



The Rise of Apps Culture

**35% of U.S. adults have cell phones with apps,
but only 24% of adults actually use them**

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Overview

Cell phone use in the U.S. has increased dramatically over the past decade. Fully eight in ten adults today (82%) are cell phone users, and about one-quarter of adults (23%) now live in a household that has a cell phone but no landline phone.

Along with the widespread embrace of mobile technology has come the development of an “apps culture.” As the mobile phone has morphed from a voice device to a multi-channel device to an internet-accessing mini-computer, a large market of mobile software applications, or “apps,” has arisen.

Among the most popular are apps that provide some form of entertainment (games, music, food, travel and sports) as well as those that help people find information they need and accomplish tasks (maps and navigation, weather, news, banking). With the advent of the mobile phone, the term “app” has become popular parlance for software applications designed to run on mobile phone operating systems, yet a standard, industry-wide definition of what is, and is not, an “app” does not currently exist. For the purpose of this report, apps are defined as end-user software applications that are designed for a cell phone operating system and which extend the phone’s capabilities by enabling users to perform particular tasks.

The most recent Pew Internet Project survey asked a national sample of 1,917 cell phone-using adults if they use apps and how they use them. Broadly, the results indicate that while apps are popular among a segment of the adult cell phone using population, a notable number of cell owners are not yet part of the emerging apps culture.

35% of adults have cell phones with apps, but only two-thirds of those who have apps actually use them

Of the 82% of adults today who are cell phone users, 43% have software applications or “apps” on their phones. When taken as a portion of the entire U.S. adult population, that equates to 35% who have cell phones with apps. This figure includes adult cell phone users who:

- have downloaded an app to their phone (29% of adult cell phone users), and/or
- have purchased a phone with preloaded apps (38% of adult cell phone users)

Yet having apps and using apps are not synonymous. Of those who have apps on their phones, only about two-thirds of this group (68%) actually use that software. Overall, that means that 24% of U.S. adults are active apps users. Older adult cell phone users in particular do not use the apps that are on their phones, and one in ten adults with a cell phone (11%) are not even sure if their phone is equipped with apps.

Apps users are younger, more educated, and more affluent than other cell phone users

When compared with other cell phone using adults, and the entire U.S. adult population, the apps user population skews male, and is much younger, more affluent, and more educated than other adults. Overall, the apps-using population also skews slightly Hispanic when compared with other adult cell phone users.

App use still ranks relatively low when compared with other uses of cell phones

While 24% of adults, 29% of adults with cell phones, use applications on their phones, apps use still ranks relatively low when compared with other non-voice cell phone activities. Taking pictures and texting are far and away the most popular non-voice cell phone data applications, with more than seven in ten adult cell phone users embracing these features of their phones.

App use ranks low on a list of non-voice cell phone activities

% of adult cell phone users who do each of the following on their phone...

Take a picture	76%
Send or receive text messages	72
Access the internet	38
Play a game	34
Send or receive email	34
Record a video	34
Play music	33
Send or receive instant messages	30
Use an app	29

Source: Pew Research Center's Internet & American Life Project, April 29-May 30, 2010 Tracking Survey. N=1,917 adult cell phone users.

29% of adult cell phone users have downloaded an app to their phone

As with the apps-using population as a whole, downloaders are younger, more educated, and disproportionately male when compared with the total U.S. adult population. And while they resemble adults who only have preloaded apps in terms of education, they are still disproportionately young and male even when compared with this group.

One in ten adult cell phone users (10%) had downloaded an app in the past week; 20% of cell phone users under age 30 download apps this frequently

Those who download apps do so fairly frequently. Among apps downloaders, roughly half (53%) say their most recent download was in the past 30 days, including one third (33%) who say their last download was within the past week. As a fraction of all cell phone-using adults, that equates to 15% who have downloaded apps in the past month, and 10% who have downloaded apps in the past week. Among cell phone users under age 30, 20% have downloaded an app in the past week.

One in eight adult cell phone users (13%) has paid to download an app

Among the 29% of adult cell phone users who download apps, just under half (47%) have paid for an app, with the remainder saying they only download apps that are free. Put in broader context, that means that 13% of all adult cell phone users have paid to download an app to their phone. There are few notable demographic differences between downloaders who pay for apps and those who do not.

Among cell phone users with apps, the average adult has 18 apps on his or her phone

Among adult cell phone users who have software applications on their cell phones, the mean number of apps is 18. However, the median number of apps is 10, indicating there are heavy apps users on the high end of the response scale who have a disproportionate number of apps on their phones. This is particularly true among the youngest adults.

Again, there is some uncertainty among cell phone users, particularly older cell phone users, about what software they have on their phones. Fully 18% of cell phone users with apps on their phones do not know how many they have. That figure doubles to 36% among cell phone users age 50 and older.

Findings from the Nielsen Apps Playbook Survey

Nielsen data indicate that games are the most popular apps, followed by news/weather, maps/navigation, social networking, and music.

In addition to drawing on results from the Pew Internet Project's own nationwide probability sample of 2,252 adults, this report also presents findings from The Nielsen Company's Apps Playbook, a December 2009 survey of a nonprobability sample of 3,962 adult cell phone subscribers who had downloaded an app in the previous 30

days.¹ Although the Nielsen survey cannot be projected to the population of all app downloaders with a known degree of accuracy, it provides an extensive snapshot of the types of apps people are downloading and a broad sense of how they are using them.

