OCTOBER 18, 2013

35% of those ages 16 and older own tablet computers

Up from 25% last year—more than half of those in households earning $75,000 or more now have tablets

24% own e-book readers

Up from 19% last year—38% of those in upper-income households now have e-readers

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http://pewinternet.org/Reports/2013/Tablets-and-ereaders.aspx
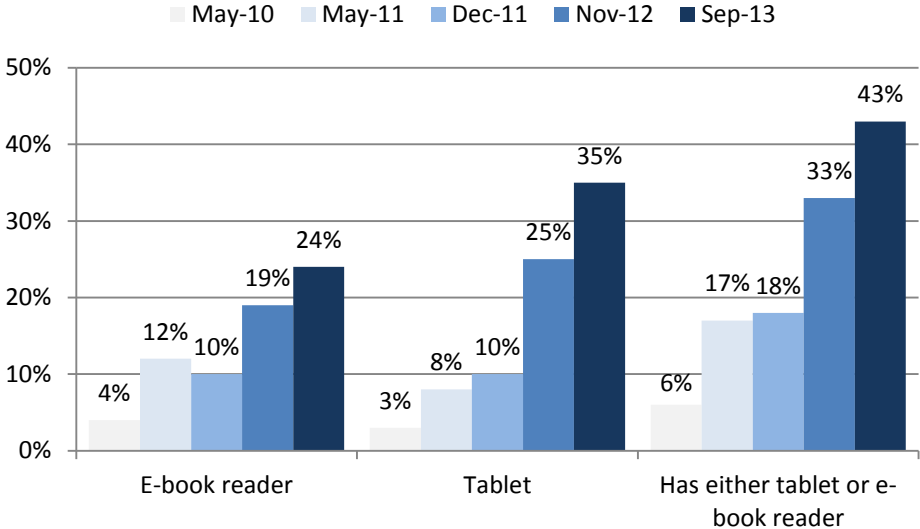
Findings

The number of Americans ages 16 and older who own tablet computers has grown to 35%, and the share who have e-reading devices like Kindles and Nooks has grown to 24%. Overall, the number of people who have a tablet or an e-book reader among those 16 and older now stands at 43%.

Tablet and e-reader ownership

% of Americans ages 16+ who own e-book readers, tablet computers, and at least one of those devices

Legend: ■ May-10 ■ May-11 ■ Dec-11 ■ Nov-12 ■ Sep-13

Device	May-10	May-11	Dec-11	Nov-12	Sep-13
E-book reader	4%	12%	10%	19%	24%
Tablet	3%	8%	10%	25%	35%
Has either tablet or e-book reader	6%	17%	18%	33%	43%

Source: Most recent findings come from Pew Research Center Internet Project Library User survey. July 18-September 20, 2013. N= 6,224 Americans ages 16 and older. Interviews were conducted in English and Spanish and on landline and cell phones. Margin of error is +/- 1.4 percentage points for the total sample.

Note: The 2010 and 2011 surveys were conducted among those ages 18 and older.

These latest figures come from a survey by the Pew Research Center's Internet Project which was conducted from July 18 to September 20, 1013 among 6,224 Americans ages 16 and older. The margin of error is plus or minus 1.4 percentage points.

Who owns tablet computers and e-book readers

The tables below provide a demographic breakdown of who owns tablet computers, including adoption among English-speaking Asian-Americans because the large survey sample produced enough cases to do a separate statistical analysis. Those who own the devices are especially likely to live in upper-income households and have relatively high levels of education. In addition, women are more likely than men to own e-readers. This has also been true in our earlier surveys, including one in May that produced similar results.

The survey also covered cell phones and smartphones.

