

# Digital Divisions

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**There are clear differences among those with broadband connections, dial-up connections, and no connections at all to the internet.**

October 5, 2005

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**Susannah Fox, Associate Director**

# Summary of Findings

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## Two-thirds of American adults go online and one-third do not.

As of May-June 2005, 68% of American adults, or about 137 million people, use the internet, up from 63% one year ago. Thirty-two percent of American adults, or about 65 million people, do not use the internet and not always by choice. Certain groups continue to lag in their internet adoption, including Americans age 65 and older, African-Americans, and those with less education. For example:

- 26% of Americans age 65 and older go online, compared with 67% of those age 50-64, 80% of those age 30-49, and 84% of those age 18-29.
- 57% of African-Americans go online, compared with 70% of whites.
- 29% of those who have not graduated from high school have access, compared with 61% of high school graduates and 89% of college graduates.
- 60% of American adults who do not have a child living at home go online, compared with 83% of parents of minor children.

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## “Newbies” have become a rare species.

Most internet users have many years of online experience, even if there have been gaps in their usage. Indeed, “newbies,” those who have had access for one year or less, now account for just 6% of the overall American adult internet population. Fully 79% of internet users have now had access for four years or more. In contrast, in 2002, 17% of internet users were newbies and 52% were veterans, with four or more years of experience.

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## The percentage of “truly disconnected” has remained stable in the last three years.

One in five American adults (22%) say they have never used the internet or email and do not live in internet-connected households. These truly disconnected adults occupy essentially the same percentage of the population as in 2002, when 23% of American adults said they have never used the internet and do not live with anyone who has access.

This Pew Internet & American Life Project report is based on the findings of a daily tracking survey on Americans' use of the internet. All numerical data was gathered through telephone interviews conducted by Princeton Survey Research Associates between May 4 and June 7, 2005, among a sample of 2,001 adults, aged 18 and older. For results based on the total sample, one can say with 95% confidence that the error attributable to sampling and other random effects is +/- 2%. For results based internet users (n=1,336), the margin of sampling error is +/- 3%.

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### **Different access speeds create a new divide among internet users. And connection speed is a more important factor in internet use than experience.**

Fifty-three percent of internet users now have a high-speed connection at home, up from 21% of internet users in 2002. Not surprisingly, the groups who were initially most likely to lag in adopting the internet now lag in access speeds. Those with less education, those with lower household incomes, and Americans age 65 and older are less likely to have embraced broadband than those who are younger and have higher socio-economic status.

Previously, the Pew Internet & American Life Project reported that internet experience – the number of years a person had been online – was a major predictor of both the frequency of internet use and the activities pursued online. Now that a majority of the internet’s heaviest users have upgraded from dial-up to high-speed access at home, broadband access is becoming a stronger predictor of online behavior than a user’s level of experience.

One way to look at internet access in the U.S. is to split adults into three tiers – the truly offline (22% of American adults); those with relatively more modest connections, such as dial-up users, intermittent users, and non-users who live with an internet user (40%); and the highly-wired broadband elite (33%).

<b>Digital Divisions: Summary of Findings at a Glance</b>
Two-thirds of American adults go online and one-third do not.
“Newbies” have become a rare species.
The percentage of “truly disconnected” has remained stable in the last three years.
Different access speeds create a new divide among internet users. And connection speed is a more important factor in internet use than experience.
Source: Susannah Fox. <i>Digital Divisions</i> . Washington, DC: Pew Internet & American Life Project, October 5, 2005.

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# Acknowledgements

Thanks to John Horrigan and Katherine Murray for help with data analysis.

About the Pew Internet & American Life Project: The Pew Internet Project is a nonprofit, non-partisan think tank that explores the impact of the Internet on children, families, communities, the work place, schools, health care, and civic/political life. The Project is an initiative of the Pew Research Center and it aims to be an authoritative source for timely information on the internet's growth and societal impact. Support for the project is provided by The Pew Charitable Trusts. The project's Web site: [www.pewinternet.org](http://www.pewinternet.org)

About Princeton Survey Research Associates International: PSRAI conducted the survey that is covered in this report. It is an independent research company specializing in social and policy work. The firm designs, conducts, and analyzes surveys worldwide. Its expertise also includes qualitative research and content analysis. With offices in Princeton, New Jersey, and Washington, D.C., PSRAI serves the needs of clients around the nation and the world. The firm can be reached at 911 Commons Way, Princeton, NJ 08540, by telephone at 609-924-9204, by fax at 609-924-7499, or by email at [ResearchNJ@PSRA.com](mailto:ResearchNJ@PSRA.com)