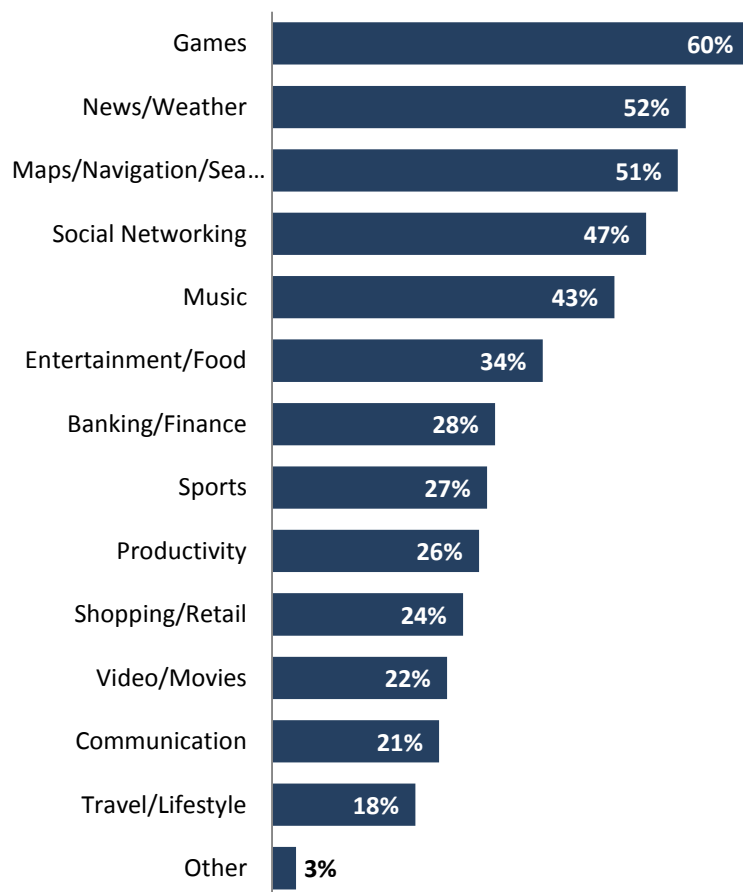
Among the recent downloaders Nielsen surveyed, game apps were the most *downloaded* apps overall in terms of both volume and the percent of adults who had downloaded them.² In terms of actual apps *use*, six in ten of Nielsen's recent downloaders (60%) said they had used a game app in the past 30 days, and roughly half said they had used a news/weather app (52%), a map/navigation app (51%), or a social networking app (47%) in that same timeframe. While music apps ranked second on the most downloaded list, they ranked fifth on the most used list.

¹ In *probability sampling*, all individuals in the population have some opportunity of being included in the sample, and the mathematical probability that any one of them will be selected can be calculated. In *nonprobability sampling*, individuals are selected on the basis of their availability (e.g., volunteering for an online panel) and an unknown portion of the population is excluded (e.g., those who did not volunteer). Because Nielsen's Mobile Insights survey is administered to a nonprobability sample, the results cannot be projected to the entire population of recent apps downloaders and the findings reported here should be considered descriptive. When compared to the Pew Internet probability sample, the Nielsen sample of recent-downloaders is similar in racial/ethnic and gender makeup, but overrepresents high income adults and college graduates. It also skews younger than the Pew sample.

² For more on the popularity of games and other apps among mobile subscribers, see Nielsen's September 9, 2010 report "Games Dominate America's Growing Appetite for Mobile Apps." Available at: http://blog.nielsen.com/nielsenwire/online_mobile/games-dominate-americas-growing-appetite-for-mobile-apps/

What are the most popular types of apps?

% of Nielsen recent downloaders who have used each category of apps in the past month...



Source: The Nielsen App Playbook, December 2009. N=3,962 adults who have downloaded an app in the 30 days prior to the survey.

In the Nielsen survey, most recent apps downloaders said they used their apps daily but for short periods of time, and used them in a variety of situations

Some 57% of the recent apps downloaders in the Nielsen study said they use their apps daily. While one quarter of these recent apps downloaders (24%) said they use their apps for more than 30 minutes a day, the vast majority said they spend less time using their apps each day.

Asked where they use their apps most frequently, 71% of the Nielsen sample said they frequently used their apps when they were alone, and about half said they frequently

used their apps while waiting for someone or something (53%) or while at work (47%). One in three (36%) said they frequently used apps while commuting.

The Nielsen survey indicates that different people may use apps in different ways

There were several notable differences among the Nielsen recent-downloader sample in terms of which apps they favored and how frequently they used them. For instance:

- Women in the sample were more likely than men to have used a social networking app in the past 30 days (53% v. 42%), and women who used the Facebook app were also more likely to use that app everyday (64% v. 55%)
- Women in the sample were more likely than men to have used a game app in the past 30 days (63% v. 58%), while men were more likely to have used a productivity app (29% v. 21%) or a banking/finance app (31% v. 25%)
- Among the Nielsen sample of recent downloaders, whites (53%) and Hispanics (47%) were more likely than African-Americans (36%) to have used a map/navigation/search app in the month prior to the survey
- Hispanics, on the other hand, were the most likely to have used a music app recently (48% of Hispanics v. 42% of whites and 42% of African-Americans)
- In the Nielsen sample, 75% of 18-24 year-old Twitter app users reported using that app every day, compared with 52% of the 25-34 year-olds and 48% of the Twitter users age 35 and older
- In contrast, among Nielsen's Facebook app users, 25-34 year-olds were more likely than both younger and older Facebook app users to report using their Facebook app daily
- The African-Americans and Hispanics in the Nielsen sample were significantly more likely than whites to be daily users of their Youtube apps (33% of African-Americans v. 24% of Hispanics v. 12% of whites) and their Pandora music apps (33% of African-Americans v. 27% of Hispanics v. 14% of whites)

The Nielsen study indicates that cell phone screen real estate is valuable

Slight majorities of Nielsen's recent app downloaders said they organize their apps so that the most frequently used are easily accessible (59%), and that they delete apps from their phones that are not useful or helpful (56%). And this culling process happens relatively quickly; among those who had deleted an app, 62% said they usually do it within two weeks of downloading the software. The men in the Nielsen sample deleted apps more quickly than women; 40% of the male recent-downloaders said they delete apps they did not find useful within a week, compared with 29% of the women.

About Pew Internet Project Findings

The figures from the Pew Internet Project survey were gathered in a telephone survey of a representative sample of 2,252 U.S. adults age 18 and older between April 29 and May 30, 2010. The sample included 1,917 adult cell phone users, 744 of whom were contacted on their cell phones. The margin of error is +/- 2.4 percentage points for results based on the total sample of adults, and +/- 2.7 for results based on cell phone users.

The Nielsen data are from an online, self-administered survey with a nonprobability sample of 4,265 recent apps downloaders originally identified in Nielsen's Mobile Insights survey of cell phone subscribers. Because the survey is not based on a probability sample, no margin of error can be computed and the results cannot be generalized to the population of recent app downloaders with a known degree of precision. The Mobile Insights sample is drawn from a combination of online panels and is augmented by a Spanish language phone survey in highly concentrated Hispanic markets using a residential phone list sample frame for improved coverage of Hispanics. The Apps Playbook follow-up survey was conducted in December of 2009, and screened for "recent downloaders"—those who had downloaded an app in the past 30 days. The Apps Playbook data includes teen as well as adult cell phone subscribers, but for this report, percentages are based only on the 3,962 adults ages 18 and older who had downloaded an app in the past 30 days.

Part I. The Apps Landscape

Cell phones now permeate American culture. As they become more powerful as connected, multi-media, handheld devices, a new ecosystem of computing applications is being created around them. The emergence of this pervasive mobile connectivity is changing the way people interact, share creations, and exploit the vast libraries of material that are generated for the internet.

