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# Privacy and Data Management on Mobile Devices

*More than half of app users have uninstalled or avoided an app due to concerns about personal information*

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<http://pewinternet.org/Reports/2012/Mobile-Privacy.aspx>

# Key Findings

## More than half of app users have uninstalled or decided to not install an app due to concerns about personal information

Many cell phone users take steps to manage, control, or protect the personal data on their mobile devices. In a new study by the Pew Internet Project of how cell phone users manage their mobile data, we asked about five specific behaviors in which cell phone owners might engage. Two of these activities were asked of the 43% of cell owners who download cell phone applications. Among this group, representing 38% of the adult population, we found that:

- 54% of app users have decided to not install a cell phone app when they discovered how much personal information they would need to share in order to use it
- 30% of app users have uninstalled an app that was already on their cell phone because they learned it was collecting personal information that they didn't wish to share

Taken together, **57% of all app users have either uninstalled an app over concerns about having to share their personal information, or declined to install an app in the first place for similar reasons.**

Outside of some modest demographic differences, app users of all stripes are equally engaged in these aspects of personal information management. Owners of both Android and iPhone devices are also equally likely to delete (or avoid entirely) cell phone apps due to concerns over their personal information.

## Cell phone owners take a number of steps to protect access to their personal information and mobile data

In addition to these measures of app-specific behaviors, we also asked about three general activities related to personal data management on cell phones. These questions were asked of the 88% of the adult population that owns a cell phone of any kind. Among this group, we found that:

- 41% of cell owners back up the photos, contacts, and other files on their phone so they have a copy in case their phone is ever broken or lost
- 32% of cell owners have cleared the browsing history or search history on their phone
- 19% of cell owners have turned off the location tracking feature on their cell phone because they were concerned that other individuals or companies could access that information

## Nearly one third of cell owners have experienced a lost or stolen phone, and 12% have had another person access the contents of their phone in a way that made them feel their privacy was invaded

Even as cell owners take steps to maintain control over their personal data in the context of mobile phones, the physical devices themselves can occasionally fall into the wrong hands. Some 31% of cell

owners have lost their cell phone or had it stolen, while 12% of cell owners say that another person has accessed their phone's contents in a way that made them feel that their privacy had been invaded. Despite the fact that backing up one's phone is typically conducted as a safeguard in the event that the phone is lost or stolen, cell owners who have *actually experienced* a lost or stolen phone are no more likely than average to back up the contents of their phone.

The youngest cell phone users (those ages 18-24) are especially likely to find themselves in each of these situations. Some 45% of cell owners in this age group say that their phone has been lost or stolen, and 24% say that someone else has accessed their phone in a way that compromised their privacy.

### **Smartphone owners are generally more active in managing their mobile data, but also experience greater exposure to privacy intrusions**

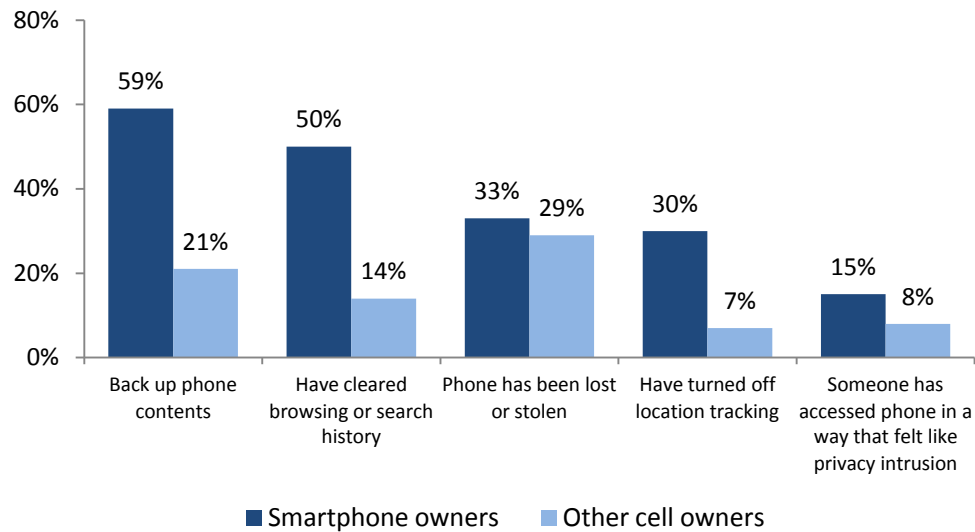
Smartphone owners are especially vigilant when it comes to mobile data management. Six in ten smartphone owners say they back up the contents of their phone; half have cleared their phone's search or browsing history; and one third say they have turned off their phone's location tracking feature.