# Part 1.

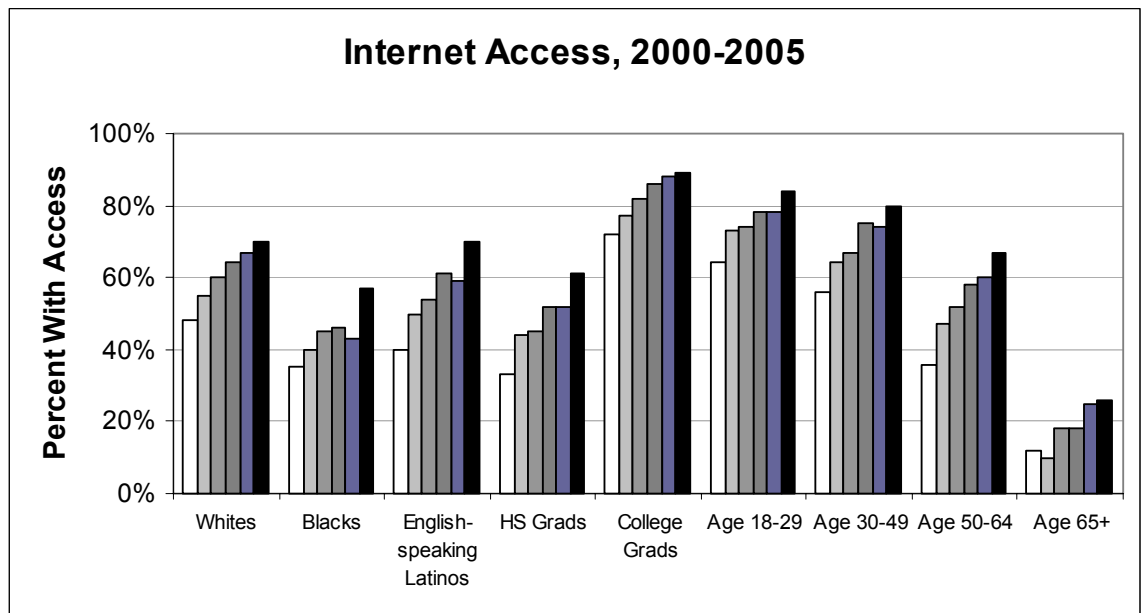
## Internet Access is the Norm, but is not Universal

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### Two-thirds of American adults go online and one-third do not.

As of May-June 2005, 68% of American adults, or about 137 million people, use the internet, up from 63% one year ago. Thirty-two percent of American adults, or about 65 million people, do not go online.<sup>1</sup>

Certain groups continue to lag behind: Americans age 65 and older, African-Americans, and those with less education.<sup>2</sup>



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<sup>1</sup> Prior to our January 2005 survey, the question used to identify internet users read, "Do you ever go online to access the internet or World Wide Web or to send and receive email?" The current two-part question wording reads, "Do you use the internet, at least occasionally?" and "Do you send or receive email, at least occasionally?"

<sup>2</sup> This chart illustrates representative months for each year, 2000-2005. For detailed information on our historical survey data, please see the "Usage Over Time" spreadsheet on our site: <http://www.pewinternet.org/trends.asp>

Some details:

- 26% of Americans age 65 and older go online, compared with 67% of those age 50-64, 80% of those age 30-49, and 84% of those age 18-29.
- 57% of African-Americans go online, compared with 70% of whites.
- 29% of those who have not graduated from high school have access, compared with 61% of high school graduates and 89% of college graduates.
- 60% of American adults who do not have a child living at home go online, compared with 83% of parents of minor children.

Americans living with a disability and those who do not speak English are also less likely to have access. A 2002 survey by the Pew Internet & American Life Project found that only 38% of Americans living with disabilities have access to the internet. And while our surveys, conducted only in English, consistently find that English-speaking Hispanics are as likely as non-Hispanic whites to use the internet (70% of each group), U.S. Census data shows that access is more unevenly distributed than that. Surveys conducted in Spanish and English in October 2003 found that 37% of Hispanics (age 3 and older) have internet access, compared with 65% of non-Hispanic whites (also age 3 and older).<sup>3</sup>

The biggest drop-off for internet use is after age 70. About half (53%) of Americans between 60 and 69 years old have internet access, compared with just 22% of those age 70 and older.