The newest national phone survey of the Pew Research Center's Internet & American Life Project shows that 82% of adults are cell phone users, and about one-quarter of adults (23%) now live in cell phone only households – that is, households with no landline phone. According to Pew Internet survey data, as of September 2009, three-quarters of 12-17 year-olds had cell phones, and a 2010 Kaiser Family Foundation study indicated almost a third of 8 to 10 year-olds in the U.S. have cell phones today.³

The widespread embrace of mobile technology has spawned the development of an “apps culture.” As the mobile phone has morphed from a voice device to a multi-channel device to an internet-accessing mini-computer, a large market of mobile software applications designed specifically for cell phones has developed alongside it.

Currently, the cell phone industry lacks a standard, widely shared definition of what is and is not considered an “app.” Traditionally the term “app” has been used as shorthand for any software application. With the advent of the mobile phone, the term “app” has become popular parlance for software applications designed to run on mobile phone operating systems. For the purpose of this report, apps are defined as end-user software applications that are designed for a cell phone operating system and which extend the phone's capabilities by enabling users to perform particular tasks. Assuming this definition, cell phone *apps* as discussed here are distinct from cell phone *functions*, which are hardware-enabled activities such as taking pictures and recording video and/or which run on systems software. Cell phone apps as defined here rely on or require certain systems software and/or hardware features to function, and may be thought of as being layered on top of them.

To understand whether and how U.S. adults have jumped into the emerging apps market, and how apps use compares to the use of other cell phone features, the Pew Internet Project recently conducted a national survey of adults age 18 and older that included 1,917 cell phone users.

Broadly, results indicate that while apps are popular among a young, tech-hungry segment of the adult cell phone using population, a notable number of adult cell phone users are not part of apps culture. Many adults who have apps on their phones,

³ Kaiser Family Foundation, Generation M²: Media in the Lives of 8 to 18 year-olds, January 2010. Available at: <http://www.kff.org/entmedia/upload/8010.pdf>.

particularly older adults, do not use them, and one in ten adults with a cell phone (11%) are not even sure if their phone is equipped with apps. Moreover, apps use ranks fairly low when compared with the use of other cell phone functions such as taking pictures and texting.⁴

35% of adults have cell phones with apps

Of the 82% of adults today who are cell phone users, 43% have apps on their phones. When taken as a portion of the entire U.S. adult population, that means that 35% have cell phones with apps. This figure includes adult cell phone users who:

- have downloaded an app to their phone (29% of adult cell phone users), and/or
- have purchased a phone with preloaded apps (38% of adult cell phone users)

A “yes” answer to either question was sufficient to include someone in the apps population. Of course, many cell owners (23%) have both pre-loaded and downloaded apps on their cell phones.

One in ten adult cell phone users do not know if they have apps on their phone

While 38% of adults cell phone users report having a phone that came preloaded with apps, another 11% of cell phone users said they did not know if their phone came with any software applications. This uncertainty about cell phone features is most pronounced among cell phone users age 50 and older, 15% of whom did not know if their phone came with apps. Just 4% of cell phone users under age 30 could not say if their phone came with software applications.

Adult cell phone users are more confident when asked whether they have ever downloaded an app, with 29% saying yes, 70% saying no, and less than one half of one percent saying they did not know.

Two-thirds of adult cell phone users who have apps actually use them

While 35% of adults have apps on their phones, only about two-thirds (68%) of adults who have apps report actually using them. That means that 24% of all adults in the U.S. use apps.

⁴ Aaron Smith, Mobile Access 2010, July 7, 2010. Available at: <http://pewinternet.org/Reports/2010/Mobile-Access-2010.aspx>.

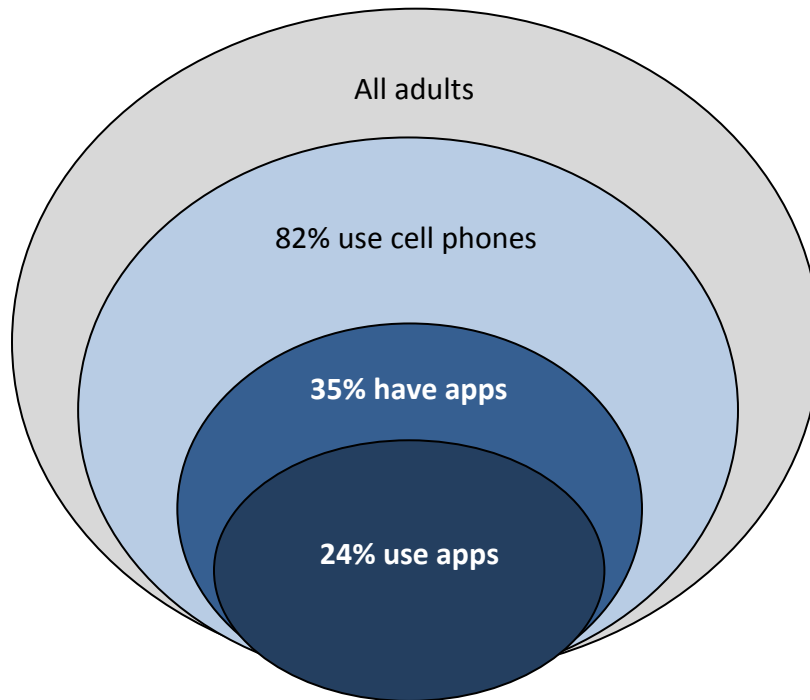


Figure 1: 24% of Adults use cell phone apps

Among those who actively use their apps, the vast majority (91%) have used them within the past 30 days. Just 9% of apps users say it has been more than 30 days since the last time they used the apps on their phone.

Apps users are younger, more educated, and more affluent than other cell phone users

Apps users have a distinct demographic profile when compared with other cell phone using adults, and when compared with the entire U.S. adult population. Apps users skew male, and they are much younger than the broader population. Overall, they are also more educated and more affluent than other cell phone users or the adult population as a whole. The apps-using population also skews slightly Hispanic when compared with other cell phone users and all adults.

App users are disproportionately male, young, educated and affluent

% of each group in each demographic category

	App Users (n=460)	Adult Cell Phone Users Who Do Not Use Apps (n=1,457)	Total U.S. Adults (n=2,252)
Gender			
Male	57	46	48
Female	43	54	52
Age			
18-29	44	18	23
30-49	41	34	34
50+	14	46	41
Race/Ethnicity			
White (non-Hispanic)	64	70	69
Black (non-Hispanic)	14	12	12
Hispanic (English-speaking)	14	11	11
Education			
Less than high school	8	12	13
High school graduate	24	35	34
Some college	29	24	25
College graduate	39	28	28
Annual Household Income			
Less than \$50,000	41	43	46
\$50,000-\$74,999	15	15	14
\$75,000+	36	24	24

Source: Pew Research Center's Internet & American Life Project, April 29-May 30, 2010 Tracking Survey.