Yet despite these steps, smartphone owners are also twice as likely as other cell owners to have experienced someone accessing their phone in a way that made them feel like their privacy had been invaded. Owners of smartphones and more basic phones are equally likely to say their phone has been lost or stolen.

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## Smartphone owners vs. other cell owners on mobile data management and security

*% within each group who do/have done or experienced the following*



**Source:** Pew Research Center's Internet & American Life Project, March 15-April 3, 2012 Tracking survey. N=2,254 adults ages 18 and older, including 903 interviews conducted on respondent's cell phone. Margin of error is +/-2.6 percentage points based on cell phone owners (n=1,954).

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### About this survey

The results reported here come from a nationwide survey of 2,254 adults (age 18 and older) between March 15-April 3, 2012, including interviews on landline and cell phones and conducted in English and Spanish. The overall sample has a margin of error of plus or minus 2.4 percentage points. Some 1,954 cell users were interviewed in this sample and many of the results published here involve that subset of users. The margin of error for data involving cell users is plus or minus 2.6 percentage points.

# Overview

Mobile technology has accelerated the pace at which people access, acquire and generate data. Users' cell phones are now rich repositories of memories and content that chronicle their lives. A staggering archive of personally identifiable information exists about cell users —a reality that is both the consequence of and driving force of the networked age. As nearly one-fifth of cell owners (17%) use their cell phone for most of their online browsing, privacy and data management on mobile devices is increasingly emerging as a contested arena for policymakers, industry leaders and the public.<sup>1</sup>

The debate's focus often centers upon the app market. Consumers are amassing apps on their cell phones in record numbers. At the same time, some app developers are quietly amassing sensitive and personal data from their users.<sup>2</sup>

Regulatory efforts have attempted to preserve user privacy in the app marketplace. Earlier this year, a Federal Trade Commission report spotlighted a lack of transparency within app privacy policies, citing that the majority of mobile programs directed toward children lacked thorough explanations of data collection procedures.<sup>3</sup> Responding to pressure from California's Attorney General, the largest app distributors — Apple, Google, Microsoft, Amazon, Hewlett-Packard and Research In Motion — consented in the first quarter of 2012 to provide better articulation of app privacy policies.<sup>4</sup> And in February 2012, the White House released its "Privacy Bill of Rights," a document that outlined best practices for generalized data management —suggestions relevant to the mobile realm.<sup>5</sup>

This report represents the Pew Internet & American Life Project's first effort to see how cell phone users manage their personal mobile information. Our questions explored some steps they take to control who has access to that information (be that other individuals or third parties such as app makers), their efforts to protect their personal data and information from loss, as well as their experiences with cell phones that are lost or otherwise compromised by third parties.

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<sup>1</sup> See "Cell Internet Use 2012" available at <http://www.pewinternet.org/Reports/2012/Cell-Internet-Use-2012.aspx>

<sup>2</sup> Sengupta, S. "Mobile App Developers Scoop Up Vast Amounts of Data, Reports Say," *The New York Times*, <http://bits.blogs.nytimes.com/2012/07/12/mobile-app-developers-scoop-up-vast-amounts-of-data-reports-say/>, 12 July 2012

<sup>3</sup> Federal Trade Commission. "Mobile Apps for Kids: Current Privacy Disclosures are Disappointing," [http://www.ftc.gov/os/2012/02/120216mobile\\_apps\\_kids.pdf](http://www.ftc.gov/os/2012/02/120216mobile_apps_kids.pdf), 16 February 2012

<sup>4</sup> Guynn, J. "Facebook to require privacy policies for all apps in App Center," *The Los Angeles Times*, <http://articles.latimes.com/2012/jun/22/business/la-fi-facebook-ag-20120622>, 22 June 2012. & Fowler, G. "Tech Giants Agree to Deal on Privacy Policies for Apps," *The Wall Street Journal*, <http://online.wsj.com/article/SB10001424052970203918304577239650306276074.html>, 23 February 2012