In contrast, the technology gap is much less pronounced when looking at cell phone usage. In February 2004, 74% of white American adults said they have a cell phone, compared with 73% of African-American adults. In the same survey, 46% of Americans age 65 and older said they have a cell phone, compared with 75% of those age 50-64, 82% of those age 30-49, and 80% of those age 18-29.<sup>4</sup>

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**There continues to be churn in the online population. Still, most people hold on to their internet connections once they get them.**

Seventeen percent of non-internet users say that they did at some point use the internet or email, but have since stopped. Most report stopping because they no longer have access, just lost interest, or decided it was too expensive. Many of these “Net Dropouts” are likely to regain access and end up being intermittent users since half are between 18 and 28 years old, the most highly-wired age group. For example, 84% of 18-28 year-olds go online and 87% use a computer on a regular basis. In contrast, 22% of people age 70 and older go online and just 24% use a computer on a regular basis.

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<sup>3</sup> See “A Nation Online: Entering the Broadband Age” (U.S. Department of Commerce: September 2004).

Available at: <http://www.ntia.doc.gov/reports/anol/NationOnlineBroadband04.htm>

<sup>4</sup> John Horrigan, “Internet and Cell Phone Facts,” (Pew Internet & American Life Project commentary: July 26, 2005). Available at: <http://www.pewinternet.org/PPF/p/1099/pipcomments.asp>

Most internet users have years of online experience, even if there have been gaps in their usage. Indeed, “newbies,” those who have had access for one year or less, now account for just 6% of the overall American adult internet population. Fully 79% of internet users have now had access for four years or more. By contrast, in 2002, 17% of internet users were newbies and 52% were veteran users. However, online experience is no longer as significant a predictor of online activity, as it was in 2002.<sup>5</sup> Internet users who remain on dial-up connections are less likely to go online on a typical day than those who have a fast, broadband connection at home. Further, dial-up users are less likely than broadband users to have used the internet for a host of activities.

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### **Some people choose not to go online, even if there is an active internet connection at home.**

Fifteen percent of respondents in our survey who said they were not internet users live with someone who uses the internet or email at home, a slight decline from 2002 when 20% of non-internet users were “Net Evaders.”<sup>6</sup> Non-users with children living at home are more likely than others to say they are offline in an online home. It is possible that these families have invested in computers and internet access for their children, though one or more of the adults remain offline.

All told, 73% of adults live in a household with an internet connection, whether or not they go online themselves, and 27% of adults live in a household that does not have an internet connection. Some of those living in “offline” homes may have internet access at work, at school, or some other location.

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### **Few in-roads have been made with Americans who are disconnected from the internet.**

Fully 22% of Americans say they have never used the internet or email and do not live in internet-connected households. These truly disconnected adults occupy essentially the same percentage of the population as in 2002, when 23% of American adults said they have never used the internet and do not live with anyone who has access. This group is overwhelmingly over the age of 65 and less educated than the rest of the population.

As in previous surveys of those who do not go online, many non-users say they do not want or need the internet.<sup>7</sup> For example:

- 32% of non-users say they are just not interested in going online.

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<sup>5</sup> John Horrigan, “Broadband Adoption at Home in the United States: Growing But Slowing,” (Pew Internet & American Life Project: September 21, 2005). Available at: [http://www.pewinternet.org/PPF/r/164/report\\_display.asp](http://www.pewinternet.org/PPF/r/164/report_display.asp)

<sup>6</sup> Amanda Lenhart, John Horrigan, Lee Rainie, Mary Madden, et al., “The Ever-Shifting Internet Population,” (Pew Internet & American Life Project: April 16, 2003). Available at: [http://www.pewinternet.org/PPF/r/88/report\\_display.asp](http://www.pewinternet.org/PPF/r/88/report_display.asp)

<sup>7</sup> Amanda Lenhart, “Who’s Not Online” (Pew Internet & American Life Project: September 21, 2000). Available at: [http://www.pewinternet.org/PPF/r/21/report\\_display.asp](http://www.pewinternet.org/PPF/r/21/report_display.asp)

- 31% of non-users say they simply do not have access.
- 7% of non-users say they are too busy or think going online is a waste of time.
- 6% of non-users say getting access is too difficult or frustrating.
- 5% of non-users say getting access is too expensive.