Among adults who have apps, age is the strongest predictor of apps use

It is clear that young adult cell phone users are the most eager apps adopters. While 79% of 18-29 year-olds who have apps on their phones say they use them, that figure drops to 67% among 30-49 year-olds and just 50% among adults age 50 and older.

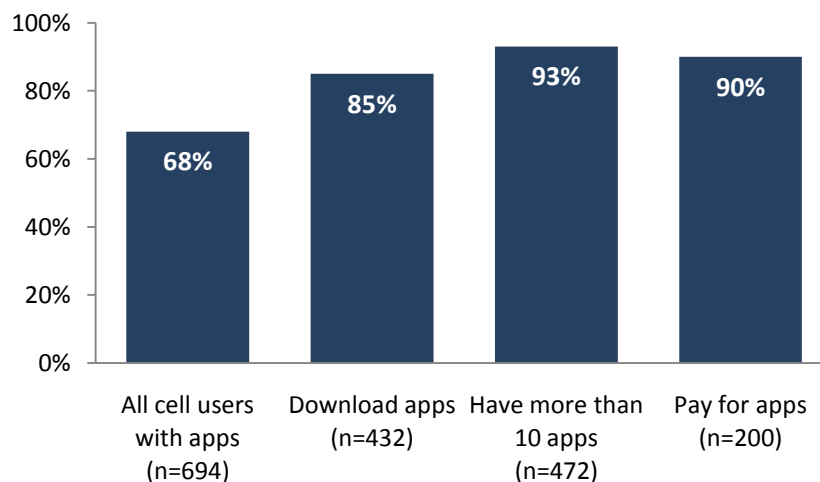
Cell phone only adults (those who have a cell phone but no landline phone) are also especially likely to use the apps on their phone. Some 75% of this group who have apps say they use them. This may be due in part to a disproportionate number of cell only adults relying on their phones for internet access and participation in online activities.⁵

It is not surprising that adults who are heavy cell users in general (heavy texters and heavy voice users) are much more likely than other adults to use their apps and to have used them in the past 30 days. The relationship between apps use and the use of other cell phone features/technologies is discussed in detail in Part III of this report.

Overall, adults who have more apps on their phone, those who have downloaded apps (as opposed to purchasing a phone that is preloaded with apps), those who have downloaded an app recently (within the past 30 days), and those who have paid for an app download are significantly more likely than other adults to actually use the software on their phones.

Adults with more apps, those who download, and those who pay are most likely to use them

% within each group who use the apps on their phone...



Source: Pew Research Center's Internet & American Life Project, April 29-May 30, 2010 Tracking Survey.

⁵ In the current Pew Internet Project survey, adult cell phone users who either only have a cell phone or who have a landline but rely mainly on their cell phone to make calls are significantly more likely than other adults to be wireless internet users (74% of cell only adults and 86% of dual phone users who rely mainly on their cell are wireless internet users, compared with just 47% of other adults).

Among those who have apps, the average number of apps is fairly high at 18

Among adult cell phone users who have software applications on their cell phones, the mean number of apps is 18. However, the median number of apps is 10, indicating there are heavy apps users on the high end of the response scale who have a disproportionate number of apps on their phones. This is particularly true among the youngest adults.

Again, there is some uncertainty among cell phone users, particularly older cell phone users, about what software they have on their phones. Fully 18% of cell phone users with apps on their phones do not know how many they have. That figure doubles to 36% among cell phone users age 50 and older.

Looking just at those who know how many apps they have, young adult cell phone users on average have a greater number of apps on their phones. The mean number of apps for 18-29 year-olds is 22, compared with a mean of 16 for 30-49 year-olds, and 13 for adult cell phone users age 50 and older. However, the medians show considerably less variation, with young adults having a median of 12 apps on their phone and those over age 50 having a median of 8.

The average adult with apps has 18 on their phone, and young adults have more

Mean and median number of apps for each group...

	Median	Mean
All adults with apps	10	18
Age 18-29	12	22
Age 30-49	10	16
Age 50+	8	13

Source: Pew Research Center's Internet & American Life Project, April 29-May 30, 2010 Tracking Survey. N=694 adult cell phone users with apps.

Apps use ranks relatively low when compared with other cell phone activities

While 24% of adults, or 29% of adult cell phone users, report using apps on their phones, apps use is not the most popular feature of cell phones when compared with other non-voice cell phone activities. Taking pictures and texting are far and away the most popular cell phone activities, with apps use ranking lowest among the various activities Pew Internet has asked about.

App use ranks low on a list of non-voice cell phone activities

% of adult cell phone users who do each of the following on their phone...

Take a picture	76%
Send or receive text messages	72
Access the internet	38
Play a game	34
Send or receive email	34
Record a video	34
Play music	33
Send or receive instant messages	30
Use an app	29

Source: Pew Research Center's Internet & American Life Project, April 29-May 30, 2010 Tracking Survey. N=1,917 adult cell phone users.

These data may reveal again, however, some uncertainty among adult cell phone users about when they are, and are not, using apps. Many of the activities in the above table, such as playing a game and sending and receiving email, often make use of software applications, and therefore constitute apps use. Thus, one would expect the percent who say they use apps to be higher. Yet, apps use garners a slightly lower percentage of “yes” responses from cell phone users than do other app-enabled activities.

One might infer from these figures that adults are not always aware when engaging in various activities using their phones that they are, in fact, using an app or software application. This may be due, in part, to confusion among the public over whether the different software that comes preloaded on their phone are “apps,” or whether an app is something that must be purchased separately or downloaded from the internet.

Part II. Apps Downloading

As noted above, while 43% of adult cell phone users have apps on their phone, significantly fewer (29%) have actually downloaded an app. The remaining 14% only have preloaded apps on their phone. Apps downloaders are slightly different demographically from those who have only preloaded apps, and are distinct from cell phone users in general.

The downloading population is demographically skewed

As with the apps-using population as a whole, apps downloaders are younger, more educated, and disproportionately male when compared with the full U.S. adult population. When downloaders are compared just to other adults with apps—those who have preloaded apps but do not download—they are similar in their educational attainment yet are still disproportionately young and male.

App downloaders are demographically distinct from those with only preloaded apps and U.S. adults in general

% of each group in each demographic category...