<sup>5</sup> The White House. "Consumer Data Privacy in a Networked World: A Framework for Protecting Privacy and Promoting Innovation in the Global Digital Economy." <http://www.whitehouse.gov/sites/default/files/privacy-final.pdf>, February 2012

# Main findings

## Apps and privacy: More than half of app users have uninstalled or decided to not install an app due to concerns about their personal information

In this survey, we found that 88% of American adults use cell phones. Some 43% of these cell owners now download apps to their phones, which is a notable increase from the 31% of cell owners who said they downloaded apps in 2011. As mobile applications grow in popularity, a substantial share of consumers is taking into consideration the way apps deal with users' personal information:

- 54% of app users have *decided to not install a cell phone app* once they discovered how much personal information they would need to share in order to use it
- 30% of app users have *uninstalled an app that was already on their cell phone* because they learned it was collecting personal information that they didn't wish to share

Taken together, 57% of all app users have either uninstalled an app over concerns about having to share their personal information, or declined to install an app in the first place for similar reasons.

Interestingly, there are relatively few differences—demographic or otherwise—between app users when it comes to avoiding or uninstalling apps due to concerns about data collection or sharing. Certainly, some groups are more likely than others to use apps in the first place (these differences are illustrated in the table below), but significant differences among those who actually use apps are largely confined to the following:

- Male app users are more likely than female app users to say they have uninstalled an app because it was sharing too much of their personal information. Men and women are equally likely to avoid apps entirely based on personal privacy concerns.
- Apps users with at least some college experience are somewhat more likely than those with a high school education to choose not to install an app over privacy concerns. There are no educational differences when it comes to deleting existing apps for this reason.

Outside of these rather modest differences, the story of cell owners' concerns about apps and their personal information is one of consistency across groups. Younger cell owners are much more likely than their elders to use apps—yet app users of all ages are equally likely to remove (or to avoid downloading) an app based on privacy concerns.

In addition, iPhone and Android owners take nearly identical steps when it comes to sharing personal information in the context of apps. Among app users, 54% of iPhone owners and 56% of Android owners have avoided an app due to concerns about access to their personal information, while 28% of iPhone owners and 32% of Android owners have uninstalled an app for that reason. In each case, these modest differences are not statistically significant.

## Actions and concerns about apps and personal information

% within each group who have uninstalled or decided not to install a cell phone app based on concerns about sharing or collecting of personal information

	% who use apps (based on all cell owners)	% who have <u>decided to not install an app</u> due to personal info concerns (based on app users)	% who have <u>uninstalled an app</u> due to personal info concerns (based on app users)
<b>Total</b>	<b>43%</b>	<b>54%</b>	<b>30%</b>
<b>Gender</b>			
Men (a)	45	52	35(b)
Women (b)	41	56	24
<b>Age</b>			
18-29 (a)	65 (bc)	49	29
30-49 (b)	53 (c)	55	31
50+ (c)	20	57	27
<b>Race/Ethnicity*</b>			
White, non-Hispanic (a)	40	57	30
Black, non-Hispanic (b)	50(a)	48	23
<b>Household Income</b>			
Less than \$30,000 (a)	32	50	38(d)
\$30,000-\$49,999 (b)	41(a)	46	29
\$50,000-\$74,999 (c)	50(a)	59	30
\$75,000+ (d)	57(ab)	57	26
<b>Education level</b>			
HS grad or less (a)	36	45	25
Some college (b)	44(a)	57(a)	32
College graduate (c)	52(ab)	60(a)	33

**Source:** Pew Research Center's Internet & American Life Project, March 15-April 3, 2012 Tracking survey. N=2,254 adults ages 18 and older, including 903 interviews conducted on respondent's cell phone; n=714 for apps users.

**Note:** Columns marked with (a) or another letter indicate a statistically significant difference between rows. Statistical significance is determined within each column and section. \*Figures for Hispanics are not reported here due to low sample size of app users in this group (n=80).

## One in five cell owners have turned off the location tracking feature on their phone, and one in three have cleared their cell phone browsing or search history

Although they pose unique challenges to consumers from the standpoint of protecting one's personal information, apps represent just one component of the mobile privacy environment. Mobile devices store a wide array of personal (and potentially sensitive) data, from detailed search and browsing histories to up-to-the-minute information about one's location or movements.