Who owns tablet computers

Among all American ages 16 and older, the % in each group who own tablets

All Americans ages 16+ who own a tablet (n=6,224)	35%
a	Men (n=2,840)	34
b	Women (n=3,384)	36
Race/ethnicity		
a	White, Non-Hispanic (n=4,323)	35[b]
b	Black, Non-Hispanic (n=697)	29
c	Hispanic (English- and Spanish-speaking) (n=739)	37[b]
d	Asian-American (English-speaking) (n=164)	50[abc]
Age		
a	16-17 (n=214)	46[bde]
b	18-29 (n=945)	37[de]
c	30-49 (n=1,590)	44[bde]
d	50-64 (n=1,842)	31[e]
e	65+ (n=1,526)	18
Education attainment		
a	No high school diploma (n=633)	21
b	High school grad (n=1,695)	28[a]
c	Some College (n=1,631)	36[ab]
d	College + (n=2,227)	49[abc]
Household income		
a	Less than $30,000/yr (n=1,734)	22
b	$30,000-$49,999 (n=1,059)	29[a]
c	$50,000-$74,999 (n=811)	41[ab]
d	$75,000-$99,999 (n=662)	50[abc]
e	$100,000-$149,999 (n=629)	57[abcd]
f	$150,000+ (n=402)	65[abcde]
Urbanity		
a	Urban (n=1,922)	36[c]
b	Suburban (n=3,083)	37[c]
c	Rural (n=1,219)	27

Source: Pew Research Center Internet Project Library User survey. July 18-September 20, 2013. N= 6,224 Americans ages 16 and older. Interviews were conducted in English and Spanish and on landline and cell phones. Margin of error is +/- 1.4 percentage points for the total sample.

Note: Percentages marked with a superscript letter (e.g., [a]) indicate a statistically significant difference between that row and the row designated by that superscript letter, among categories of each demographic characteristic (e.g. age).

Who owns e-book readers

Among all American ages 16 and older, the % in each group who own e-book readers

All Americans ages 16+ who own an e-book reader (n=6,224)	24%
a	Men (n=2,840)	22
b	Women (n=3,384)	27[a]
Race/ethnicity	
a	White, Non-Hispanic (n=4,323)	26[bc]
b	Black, Non-Hispanic (n=697)	21
c	Hispanic (English- and Spanish-speaking) (n=739)	21
d	Asian-American (English-speaking) (n=164)	22
Age	
a	16-17 (n=214)	24
b	18-29 (n=945)	24[e]
c	30-49 (n=1,590)	30[bde]
d	50-64 (n=1,842)	22[e]
e	65+ (n=1,526)	18
Education attainment	
a	No high school diploma (n=633)	14
b	High school grad (n=1,695)	17
c	Some College (n=1,631)	28[ab]
d	College + (n=2,227)	35[abc]
Household income	
a	Less than $30,000/yr (n=1,734)	15
b	$30,000-$49,999 (n=1,059)	23[a]
c	$50,000-$74,999 (n=811)	27[a]
d	$75,000-$99,999 (n=662)	37[abc]
e	$100,000-$149,999 (n=629)	38[abc]
f	$150,000+ (n=402)	38[abc]
Urbanity	
a	Urban (n=1,922)	24[c]
b	Suburban (n=3,083)	26[c]
c	Rural (n=1,219)	21

Source: Pew Research Center Internet Project Library User survey. July 18-September 20, 2013. N= 6,224 Americans ages 16 and older. Interviews were conducted in English and Spanish and on landline and cell phones. Margin of error is +/- 1.4 percentage points for the total sample.

Note: Percentages marked with a superscript letter (e.g., [a]) indicate a statistically significant difference between that row and the row designated by that superscript letter, among categories of each demographic characteristic (e.g. age).

Who owns cell phones and smartphones

Among all Americans ages 16 and older, the % in each group who own phones

All Americans ages 16+ (n=6,224)		Cell phone	Smartphone
		91%	**55%**
a	Men (n=2,840)	92[b]	57[b]
b	Women (n=3,384)	90	54
Race/ethnicity			
a	White, Non-Hispanic (n=4,323)	90	53
b	Black, Non-Hispanic (n=697)	91	56
c	Hispanic (English- and Spanish-speaking) (n=739)	90	57
d	Asian-American (English-speaking) (n=164)	97[abc]	81[abc]
Age			
a	16-17 (n=214)	91[e]	68[de]
b	18-29 (n=945)	97[acde]	79[acde]
c	30-49 (n=1,590)	95[ade]	67[de]
d	50-64 (n=1,842)	89[e]	45[e]
e	65+ (n=1,526)	77	18
Education attainment			
a	No high school diploma (n=633)	82	37
b	High school grad (n=1,695)	88[a]	45[a]
c	Some College (n=1,631)	92[ab]	62[ab]
d	College + (n=2,227)	96[abc]	69[abc]
Household income			
a	Less than $30,000/yr (n=1,734)	85	41
b	$30,000-$49,999 (n=1,059)	93[a]	54[a]
c	$50,000-$74,999 (n=811)	95[ab]	63[ab]
d	$75,000-$99,999 (n=662)	97[abc]	70[abc]
e	$100,000-$149,999 (n=629)	96[ab]	77[abcd]
f	$150,000+ (n=402)	99[abcde]	84[abcde]
Urbanity			
a	Urban (n=1,922)	92[c]	60[bc]
b	Suburban (n=3,083)	92[c]	57[c]
c	Rural (n=1,219)	86	42