	App Downloaders (n=432)	Preloaded Apps Only (n=262)	Total U.S. Adults (n=2,252)
Gender			
Male	57	49	48
Female	43	51	52
Age			
18-29	47	22	23
30-49	39	46	34
50+	14	31	41
Education			
Less than high school	8	7	13
High school graduate	25	25	34
Some college	29	31	25
College graduate	38	37	28
Annual Household Income			
Less than \$50,000	41	37	46
\$50,000-\$74,999	15	16	14
\$75,000+	37	34	24

Source: Pew Research Center's Internet & American Life Project, April 29-May 30, 2010 Tracking Survey.

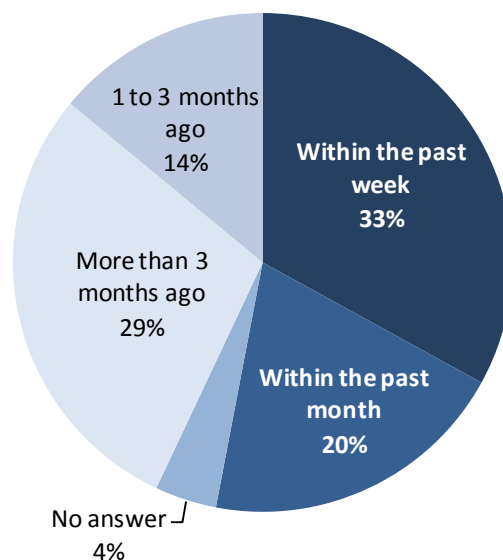
One in ten adults with a cell phone has downloaded an app in the past week; one in five 18-29 year-old cell phone users has done so

In the Pew Internet survey, respondents who had downloaded apps were asked when their most recent download had occurred. About half (53%) say their most recent apps download was in the past 30 days, including 33% who say their last download was within the past week. As a fraction of all cell phone-using adults, that equates to 15% who have downloaded an app in the past month, including 10% who have downloaded an app in the past week.

Thus, even among downloaders, the portion who is very actively engaged in apps culture is relatively small. A significant percentage of downloaders, 43%, say they have not downloaded an app in more than a month.

When was your most recent app download?

% of downloaders whose last download was...



Source: Pew Research Center's Internet & American Life Project, April 29-May 30, 2010 Tracking Survey. N=432 adult app downloaders.

Again, it is the youngest adult cell phone users leading the way, with 62% of 18-29 year-old apps downloaders having downloaded software to their phone in the past month (including 39% in the past week). That equates to 20% of adult cell phone owners under age 30 who had downloaded an app to their phone in the past week.

One in eight adults with a cell phone has paid to download an app

Among the one-third of adult cell phone users who download apps, just under half (47%) have paid for an app, with the remainder saying they only download apps that are free. Put in broader context, that means that 13% of all adult cell phone users have paid to download an app to their phone. The more apps someone has on her phone, the more likely she is to have paid for one at some point.

There are very few notable demographic differences between downloaders who pay for apps and those who do not. Only one subgroup of downloaders stands out in this regard, and that is heavy cell voice users. Downloaders who make more than 30 calls on their phone per day are significantly more likely than other downloaders to have paid for an app (61% v. 45%).

For more on what types of apps downloaders pay for, and how much they spend, see Part IV of this report.

Part III. Mobile Computing

The rise of “apps culture” reflects the transition of cell phones from voice communication devices to mobile computing devices. As cell phone use in general increases, wireless internet use is also on the rise, particularly among Hispanic and African-American adults.⁶ Fully 59% of adults are now mobile internet users, meaning they access the internet wirelessly via a laptop or cell phone. As mobile computing and internet use become the norm, cell phones are increasingly taking on functions once served by desktops and laptops. And for a significant portion of low income and nonwhite adults, cell phones represent their *only* means of accessing the internet and engaging in some online activities. Thus, many adults today expect (and need) their phones to serve a wide range of functions.

As one might expect, adult cell phone users who embrace “apps culture” also tend to embrace other cell features and other technologies in general. These patterns are difficult to disentangle, as there are circular relationships between apps use and the use of the internet and other technologies. For instance, social media users (adults who use either social network sites such as Facebook or status update sites such as Twitter) are twice as likely as other cell phone users to have apps on their phones (59% v. 24%). Yet many cell phone apps enable social media use, and these apps are in fact among the most popular (see Part IV of this report). Likewise, wireless internet users are more likely than other online adults to be apps users. Yet downloading an application in and of itself requires wireless internet access, which would mean that apps downloaders are wireless internet users by default. Moreover, these relationships are even further complicated by the fact that not all cell-using adults recognize activities they engage in on their phones as app-enabled, when in fact they might be.

Therefore, rather than pinpoint causal direction in these relationships, in this section we simply show the strong correlations between apps use and various online activities, cell phone activities, and technology use in general.

Heavy technology users are particularly likely to have apps on their phones and to use the apps they have

As noted earlier in the report, 38% of cell phone users have purchased a phone with preloaded apps and 29% have downloaded an app themselves. About a quarter of adult cell phone users (23%) have *both* paid and preloaded apps on their phones. Not surprisingly, heavy technology users are more likely than other adults to both download apps and to purchase phones with apps.

⁶ Aaron Smith, Mobile Access 2010, July 7, 2010. Available at: <http://pewinternet.org/Reports/2010/Mobile-Access-2010.aspx>.

Heavy phone and internet users are more likely to have apps, download apps, and buy phones equipped with apps

% of each group who has apps, downloads apps, and purchases phones with apps...

	Have apps	Download apps	Purchase app-equipped phones
Total cell phone users (n=1,917)	43	29	38
Internet use			
Daily internet users (n=1,222)	54	38	48
Home broadband users (n=1,321)	51	35	45
Premium broadband users (n=479)	61	43	53
Social network site users (n=929)	59	43	51
Twitter users (n=238)	71	56	63
Phone use			
Texters (n=1,189)	56	39	48
Heavy texters (51+ texts per day) (n=144)	75	63	62
Heavy cell voice users (31+ calls per day) (n=94)	76	57	60
Dual phone users who rely mainly on their cell (n=330)	62	42	55
Cell phone only adults (n=278)	50	37	41

Source: Pew Research Center's Internet & American Life Project, April 29-May 30, 2010 Tracking Survey.

As the above table indicates, adult cell phone users who use the text features on their phones, and particularly heavy texters (those who send more than 50 texts on a typical day), are significantly more likely than other cell phone users to download apps. About four in ten texters (39%) have downloaded an app, a figure that drops to just 4% among adult cell phone users who do not text. Among the heaviest texters, those who send and receive more than 50 texts a day, 63% have downloaded an app to their phone.

Heavy technology users on average have more apps on their phones

As one might expect, heavy technology users in general tend to have more apps on their phones than cell phone users who do not embrace other technologies. The table below shows that some of the highest reported mean numbers of apps are among heavy cell voice users and heavy texters. Cell-using adults who have premium broadband at home, those who use status update sites such as Twitter and adults who go online from their

phones on a daily basis also report a higher average number of apps on their phones. These groups are also especially likely to report using the apps they have.