In an effort to measure consumers' responses to these broader privacy concerns, we asked cell owners about their experiences with two specific behaviors—clearing one's search or browsing history, and disabling the general location tracking feature on one's phone. We found that:

- 32% of all cell owners have cleared the browsing history or search history on their phone
- 19% of all cell owners have turned off the location tracking feature on their cell phone because they were concerned that other individuals or companies could access that information

Smartphone owners are especially active when it comes to these behaviors. Some 50% of smartphone owners have cleared their phone's browsing or search history, while 30% have turned off the location tracking feature on their phone due to concerns over who might access that information.

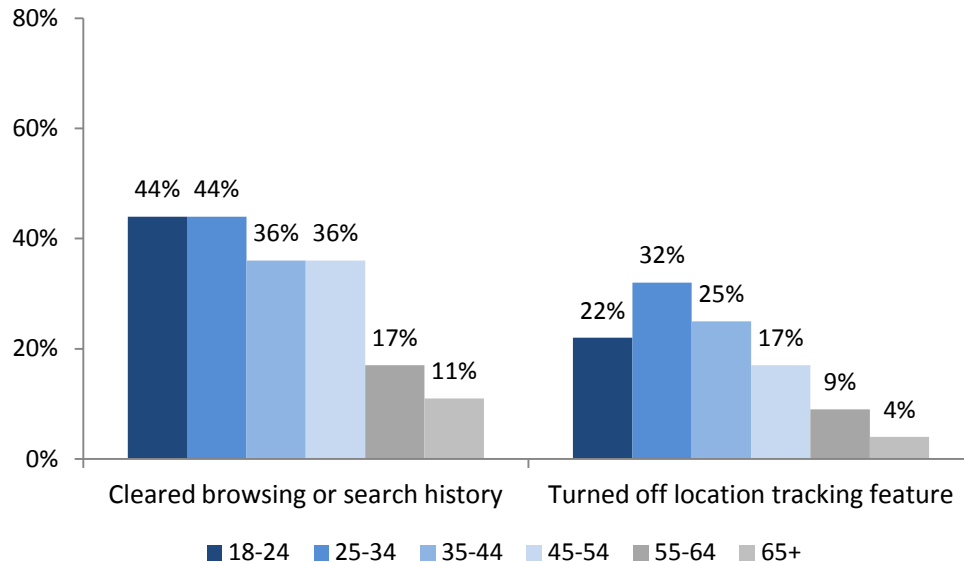
Age is also correlated with this aspect of mobile privacy management. Some 44% of cell owners ages 18-24 have cleared the search or browsing history on their phone, as have a statistically similar 36% of cell owners ages 45-54. This behavior drops off dramatically among older cell owners, as 17% of those between the ages of 55 and 64 (and 11% of those ages 65 and older) have done this. Concerns about location tracking are highest among cell owners in their mid-20s to mid-30s, as some 32% of cell owners between the ages of 25 and 34 have turned off location tracking over concerns about their personal information (by contrast, just 4% of cell owners ages 65 and older have done so).



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## Clearing cell phone search/browsing history and turning off location tracking, by age group

*% of cell owners in each age group who have done the following on their phones*



**Source:** Pew Research Center's Internet & American Life Project, March 15-April 3, 2012 Tracking survey. N=2,254 adults ages 18 and older, including 903 interviews conducted on respondent's cell phone. Margin of error is +/-2.6 percentage points based on cell phone owners (n=1,954).

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In addition to age and smartphone ownership, cell phone privacy behaviors vary by gender and parental status. Specifically, male cell owners are more likely than women to clear the search and browsing history on their phones (37% of men do this, compared with 28% of women), and parents are more likely than non-parents to clear their search or browsing history (39% vs. 29%) as well as to turn off the location tracking feature on their phones (25% vs. 16%).

In each of these instances (age, parental status, and gender) these behavioral differences persist even when we control for differences in smartphone ownership between these groups. By contrast, for other demographic groups, differences are largely the result of varying levels of smartphone ownership. For instance, college-educated cell owners are more likely to clear their browsing histories and turn off location tracking than those with a high school education, but these differences disappear once we account for higher levels of smartphone ownership among college graduates.

## Nearly one third of cell owners have experienced a lost or stolen phone, while one in ten have had someone access their phone in a way that they felt invaded their privacy

Even as cell owners take steps to limit the mobile data that can be accessed by apps makers, advertisers, and mobile operators, cell phones can still physically fall into the wrong hands. Indeed, some 31% of cell owners have had their cell phone lost or stolen, and 12% have experienced a situation in which another person has accessed the contents of their phone in a way that made them feel that their privacy had been invaded.