Source: Pew Research Center Internet Project Library User survey. July 18-September 20, 2013. N= 6,224 Americans ages 16 and older. Interviews were conducted in English and Spanish and on landline and cell phones. Margin of error is +/- 1.4 percentage points for the total sample.

Note: Percentages marked with a superscript letter (e.g., [a]) indicate a statistically significant difference between that row and the row designated by that superscript letter, among categories of each demographic characteristic (e.g. age).

About us

The Pew Research Center's Internet Project is an initiative of the Pew Research Center, a nonprofit "fact tank" that provides information on the issues, attitudes, and trends shaping America and the world. The Pew Internet Project explores the impact of the internet on children, families, communities, the work place, schools, health care and civic/political life. The Project is nonpartisan and takes no position on policy issues. The majority of support for the Project is provided by The Pew Charitable Trusts. More information is available at pewinternet.org.

Survey questions

Pew Internet Library Users Survey

Final Topline   10/2/2013

Data for July 18 – September 30, 2013

Princeton Survey Research Associates International for
the Pew Research Center's Internet & American Life Project

Sample: n=6,224 people **age 16 or older** nationwide, including 3,102 cell phone interviews
Interviewing dates: 07.18.2013 – 09.30.2013

Margin of error is plus or minus 1.4 percentage points for results based on Total [n=6,224]
Margin of error is plus or minus 1.5 percentage points for results based on internet users [n=5,320]
Margin of error is plus or minus 1.4 percentage points for results based on cell phone owners [n=5,763]

QL1   Next... Do you have a cell phone, or not?[1]

	yes	no	Don't know	Refused
Current	91	9	0	0
August 2013	89	11	0	0
May 2013	91	9	0	*
December 2012	87	13	*	0
November 2012	85	15	0	*
Sept 2012	85	15	*	0
August 2012	89	10	0	*
April 2012	88	12	*	*
February 2012	88	12	0	*
December 2011	87	13	0	*

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[1] Question was asked of landline sample only. Results shown here have been recalculated to include cell phone sample in the "Yes" percentage. Beginning September 2007, question/item was not asked of the cell phone sample, but trend results shown here reflect Total combined Landline and cell phone sample. In past polls, question was sometimes asked as an independent question and sometimes as an item in a series. Wording may vary from survey to survey. Wording variations include: "Do you have a cell phone or a Blackberry or iPhone or other device that is also a cell phone?"; "Do you have...a cell phone or a Blackberry or iPhone or other handheld device that is also a cell phone?"; Do you have a cell phone, or a Blackberry or other device that is also a cell phone?"; "Do you happen to have a cell phone?"; " "Do you have a cell phone?"

August 2011	84	15	*	*
May 2011	83	17	*	0
January 2011	84	16	*	*
December 2010	81	19	*	*
November 2010	82	18	0	*
September 2010	85	15	*	*
May 2010	82	18	*	0
January 2010	80	20	0	*
December 2009	83	17	0	*
September 2009	84	15	*	*
April 2009	85	15	*	*
Dec 2008	84	16	*	*
July 2008	82	18	*	--
May 2008	78	22	*	0
April 2008	78	22	*	--
January 2008	77	22	*	--
Dec 2007	75	25	*	--
Sept 2007	78	22	*	--
April 2006	73	27	*	--
January 2005	66	34	*	--
Nov. 23-30, 2004	65	35	*	--

SMART1 Some cell phones are called "smartphones" because of certain features they have. Is your cell phone a smartphone such as an iPhone, Android, Blackberry or Windows phone, or are you not sure?[2]