The mean number of apps is 18; heavy tech users have more and are more likely to use them

	Median	Mean	% who use the apps they have
All adults with apps (n=694)	10	18	68%
Premium broadband at home (n=260)	12	21	67%
Twitter users (n=160)	10	23	80%
Access internet via phone daily	15	24	88%
Cell phone only	11	20	75%
Heavy texters (51+ texts per day) (n=106)	11	27	79%
Heavy cell voice users (31+ call per day) (n=69)	20	32	81%

Source: Pew Research Center's Internet & American Life Project, April 29-May 30, 2010 Tracking Survey.

App users are more likely to take advantage of all of their phone's features

Overall, apps users are significantly more likely than other adult cell phone users to take advantage of every feature of their cell phone asked about in the survey, including email, texting, taking pictures, playing music, instant messaging, recording a video, playing a game, accessing the internet, purchasing a product online, and accessing social networking sites from their phone.

Again, it is important to note that apps use and use of these other cell phone features are not mutually exclusive. Many of these activities make use of apps, and apps that enable these activities are among the most popular downloads (see Part IV of this report).

It is also important to note that these figures include adults whose phones may not be equipped to perform some of these tasks. Apps users are likely to have phones that are able to perform more of these functions, which explains, in part, their higher reported use of different phone features.

App users are more likely to embrace other phone features as well

% of each group who use their phone to...

	App users (n=460)	Other cell phone users (n=1,457)
Take a picture	97	67
Text	96	61
Access the internet	86	18
Send or receive email	76	16
Play music	72	17
Play a game	71	19
Access a social network site	64	28
Send or receive instant messages	57	19
Record a video	62	22
Post a photo or video online	44	16
Purchase a product	31	11
Access Twitter or another status update site	30	8

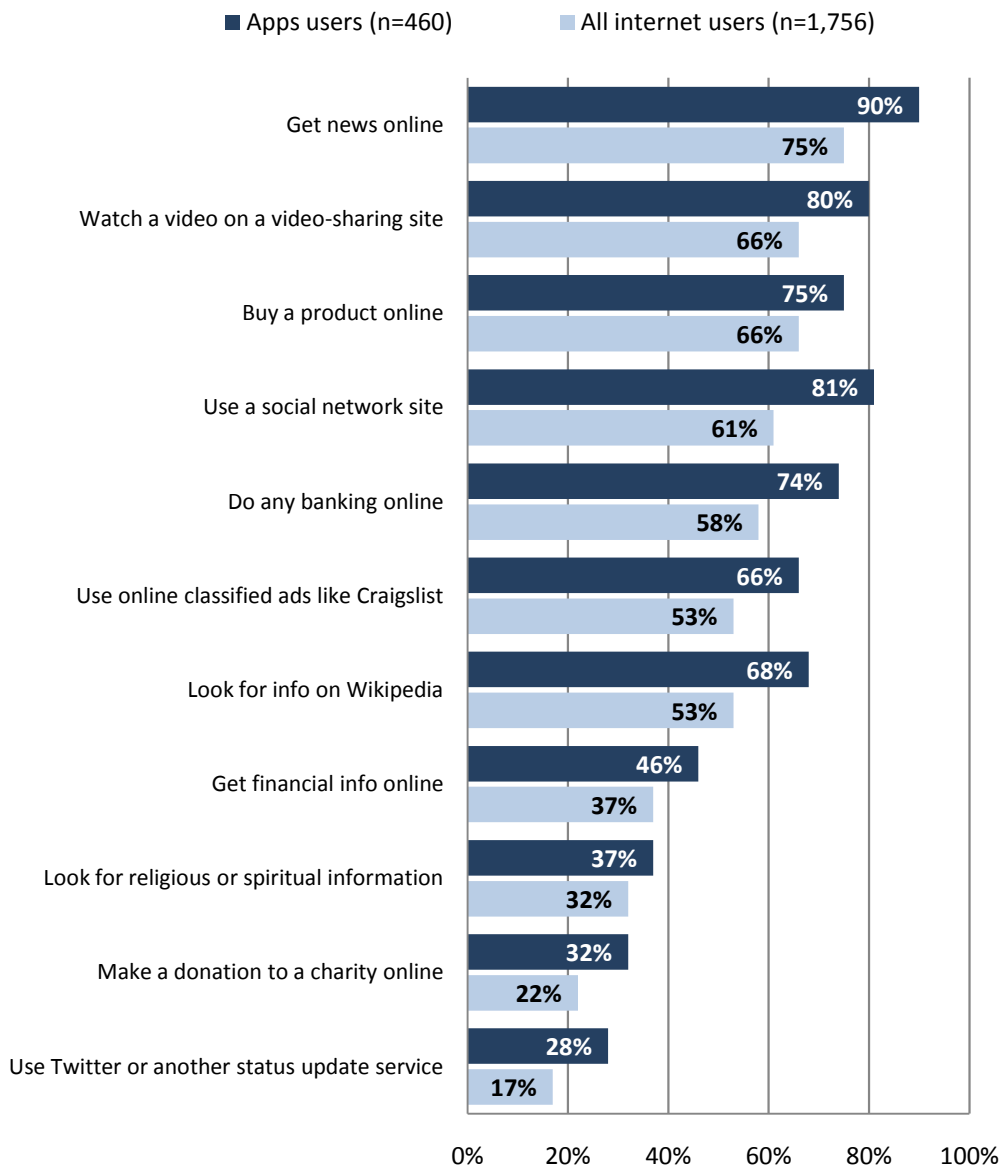
Source: Pew Research Center's Internet & American Life Project, April 29-May 30, 2010 Tracking Survey.

Apps users are more engaged in a wide range of online activities

Due in part to the web accessibility and increased engagement many apps provide, it is logical that apps users are more likely than other adults to engage in almost every online activity asked about in the survey. They are particularly likely to use social network sites such as Facebook and status update sites such as Twitter when compared with internet users as a whole.

What do apps users do online?

% of each group who use the internet to...



Source: Pew Research Center's Internet & American Life Project, April 29-May 30, 2010 Tracking Survey.

Part IV. The Nielsen Apps Playbook

As part of its ongoing research into telecom trends, the Nielsen Company conducts a quarterly tracking survey of more than 80,000 mobile subscribers age 13 and older sampled from a combination of online panels and augmented with listed Hispanic telephone sample. Among other measures, the Mobile Insights survey identifies mobile subscribers who have downloaded an app to their phone. In the fourth quarter of 2009, Nielsen found that 13% of their *adult* (age 18 and older) mobile subscribers had downloaded an app in the past 30 days. As noted earlier, the current Pew Internet survey finds that as of April 2010, 15% of cell-phone using U.S. adults age 18 and older had downloaded an app to their phone in the past 30 days.