But there were also unique concerns expressed in the responses recorded by interviewers. For example, some of the reported reasons for not being online include:

- “Never learned how to use a computer.”
- “Rather do things in person.”
- “I hate computers – that’s what’s ruining the world.”
- “Because I would become addicted to it.”
- “Can communicate better by phone where you can hear an actual voice.”
- “Someone could get access to my personal information.”
- “I have the TV and the newspaper and I’m an avid reader.”
- “Age. I’m 85 and it’s a little too old. If I was younger, I would be very interested.”
- “I’m blind.”
- “I don’t like it. I think it’s the devil’s work.”
- “I have small children and don’t want them on there.”

## Part 2.

### Different Access Speeds Create a New Divide

Fifty-three percent of home internet users now have a high-speed connection at home, up from 21% of internet users in 2002. Perhaps not surprisingly, people who are less likely to have access at all, such as older Americans, are also less likely to upgrade to broadband once they do get online.

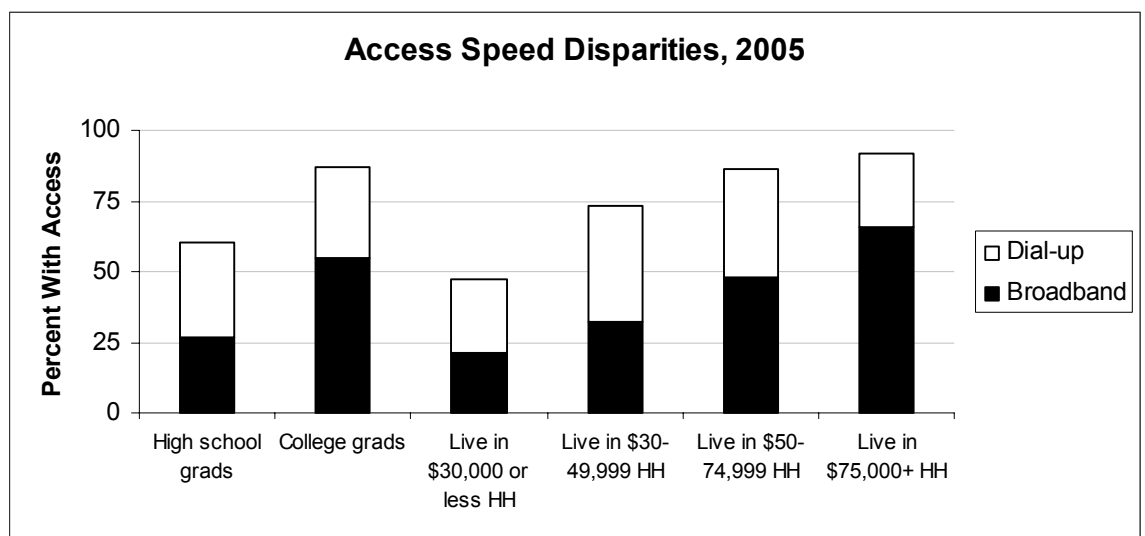
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#### Two-thirds of college graduates have broadband at home.

Fully 62% of home internet users with a college or graduate degree have a high-speed connection at home. That is notably higher than the 44% of home internet users with high school diplomas who have broadband connections.

“Broadband users” are those with a Digital Subscriber Line, cable modem, wireless connection, or fiber (T-1) connection.

In a similar pattern, internet users living in the highest-income households are not only the most likely to go online (93% have access), but are also the most likely group to have a fast connection – 71% of these internet users have a broadband connection at home. By contrast, adults living in households with annual incomes of \$30,000 or less are about half as likely as the highest-income Americans to go online at all (49% have access), and only 42% of these internet users have high-speed access at home.<sup>8</sup>



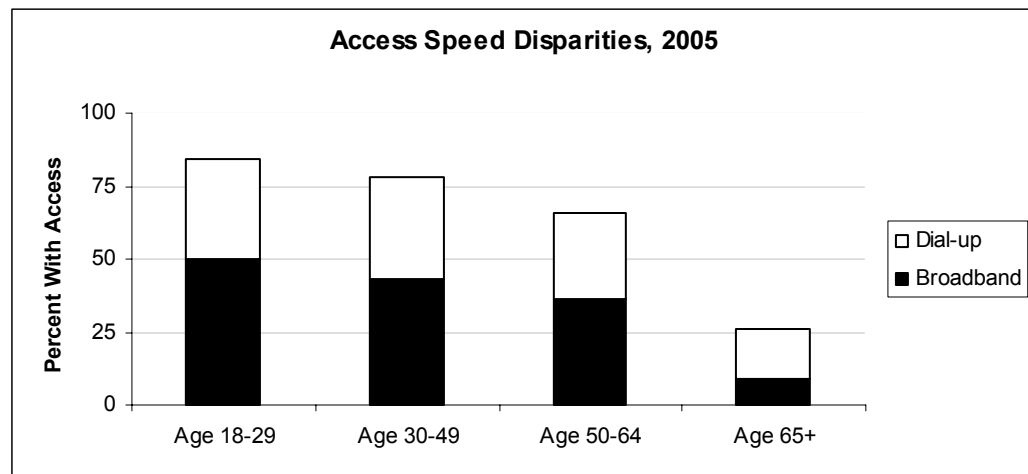
<sup>8</sup> Source for chart: Pew Internet Project May-June 2005 survey. Margin of error for subgroups is +/- 10%.