Based on cell phone owners

	YES, SMARTPHONE	NO, NOT A SMARTPHONE	NOT SURE/ DON'T KNOW	REFUSED
Current [N=5,763]	61	32	7	*
August 2013 [N=1,636]	60	33	6	*
May 2013 [N=2,076]	55	39	5	*
December 2012 [N=1,954]	52	41	6	*
November 2012 [N=1,992]	55	38	6	*
September 2012 [N=2,581]	53	40	6	*
April 2012 [N=1,954]	46	44	10	*
February 2012 [N=1,961]	45	46	8	*
May 2011 [N=1,914]	33	53	14	*

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[2] Wording may vary from survey to survey. Wording variations include: "Some cell phones are called "smartphones" because of certain features they have. Is your cell phone a smartphone, such as an iPhone, Android, Blackberry or Windows phone, or are you not sure?"; "Some cell phones are called "smartphones" because of certain features they have. Is your cell phone a smartphone or not, or are you not sure?"

Q16 Please tell me if you happen to have each of the following items, or not. Do you have... [INSERT ITEMS IN ORDER]?

	yes	no	Don't know	Refused
A handheld device made primarily for e-book reading, such as a Nook or Kindle e-reader[3]				
Current	24	75	1	*
November 2012	19	80	*	0
April 2012	18	81	1	*
February 2012	14	86	*	*
December 2011	10	89	1	*
August 2011	9	90	*	*
May 2011	12	88	*	0
November 2010	6	94	*	*
September 2010	5	95	*	*
May 2010	4	96	*	*
September 2009	3	97	*	*
April 2009	2	98	*	*
A tablet computer like an iPad, Samsung Galaxy Tab, Google Nexus, or Kindle Fire[4]				
Current	35	65	*	*
May 2013	34	66	*	*
November 2012	25	75	*	*
August 2012	25	75	*	*
April 2012	18	81	*	*
February 2012	14	85	*	*
December 2011	10	89	1	*
August 2011	10	90	*	*
May 2011	8	92	*	0
January 2011	7	92	*	*
November 2010	5	95	*	*
September 2010	4	96	*	*
May 2010	3	97	*	0

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[3] In 2011, item wording was "An electronic Book device or e-Book reader, such as a Kindle or Nook." Through November 2010, item wording was "An electronic book device or e-Book reader, such as a Kindle or Sony Digital Book".

[4] December 2011 through November 2012, item wording was "A tablet computer like an iPad, Samsung Galaxy, Motorola Xoom, or Kindle Fire." In May 2011 and August 2011, item wording was "A tablet computer like an iPad, Samsung Galaxy or Motorola Xoom." January 2011 and earlier, item wording was "A tablet computer like an iPad"

Methods

Prepared by Princeton Survey Research Associates International
for the Pew Research Center's Internet & American Life Project October 2013

SUMMARY

The Library User Survey obtained telephone interviews with a nationally representative sample of 6,224 people ages 16 and older living in the United States. Interviews were conducted via landline (n_{LL}=3,122) and cell phone (n_C=3,102, including 1,588 without a landline phone). The survey was conducted by Princeton Survey Research Associates International. The interviews were administered in English and Spanish by Princeton Data Source from July 18 to September 30, 2013[5]. Statistical results are weighted to correct known demographic discrepancies. The margin of sampling error for results based on the complete set of weighted data is ±1.4 percentage points. Results based on the 5,320 internet users[6] have a margin of sampling error of ±1.5 percentage points.

Details on the design, execution and analysis of the survey are discussed below.

Design AND Data Collection Procedures

Sample Design

A combination of landline and cellular random digit dial (RDD) samples was used to represent all adults in the United States who have access to either a landline or cellular telephone. Both samples were provided by Survey Sampling International, LLC (SSI) according to PSRAI specifications.

Numbers for the landline sample were drawn with probabilities in proportion to their share of listed telephone households from active blocks (area code + exchange + two-digit block number) that contained three or more residential directory listings. The cellular sample was not list-assisted, but was drawn through a systematic sampling from dedicated wireless 100-blocks and shared service 100-blocks with no directory-listed landline numbers.

Contact Procedures

Interviews were conducted from July 18 to September 30, 2013. As many as 10 attempts were made to contact every sampled telephone number. Sample was released for interviewing in replicates, which are representative subsamples of the larger sample. Using replicates to control the release of sample ensures that complete call procedures are followed for the entire sample. Calls were staggered over times of day and days of the week to maximize the chance of making contact with potential respondents. Interviewing was spread as evenly as possible across the days in field. Each telephone number was called at least one time during the day in an attempt to complete an interview.