In December 2009, Nielsen completed online, self-administered surveys with 4,265 apps downloaders originally identified in the Mobile Insights survey. This follow-up survey (The Nielsen Apps Playbook) asked “recent downloaders”—those who had downloaded apps in the past 30 days—more detailed questions about the types of apps they download, in what contexts they use their apps, and whether and how much they pay for apps. The results reported here are based on the 3,962 *adults* ages 18 and older in the Nielsen sample who had downloaded an app in the past 30 days.

It should be noted that because Nielsen’s Mobile Insights survey is administered to a nonprobability sample, it is not representative of all recent apps downloaders and the findings reported here should be considered descriptive. However, the Nielsen data produce overall estimates of adult apps downloading rates comparable to the most recent Pew Internet survey. As the table below indicates, after weighting, the two samples are similar in terms of sex and race/ethnicity, though the Nielsen sample is skewed slightly toward white non-Hispanics and away from African-Americans. The two samples diverge more notably on education and income, with the Nielsen sample overrepresenting college graduates and the highest income categories. In terms of age, the Pew probability sample produces a recent-downloader population that is slightly older than the Nielsen sample.

Weighted demographic profiles of recent apps downloaders from the Pew Internet and Nielsen surveys

% of each group in each demographic category...

	Pew Internet Survey Sample (n=221)	Nielsen Survey Sample (n=3,692)
Gender		
Male	59	57
Female	41	43
Age		
18-24	14	15
25-34	17	32
35-54	36	41
55+	31	13
Education		
Less than high school	9	2
High school graduate	27	8
Some college	25	22
College graduate	38	59
Race/Ethnicity		
White, non-Hispanic	58	65
Black, non-Hispanic	15	7
Hispanic	19	18
Annual Household Income		
Less than \$50,000	41	26
\$50,000-\$74,999	15	21
\$75,000+	34	47

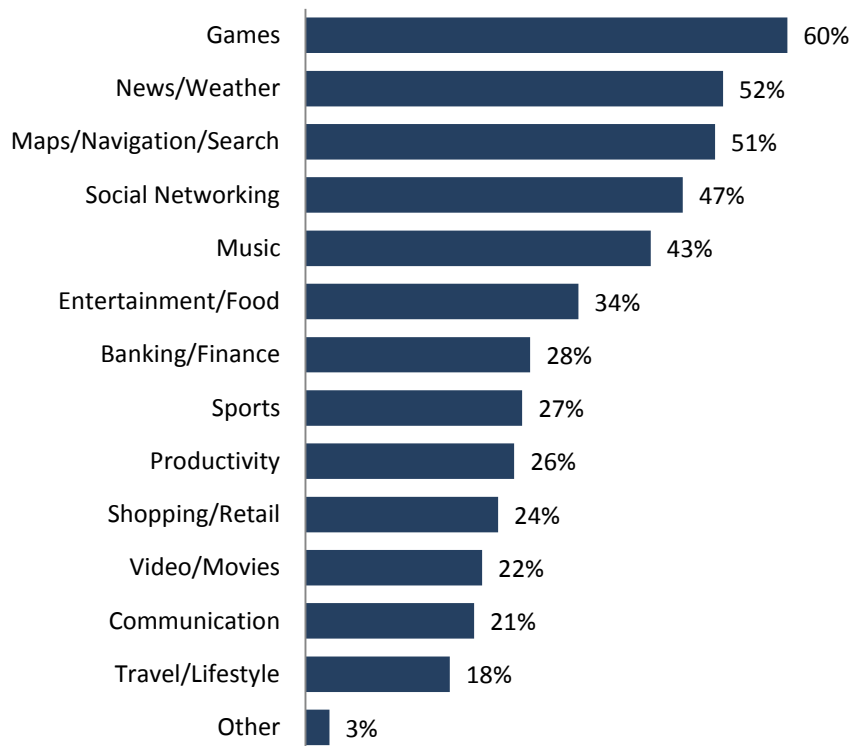
Adult apps users are hooked on games

As indicated by the Pew Internet survey data, apps downloading and apps use are not synonymous. Some adults may download apps that they do not actually use. Thus, the Nielsen App Playbook asks about both recent *downloading* behavior, as well as which apps recent-downloaders have *used* in the past 30 days, how frequently they use them, and in what contexts.

As the table below indicates, the adult downloaders in the Nielsen sample are hooked on games. Six in ten of these recent downloaders said that they had used a game app in the past 30 days. By comparison, roughly half said they had used a news/weather app, map/navigation app, or social networking app in that same timeframe. While music apps ranked second in terms of total *downloads*, they ranked fifth on the most used list for this group.

What are the most popular types of apps?

% of Nielsen recent downloaders who have used each category of apps in the past month...



Source: The Nielsen App Playbook, December 2009. N=3,962 adults who downloaded an app in the 30 days prior to the survey.

In the Nielsen sample, some demographic groups were more likely than others to use particular categories of apps. For instance, men in that sample were more likely than women to have used banking/finance, sports, productivity, and video/movie apps in the past 30 days. Women recent-downloaders in the sample, on the other hand, were more likely to have used games, social networking, music, and entertainment/food apps.

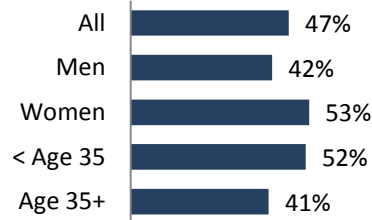
The tables below show rates of use for the major categories of apps across demographic groups.