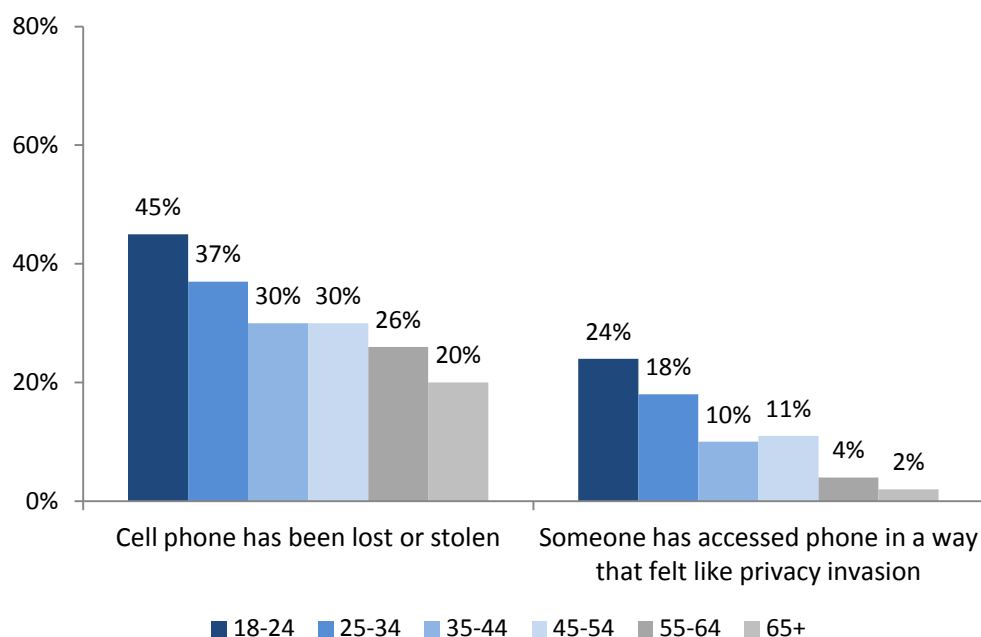
Interestingly, smartphones are no more likely to be lost or stolen than more basic devices (some 33% of smartphone owners have experienced this, compared with 29% of other cell owners) although these advanced mobile devices do have the potential to offer a more target-rich environment for privacy invasion. Some 15% of smartphone owners say that someone has accessed their phone in a way that made them feel their privacy was invaded, nearly double the 8% of basic phone owners who say this has ever happened to them.

Both of these aspects of mobile privacy also exhibit significant variation based on age. The youngest cell owners (those ages 18-24) are especially likely to have experienced a lost or stolen phone—nearly half (45%) have had this happen to them at some point—although this behavior is relatively common across a range of age cohorts, as one in five cell owners age 65 and up (20%) have experienced the loss or theft of a mobile device. On the other hand, younger users are much more likely to say that personal data on their phone has been accessed by another person in an inappropriate way. Fully one-quarter of cell owners ages 18-24, and 18% of those ages 25-34, say that someone has accessed their phone in a way that made them feel that their privacy had been invaded. By contrast, just 2% of cell owners ages 65 and older have encountered this situation.

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## Physical cell phone privacy experiences by age group

*% of cell owners in each age group who have experienced the following*



**Source:** Pew Research Center's Internet & American Life Project, March 15-April 3, 2012 Tracking survey. N=2,254 adults ages 18 and older, including 903 interviews conducted on respondent's cell phone. Margin of error is +/-2.6 percentage points based on cell phone owners (n=1,954).

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Outside of age, most cell owners are equally likely to experience a lost or stolen phone—although there are some differences around race/ethnicity and community type. Some 44% of African American cell owners say that their phone has been lost or stolen (compared with 28% of whites), while 36% of urban-dwelling cell owners have experienced this (compared with 29% of suburban and 26% of rural residents). When it comes to whether someone has had their phone accessed in a way that made them feel their privacy was violated, age and smartphone ownership are the primary sources of variation: other demographic differences on this issue are relatively modest.