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## The new “grey gap” is one of speed as well as access.

More than half of home internet users between 18 and 64 years old have a fast connection at home, compared with about one-third of internet users age 65 and older.

Americans age 65 and older are the least likely demographic group to have an internet connection and are continuing to lag younger users in access speeds as well. There is an elite group of wired seniors who are following their younger peers into the broadband future, but the majority of older Americans is completely offline or has a tenuous connection to the internet.<sup>9</sup>



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## Connection speed overtakes experience as the most significant predictor of online behavior.

Broadband access is now a more significant predictor of online behavior than years of online experience. Previously, the Pew Internet & American Life Project reported that if an internet user had three or more years of experience online, he was more likely to take part in a wide range of activities on a typical day. Now that most of the internet’s heaviest users have upgraded from dial-up to high-speed access at home, broadband users are pulling away from dial-up users in many aspects of online life, regardless of the years of online experience they might have.<sup>10</sup>

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<sup>9</sup> Source for chart: Pew Internet Project May-June 2005 survey. Margin of error for subgroups is +/- 12%.

<sup>10</sup> John Horrigan, “Broadband Adoption at Home in the United States: Growing But Slowing,” (Pew Internet & American Life Project: September 21, 2005). Available at: [http://www.pewinternet.org/PPF/r/164/report\\_display.asp](http://www.pewinternet.org/PPF/r/164/report_display.asp).

<b>Access Speed Affects Activities Online</b>		
	<b>Home Dial-up Users</b>	<b>Home Broadband Users</b>
Get news online	68%	82%
Buy a product online	59	81
Bank online	35	59
Download computer programs	35	47
Play online games	33	41
Read someone else's blog	20	35
Participate in an online auction	19	39
Download music	17	33
Create a blog	4	11

Source: Pew Internet & American Life Project February-March 2005 Survey (N=2,201); May-June 2005 Survey (N=2,001). Margin of error for comparing the two groups is +/- 5%.

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### **There are three degrees of internet access – cold, tepid, and hot.**

One way to look at internet access in the U.S. is to split adults into three tiers – those who are truly offline, those with a relatively tenuous or modest connection to the internet, and those who are highly wired.

Twenty-two percent of American adults have never used the internet and do not live in households with internet access. They are likely to have a high school education or less and be over the age of 65. Few of these Americans have access anywhere to a computer on a regular basis, much less the internet. If they needed to get information from a Web site or other online source, they probably could not easily do so.

Forty percent of American adults have a somewhat loose connection to the internet. They may or may not go online regularly, but would probably be able to go online if they really needed to do so. This group includes dial-up users (30% of adults), people who live in internet-connected homes but do not go online themselves (5% of adults), and people who do not currently have access, but have in the past (5% of adults). They are more educated and younger than the offline group. There are clusters of enthusiastic users on dial-up or currently offline, but overall, these adults are less fervent in their internet use.

Thirty-three percent of American adults are highly engaged with the internet, going online via high-speed connections at home. They are likely to have attended college and be under age 50, but there are pockets of “wired seniors,” as well. Many of these internet users go online every day and have sampled a wide range of activities.

# Methodology

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## Summary

This survey, sponsored by the Pew Internet & American Life Project, obtained telephone interviews with a nationally representative sample of 2,001 adults living in continental United States telephone households. The survey was conducted by Princeton Survey Research International. Interviews were done in English by Princeton Data Source, LLC from May 4 to June 7, 2005. Statistical results are weighted to correct known demographic discrepancies. The margin of sampling error for the complete set of weighted data is  $\pm 2.3\%$ .