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[5] Twenty-one pretest interviews conducted on July 18 and 19 were included in the final data file since no changes were made to the questionnaire. Full data collection started on July 22.
[6] Internet user is defined as those accessing the internet occasionally, sending or receiving email, and/or accessing the internet on a cell phone, tablet, or other mobile handheld device.

For the landline sample, interviewers asked to speak with the youngest male or female ages 16 or older currently at home based on a random rotation. If no male/female was available, interviewers asked to speak with the youngest person age 16 or older of the other gender. This systematic respondent selection technique has been shown to produce samples that closely mirror the population in terms of age and gender when combined with cell interviewing.

For the cellular sample, interviews were conducted with the person who answered the phone. Interviewers verified that the person was age 16 or older and in a safe place before administering the survey. Cellular respondents were offered a post-paid cash reimbursement for their participation.

Weighting and analysis

Weighting is generally used in survey analysis to compensate for sample designs and patterns of non-response that might bias results. The sample was weighted to match national adult general population parameters. A two-stage weighting procedure was used to weight this dual-frame sample.

The first stage of weighting corrected for different probabilities of selection associated with the number of adults in each household and each respondent's telephone usage patterns.[7] This weighting also adjusts for the overlapping landline and cell sample frames and the relative sizes of each frame and each sample.

The first-stage weight for the ith case can be expressed as:

$$WT_i = \left[\left(\frac{S_{LL}}{F_{LL}} \times \frac{1}{AD_i} \times LL_i \right) + \left(\frac{S_{CP}}{F_{CP}} \times CP_i \right) \right.$$
$$\left. - \left(\frac{S_{LL}}{F_{LL}} \times \frac{1}{AD_i} \times LL_i \times \frac{S_{CP}}{F_{CP}} \times CP_i \right) \right]^{-1}$$

Where S_{LL} = the size of the landline sample

F_{LL} = the size of the landline sample frame

S_{CP} = the size of the cell sample

F_{CP} = the size of the cell sample frame

AD_i = Number of adults in household i

LL_i=1 if respondent has a landline phone, otherwise LL=0.

CP_i=1 if respondent has a cell phone, otherwise CP=0.

The second stage of weighting balances sample demographics to population parameters. The sample is balanced to match national population parameters for sex, age, education, race, Hispanic origin, region (U.S. Census definitions), population density, and telephone usage. The Hispanic origin was split out based on nativity; U.S born and non-U.S. born. The White, non-Hispanic subgroup was also balanced on age, education and region.

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[7] i.e., whether respondents have only a landline telephone, only a cell phone, or both kinds of telephone.

The basic weighting parameters came from the US Census Bureau's 2011 American Community Survey data.[8] The population density parameter was derived from Census 2010 data. The telephone usage parameter came from an analysis of the July-December 2012 National Health Interview Survey.[9][10]

Weighting was accomplished using Sample Balancing, a special iterative sample weighting program that simultaneously balances the distributions of all variables using a statistical technique called the *Deming Algorithm*. Weights were trimmed to prevent individual interviews from having too much influence on the final results. The use of these weights in statistical analysis ensures that the demographic characteristics of the sample closely approximate the demographic characteristics of the national population. Table 1 compares weighted and unweighted sample distributions to population parameters.

Table 1: Sample Demographics

	Parameter	Unweighted	Weighted
Gender			
Male	48.2	45.6	48.1
Female	51.8	54.4	51.9
Age			
16-24	15.2	13.5	15.7
25-34	17.0	11.7	16.7
35-44	16.9	12.8	16.5
45-54	18.4	16.7	18.2
55-64	15.8	19.6	15.8
65+	16.7	25.7	17.1
Education			
HS Graduate or Less	44.5	37.7	43.9
Some College/Assoc. Degree	29.8	26.2	29.5
College Graduate	25.7	36.1	26.6
Race/Ethnicity			
White/not Hispanic	66.3	71.1	66.6
Black/not Hispanic	11.5	11.2	11.6
Hisp - US born	7.5	6.5	7.5
Hisp - born outside	7.4	5.4	7.2
Other/not Hispanic	7.3	5.8	7.2
Region			
Northeast	18.1	16.5	17.7

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[8] ACS analysis was based on all people ages 16 and older excluding those living in institutional group quarters (GCs).