In terms of phone type, Blackberry owners are more likely than other smartphone owners to say that their phone has been lost or stolen—some 45% of Blackberry users say this has happened to them, compared with 30% of iPhone owners and 36% of Android owners. But just 4% of Blackberry users say that someone else has accessed their phone in a way that invaded their privacy, a figure that is substantially lower than the 16% of iPhone owners and 17% of Android owners who have experienced this.

## Physical cell phone privacy experiences by demographic

Based on cell owners within each group

	Cell phone lost or stolen	Cell phone accessed in a way that felt like your privacy was invaded
<b>All cell owners</b>	<b>31%</b>	<b>12%</b>
<b>Gender</b>		
Men (n=895)	32	13
Women (n=1059)	31	10
<b>Race/Ethnicity</b>		
White, Non-Hispanic (n=1404) (a)	28	10
Black, Non-Hispanic (n=234) (b)	44(a)	16(a)
Hispanic (n=180) (c)	34	11
<b>Household Income</b>		
Less than \$30,000/yr (n=447) (a)	31	14(c)
\$30,000-\$49,999 (n=316) (b)	32	12(c)
\$50,000-\$74,999 (n=272) (c)	31	5
\$75,000+ (n=538) (d)	31	12(c)
<b>Education Level</b>		
No high school diploma (n=156) (a)	39(d)	15
High school grad (n=542) (b)	30	10
Some College (n=490) (c)	34	16(bd)
College + (n=752) (d)	28	9
<b>Geographic Location</b>		
Urban (n=557) (a)	36(bc)	13
Suburban (n=993) (b)	29	10
Rural (n=316) (c)	26	13

**Source:** Pew Research Center's Internet & American Life Project, March 15-April 3, 2012 Tracking survey. N=2,254 adults ages 18 and older, including 903 interviews conducted on respondent's cell phone. Margin of error is +/-2.6 percentage points based on cell phone owners (n=1,954).

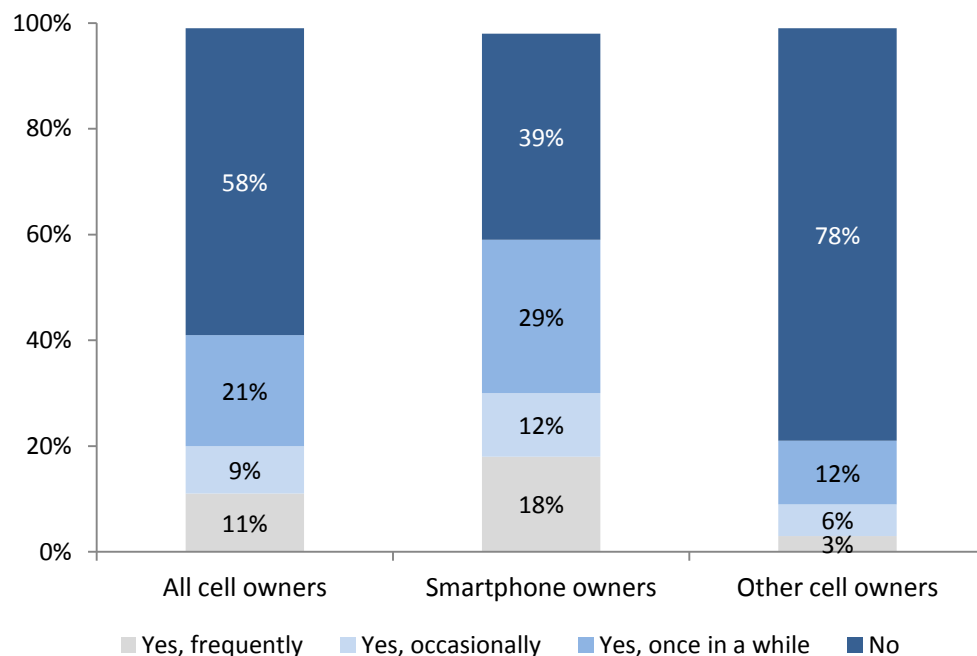
**Note:** Columns marked with (a) or another letter indicates a statistically significant difference between rows. Statistical significance is determined within each column and section.