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## Design and Data Collection Procedures

### Sample Design

The sample was designed to represent all continental U.S. telephone households. The telephone sample was provided by Survey Sampling International, LLC (SSI) according to PSRAI specifications. The sample was drawn using standard list-assisted random digit dialing (RDD) methodology. Active blocks of telephone numbers (area code + exchange + two-digit block number) that contained three or more residential directory listings were selected with probabilities in proportion to their share of listed telephone households; after selection two more digits were added randomly to complete the number. This method guarantees coverage of every assigned phone number regardless of whether that number is directory listed, purposely unlisted, or too new to be listed. After selection, the numbers were compared against business directories and matching numbers purged.

### Contact Procedures

Interviews were conducted from May 4 to June 7, 2005. 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. Each household received at least one daytime call in an attempt to find someone at home. In each contacted household, interviewers asked to speak with the youngest adult male currently at home. If no male was available, interviewers asked to speak with either the youngest or oldest female at home based on a

random rotation.<sup>11</sup> This systematic respondent selection technique has been shown to produce samples that closely mirror the population in terms of age and gender.

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## **Weighting and Analysis**

Weighting is generally used in survey analysis to compensate for patterns of nonresponse that might bias results. The interviewed sample of all adults was weighted to match national parameters for sex, age, education, race, Hispanic origin and region (U.S. Census definitions). These parameters came from a special analysis of the Census Bureau's 2004 Annual Social and Economic Supplement (ASEC) that included all households in the continental United States that had a telephone.

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.

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<sup>11</sup> This is part of a continuing experiment to see what effect, if any, asking for the youngest instead of the oldest female has on sample demographics.

**Table 1: Sample Demographics**

	<b>Parameter</b>	<b>Unweighted</b>	<b>Weighted</b>
<i>Gender</i>			
	Male	48.1	43.5
	Female	51.9	56.5
<i>Age</i>			
	18-24	12.6	9.6
	25-34	18.0	13.3
	35-44	20.3	17.6
	45-54	19.3	19.7
	55-64	13.4	15.7
	65+	16.4	24.0
<i>Education</i>			
	Less than HS		
	Grad.	15.1	10.3
	HS Grad.	35.8	34.4
	Some College	23.3	25.0
	College Grad.	25.8	30.3
<i>Region</i>			
	Northeast	19.2	18.2
	Midwest	23.0	26.1
	South	36.0	36.9
	West	21.8	18.7
<i>Race/Ethnicity</i>			
	White/not		
	Hispanic	71.7	79.8
	Black/not		
	Hispanic	10.8	9.7
	Hispanic	11.9	5.9
	Other/not		
	Hispanic	5.6	4.7

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## 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 systematic non-response. The total sample design effect for this survey is 1.12.

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

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

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:

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

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  $\pm 3.3\%$ . 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 3.3 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.

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## Response Rate

Table 2 reports the disposition of all sampled telephone numbers ever dialed from the original telephone number sample. 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:<sup>12</sup>

- Contact rate – the proportion of working numbers where a request for interview was made – of 80 percent<sup>13</sup>

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<sup>12</sup> PSRAI’s disposition codes and reporting are consistent with the American Association for Public Opinion Research standards.

<sup>13</sup> PSRAI assumes that 75 percent of cases that result in a constant disposition of “No answer” or “Busy” over 10 or more attempts are actually not working numbers.

- Cooperation rate – the proportion of contacted numbers where a consent for interview was at least initially obtained, versus those refused – of 48 percent
- Completion rate – the proportion of initially cooperating and eligible interviews that were completed – of 91 percent

Thus the response rate for this survey was 35 percent.

**Table 2: Sample Disposition**

	<u>Final</u>
Total Numbers dialed	11,514
Business	1,083
Computer/Fax	884
Other Not-Working	1,945
Additional projected NW	803
Working numbers	6,799
<b>Working Rate</b>	<b>59.0%</b>
No Answer	109
Busy	44
Answering Machine	866
Callbacks	87
Other Non-Contacts	258
Contacted numbers	5,434
<b>Contact Rate</b>	<b>79.9%</b>
Initial Refusals	2,070
Second Refusals	766
Cooperating numbers	2,598
<b>Cooperation Rate</b>	<b>47.8%</b>
No Adult in HH	20
Language Barrier	369
Eligible numbers	2,209
<b>Eligibility Rate</b>	<b>85.0%</b>
Interrupted	208
Completes	2,001
<b>Completion Rate</b>	<b>90.6%</b>
<b>Response Rate</b>	<b>34.6%</b>