[9] Blumberg SJ, Luke JV. Wireless substitution: Early release of estimates from the National Health Interview Survey, July-December, 2012. National Center for Health Statistics. June 2013.

[10] The phone use parameter used for this 16+ sample is the same as the parameter we use for all 18+ surveys. No adjustment was made to account for the fact that the target population for this survey is slightly different than a standard 18+ general population survey.

Midwest	21.5	24.3	22.2
South	37.1	36.7	37.1
West	23.3	22.4	23.1
County Pop. Density			
1 - Lowest	19.9	24.1	20.3
2	20.0	20.5	20.2
3	20.1	21.3	20.2
4	20.0	18.3	19.8
5 - Highest	20.0	15.7	19.5
Household Phone Use			
LLO	6.5	4.9	6.0
Dual - few, some cell	35.9	50.7	36.7
Dual - most cell	18.3	18.7	18.5
CPO	39.3	25.7	38.8

Effects of Sample Design on Statistical Inference

Post-data collection statistical adjustments require analysis procedures that reflect departures from simple random sampling. PSRAI calculates the effects of these design features so that an appropriate adjustment can be incorporated into tests of statistical significance when using these data. The so-called "design effect" or deff represents the loss in statistical efficiency that results from unequal weights. The total sample design effect for this survey is 1.25.

PSRAI calculates the composite design effect for a sample of size n, with each case having a weight, w_i as:

$$deff = \frac{n \sum_{i=1}^{n} w_i^2}{\left(\sum_{i=1}^{n} w_i \right)^2} \qquad \textit{formula 1}$$

In a wide range of situations, the adjusted *standard error* of a statistic should be calculated by multiplying the usual formula by the square root of the design effect ($\sqrt{deff}$). Thus, the formula for computing the 95% confidence interval around a percentage is:

$$\hat{p} \pm \left(\sqrt{deff} \times 1.96 \sqrt{\frac{\hat{p}(1-\hat{p})}{n}} \right) \qquad \textit{formula 2}$$

where $\hat{p}$ is the sample estimate and n is the unweighted number of sample cases in the group being considered.

The survey's *margin of error* is the largest 95% confidence interval for any estimated proportion based on the total sample— the one around 50%. For example, the margin of error for the entire sample is

±1.4 percentage points. This means that in 95 out every 100 samples drawn using the same methodology, estimated proportions based on the entire sample will be no more than 1.4 percentage points away from their true values in the population. It is important to remember that sampling fluctuations are only one possible source of error in a survey estimate. Other sources, such as respondent selection bias, questionnaire wording and reporting inaccuracy, may contribute additional error of greater or lesser magnitude.

Response Rate

Table 2 reports the disposition of all sampled telephone numbers ever dialed from the original telephone number samples. The response rate estimates the fraction of all eligible respondents in the sample that were ultimately interviewed. At PSRAI it is calculated by taking the product of three component rates:[11]

- Contact rate – the proportion of working numbers where a request for interview was made[12]

- Cooperation rate – the proportion of contacted numbers where a consent for interview was at least initially obtained, versus those refused

- Completion rate – the proportion of initially cooperating and eligible interviews that were completed

Thus the response rate for the landline sample was 10 percent. The response rate for the cellular sample was 13 percent.

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[11] PSRAI's disposition codes and reporting are consistent with the American Association for Public Opinion Research standards.
[12] PSRAI assumes that 75 percent of cases that result in a constant disposition of "No answer" or "Busy" are actually not working numbers.

Sample Disposition

Landline	Cell	
116,709	61,496	Total Numbers Dialed
5,165	1,052	Non-residential
4,316	225	Computer/Fax
30	0	Cell phone
70,002	25,290	Other not working
5,084	497	Additional projected not working
32,113	34,432	Working numbers
27.5%	56.0%	Working Rate
1,695	166	No Answer / Busy
8,341	6,795	Voice Mail
116	50	Other Non-Contact
21,961	27,421	Contacted numbers
68.4%	79.6%	Contact Rate
843	3,543	Callback
17,666	19,219	Refusal
3,452	4659	Cooperating numbers
15.7%	17.0%	Cooperation Rate
204	228	Language Barrier
0	1,250	Child's cell phone
3,248	3,181	Eligible numbers
94.1%	68.3%	Eligibility Rate
126	78	Break-off
3,122	3,103	Completes
96.1%	97.5%	Completion Rate
10.3%	13.2%	Response Rate