity in the population. Other things being equal, larger samples and higher incidences tend to have lower relative sampling tolerances, and characteristics that are evenly distributed tend to have smaller

relative sampling tolerances than those that have uneven occurrences. The sampling tolerance is a very specific statement. It states, "In 95% of the samples of this size and type, the difference between the sample estimate and true value will not exceed plus or minus N, where N is the sampling tolerance."

Sampling tolerances for the magazine[7] and other media audiences are tabulated for each report series and are contained in the Tech Guide under “Unweighted and Projected Audiences and Estimated Tolerances”. Beginning with the Fall 2006 release, sample tolerance calculations are based on the jackknife replication formula. Jackknife replication produces estimates of standard error with increased reliability compared to simple replication. Furthermore, when estimates are based on subgroups or domains, jackknife replication leads to less random variation in the resulting estimates of sampling tolerance.

The sample tolerances should be used to evaluate the precision of an estimate and the degree of confidence that can be placed in it.

The tolerance tables specify two-sigma tolerance limits for particular estimates. Frequently users of data may want to evaluate whether the difference between two estimates is significant or due to chance.

This can be done as follows:

$$K = \sqrt{A^2 + B^2}$$

where A is the sampling tolerance of the first estimate and B is the sampling tolerance of the second estimate. K then equals the chance variation or sampling tolerance of the difference between A and B. If the actual difference divided by K is higher than 2, it lies outside the two-

[7] The sample tolerances calculated in MEMRI for total audience male and female are understated and should be adjusted by multiplying the shown tolerance by 1.15.

sigma range and can be accepted as a real difference; if it is equal to or lower than 2, it may be due to chance factors in the sample process, since it lies within the two-sigma range.

Reliability Estimates of Consumer Behavior and Lifestyle Variables in the Product Booklet

Sample tolerance calculations of consumer behavior and lifestyle variables in the leave-behind product booklet are more complex than simply using the jackknife replication procedure described above and available in the MEMRI system. This complexity arises from MRI-Simmons ascription processes in assigning answers to non-respondents to the product booklet part of the study. While data imputation allows analysis of all respondents, it also ascribes product booklet records from responders to non-responders.

In order to estimate sampling error more accurately, MRI-Simmons compared weighted results and jackknife sampling tolerances from the entire sample with these respective estimates from only product booklet responders for approximately 30 variables randomly drawn from all sections of the product booklet. The results showed that sampling tolerance levels generated from using jackknife replication in the MEMRI system should be multiplied by a factor of 1.39 (the median of sampling error differences between the full sample and only product booklet responders). We recommend applying this factor to the jackknife sampling error estimate for **consumer behavior and lifestyle variables measured in the product booklet.**

C. Access to the MRI-Simmons Database

Each Spring and Fall, as the data become available, they are released to the subscribers and online services. Electronic codebooks specifying the code and location of each data item are also provided. Subscribers are thereby afforded the capability of accessing this database and

extracting their own specific analyses. Since, all of the data come from a single source, all types of cross-tabulations are possible.

The Doublebase files are updated annually, as are the special files containing volumetric product data.

D. Limitations

1. Non-responding and non-reporting persons may have media habits which differ from those of respondents. Therefore, non-responding persons and other limitations in the original sample prevent the intab from being a perfect probability sample. In addition, effort is made to exclude households with media affiliation. The inclusion or exclusion of such households from the sample is dependent upon information revealed by the sample household in response to MRI-Simmons media affiliation question at the time of the personal interview.

2. The personal interviewer may not always follow MRI-Simmons instructions. Also, the interviewer may not be under the direct control of MRI-Simmons, as MRI-Simmons uses independent marketing research suppliers.

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 any persons whose primary language is other than English (or Spanish). Such persons may have media habits that differ from other persons.

4. Estimates from the U.S. Bureau of the Census, Claritas, Nielsen and the Bureau of Labor Statistics are used by MRI-Simmons to make population estimates. These estimates are based upon the most recent available decennial U.S. census and are subject to all limitations inherent therein. In addition, population estimates are subject to limitations such as sampling errors, errors in locating undocumented populations and processing and recording errors.

Furthermore, the sources used by Claritas to update populations between decennial census dates may not include adjustments for known or unknown over– or undercounts of various segments of the population, including undocumented population groups. In addition, annual population updates may be based on the results of sample surveys and are subject to their respective limitations.

5. Self-administered product booklets may be completed improperly if the respondent does not follow the booklet instructions.

6. Human and computer processing errors may occur before or after MRI-Simmons receives the personal interview and the product booklet. Consequently, the degree of variance in the data may be greater than that expected from sampling variance alone.

7. The data upon which MRI-Simmons has based its intab sample weighting, including racial or ethnic identification may not be precise.

8. Defects and limitations found in data supplied by others (e.g., Dynata, Alliance for Audited Media) are inherent in MRI-Simmons estimates based thereon.