## Fewer than half of all cell owners—but a majority of smartphone users—back up the contents of their phone

Even cell owners who take precautions run the risk of a lost, stolen or broken phone that takes files, photos or other personal data with it. And yet, most cell phone owners do not back up the data they have stored on their phones. Some 41% of cell owners say that they back up the photos, contacts or other files on their phone so that they have a copy in case their phone is lost, stolen or otherwise compromised—11% do so “frequently,” 9% do so “occasionally,” and 21% do so “once in a while.” Not surprisingly, smartphone owners are much more likely to back up their phones than are owners of more basic devices. Some 59% of smartphone owners back up their phones at least every once in a while (although this means that 39% of smartphone owners never back up the contents of their phone).

### More to save and more to lose: Smartphone owners are more likely than other cell owners to back up the contents of their phone

*% of cell owners in each group who back up the photos, contacts, and other files on their phones*



**Source:** Pew Research Center’s Internet & American Life Project, March 15–April 3, 2012 Tracking survey. N=2,254 adults ages 18 and older, including 903 interviews conducted on respondent’s cell phone. Margin of error is +/-2.6 percentage points based on cell phone owners (n=1,954).

Despite the fact that backing up one’s phone is typically conducted as a safeguard in the event that the phone is lost or stolen, cell owners who have *actually experienced* a lost or stolen phone are no more likely than average to back up the contents of their phone. Among cell owners whose phones have been lost or stolen in the past, 44% say that they back up their phone at least every once in a while—this is nearly identical to the 41% of all cell owners who do backups, and to the 40% of those who have never had a lost or stolen phone who do so.

By contrast, individuals who say that another person has accessed the contents of their phone without their permission are much more likely than average to conduct regular backups. Some 57% of cell owners whose mobile data has been compromised in this way say that they back up the contents of their phone, compared with 39% of those who have not experienced a similar situation.

In terms of demographic differences, backing up one's phone's data goes hand-in-hand with [smartphone ownership](#). Groups with relatively high levels of smartphone ownership (those under 50, the college-educated, those with a household income of \$50,000 or more per year) are also the ones that are most likely to say that they back up the contents of their phone.

## Cell phone backups by demographic group

*% of cell phone users within each group who back up the contents of their phone at least "every once in a while"*

<b>All cell phone users (n=1954)</b>	<b>41%</b>
Men (n=895)	43
Women (n=1059)	39
<b>Age</b>	
18-24 (n=225)	56
25-34 (n=230)	57
35-44 (n=276)	50
45-54 (n=371)	41
55-64 (n=387)	25
65+ (n=429)	11
<b>Race/ethnicity</b>	
White, Non-Hispanic (n=1404)	41
Black, Non-Hispanic (n=234)	41
Hispanic (n=180)	34
<b>Annual household income</b>	
Less than \$30,000/yr (n=447)	37
\$30,000-\$49,999 (n=316)	36
\$50,000-\$74,999 (n=272)	46
\$75,000+ (n=538)	52
<b>Education level</b>	
No high school diploma (n=156)	30
High school grad (n=542)	33
Some College (n=490)	47
College + (n=752)	48

**Source:** Pew Research Center's Internet & American Life Project, March 15-April 3, 2012 Tracking survey. N=2,254 adults ages 18 and older, including 903 interviews conducted on respondent's cell phone. Margin of error is +/-2.6 percentage points based on cell phone owners (n=1,954).

# Survey questions

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## Spring Tracking Survey 2012

Final Topline

04/10/2012

Data for March 15–April 3, 2012

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

Sample: n=2,254 national adults, age 18 and older, including 903 cell phone interviews

Interviewing dates: 03.15.2012 – 04.03.2012

Margin of error is plus or minus 2 percentage points for results based on Total [n=2,254]

Margin of error is plus or minus 3 percentage points for results based on cell phone owners [n=1,954]

Margin of error is plus or minus 4 percentage points for results based on those who download apps to their cell phone [n=714]

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### Q35 Has your cell phone ever been lost or stolen, or has this never happened to you?

Based on cell phone owners [N=1,954]

	CURRENT	
%	31	Yes
	68	No
	*	Don't know
	*	Refused

### Q36 Has another person ever accessed the contents of your phone in a way that made you feel your privacy was invaded?

Based on cell phone owners [N=1,954]

	CURRENT	
%	12	Yes
	88	No
	1	Don't know
	*	Refused

- Q37** Do you ever back up the photos, contacts or other files on your phone so that you have a copy in case your phone is ever broken or lost? [IF YES: How often do you do this — frequently, occasionally, or just every once in a while?]

Based on cell phone owners [N=1,954]

	CURRENT	
%	11	Yes, frequently
	9	Yes, occasionally
	21	Yes, every once in a while
	58	No
	1	Don't know
	1	Refused

- Q38** Have you ever [INSERT ITEMS; RANDOMIZE]?

	YES	NO	DON'T KNOW	REFUSED
<i>Items A and B: Based on those who download apps to their cell phone [N=714]</i>				
a. Decided to not install a cell phone app when you found out how much personal information you would need to share in order to use it	54	46	*	*
b. Uninstalled an app on your cell phone because you found out it was collecting personal information that you didn't want to share	30	69	1	*
<i>Items C and D: Based on cell phone owners [N=1,954]</i>				
c. Turned off the location tracking feature on your cell phone because you were worried about other people or companies being able to access that information	19	78	3	1
d. Cleared the browsing history or search history on your cell phone	32	66	1	1



# Methodology

This report is based on the findings of a survey on Americans' use of the Internet. The results in this report are based on data from telephone interviews conducted by Princeton Survey Research Associates International from March 15 to April 3, 2012, among a sample of 2,254 adults, age 18 and older. Telephone interviews were conducted in English and Spanish by landline (1,351) and cell phone (903, including 410 without a landline phone). For results based on the total sample, one can say with 95% confidence that the error attributable to sampling is plus or minus 2.4 percentage points. For results based Internet users (n=1,803), the margin of sampling error is plus or minus 2.7 percentage points. In addition to sampling error, question wording and practical difficulties in conducting telephone surveys may introduce some error or bias into the findings of opinion polls.

A combination of landline and cellular random digit dial (RDD) samples was used to represent all adults in the continental 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 selected 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.

New sample was released daily and was kept in the field for at least five days. The sample was released in replicates, which are representative subsamples of the larger population. This ensures that complete call procedures were followed for the entire sample. At least 7 attempts were made to complete an interview at a sampled telephone number. The calls were staggered over times of day and days of the week to maximize the chances of making contact with a potential respondent. Each number received at least one daytime call in an attempt to find someone available. For the landline sample, interviewers asked to speak with the youngest adult male or female currently at home based on a random rotation. If no male/female was available, interviewers asked to speak with the youngest adult of the other gender. For the cellular sample, interviews were conducted with the person who answered the phone. Interviewers verified that the person was an adult and in a safe place before administering the survey. Cellular sample respondents were offered a post-paid cash incentive for their participation. All interviews completed on any given day were considered to be the final sample for that day.

Weighting is generally used in survey analysis to compensate for sample designs and patterns of non-response that might bias results. A two-stage weighting procedure was used to weight this dual-frame sample. The first-stage corrected for different probabilities of selection associated with the number of adults in each household and each respondent's telephone usage patterns. This weighting also adjusts for the overlapping landline and cell sample frames and the relative sizes of each frame and each sample.

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 is also balanced on age, education and region. The basic weighting parameters came from a special analysis of the Census Bureau's 2011 Annual Social and Economic Supplement (ASEC) that included all households in the United States. The population density parameter was derived from Census 2000 data. The cell phone usage parameter came from an analysis of the July-December 2010 National Health Interview Survey.

Following is the full disposition of all sampled telephone numbers:

**Table 2: Sample Disposition**

Landline	Cell	
33,738	22,143	Total Numbers Dialed
1,502	332	Non-residential
1,491	45	Computer/Fax
8	----	Cell phone
15,401	8,237	Other not working
2,746	404	Additional projected not working
12,590	13,126	Working numbers
37.3%	59.3%	Working Rate
915	135	No Answer / Busy
3,472	4,465	Voice Mail
66	5	Other Non-Contact
8,137	8,521	Contacted numbers
64.6%	64.9%	Contact Rate
523	1,382	Callback
6,161	5,654	Refusal
1,453	1,485	Cooperating numbers
17.9%	17.4%	Cooperation Rate
52	43	Language Barrier
----	498	Child's cell phone
1,401	944	Eligible numbers
96.4%	63.6%	Eligibility Rate
50	41	Break-off
1,351	903	Completes
96.4%	95.7%	Completion Rate
11.1%	10.8%	Response Rate

The disposition reports all of the 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:

- Contact rate – the proportion of working numbers where a request for interview was made
- 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 11 percent. The response rate for the cellular sample was 11 percent.