The percentage of Nielsen recent downloaders in each group who have used each kind of app in the past month

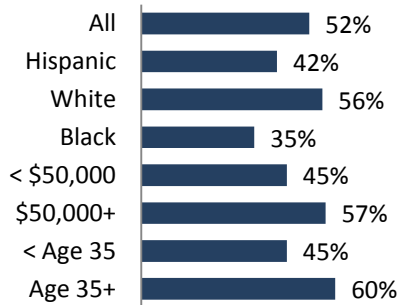
Games



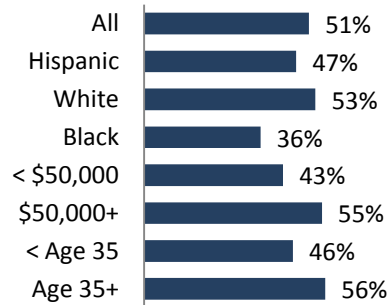
Social Networking



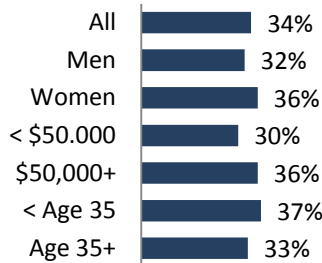
News/Weather



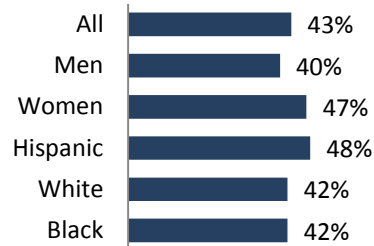
Maps/Navigation/Search



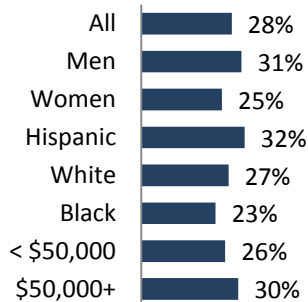
Entertainment/Food



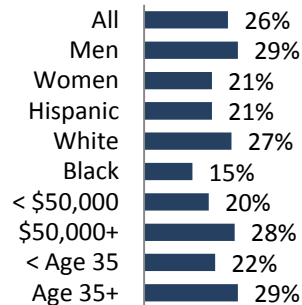
Music



Banking/Finance



Productivity

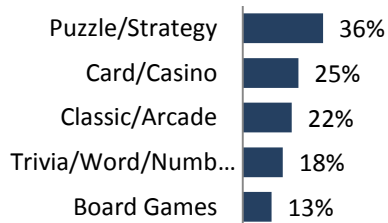


Source: The Nielsen App Playbook, December 2009. N=3,962 adults who downloaded an app in the 30 days prior to the survey.

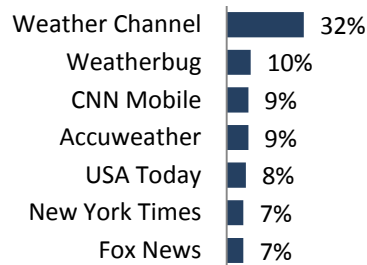
Within the different categories of software applications, some apps stood out as particularly popular among the Nielsen sample. Asked which specific apps they had used in the past 30 days, puzzle/strategy games ranked highest in the games category, while the Weather Channel was far and away the most used news/weather app for this group. Google applications comprised three of the top four map/navigation/search apps, while Facebook topped the list of social networking apps used by Nielsen’s adult downloaders.

The percentage of Nielsen recent downloaders who used each type of app in the past month

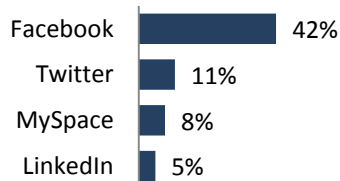
Games



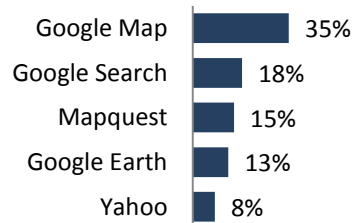
News/Weather



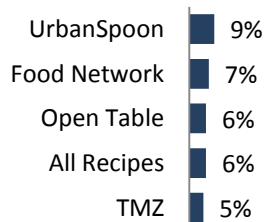
Social Networking



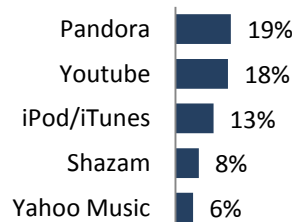
Maps/Navigation/Search



Entertainment/Food



Music



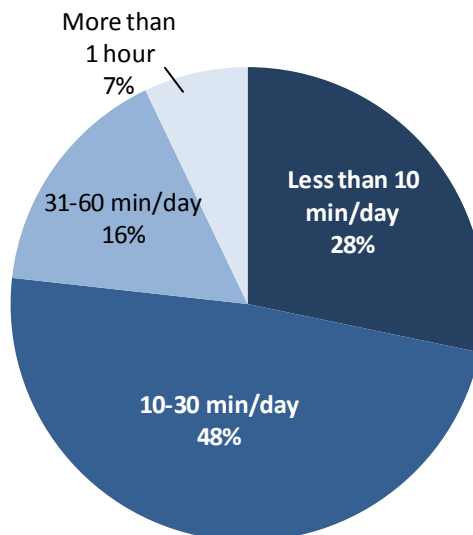
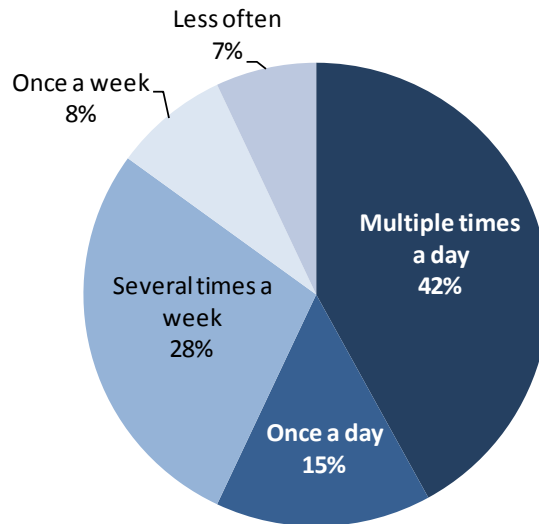
Source: The Nielsen App Playbook, December 2009. N=3,962 adults who downloaded an app in the 30 days prior to the survey.

Frequency of Apps Use

More than half of the Nielsen recent apps downloaders (57%) reported using their apps daily, yet the vast majority said they spend less than 30 minutes per day using their apps. Just one quarter of Nielsen's downloaders (23%) said they use their apps for at least a half an hour a day.

57% of Nielsen's recent downloaders say they use their apps daily, but most use them for less than 30 minutes a day

% of recent downloaders who use apps...



Source: The Nielsen App Playbook, December 2009. N=3,962 adults who downloaded an app in the 30 days prior to the survey.

Somewhat surprising is the fact that the youngest apps downloaders in the Nielsen sample, those age 18-24, were not the most frequent apps users. While 29% of this age group said they use their apps *multiple times a day*, the same was true of 44% of the 25-34 year-olds and 44% of those age 35 and older. Nielsen's young apps users were also more likely than their older counterparts to say they use their apps for *less than 30 minutes per day* (84% of the 18-24 year-olds v. 74% of the 25-34 year-olds v. 75% of those age 35 and older).

Among Nielsen's sample of downloaders, the frequency of apps use varied by race as well, with the white and Hispanic downloaders more likely than the African-Americans to use their apps daily (57% whites v. 54% Hispanics v. 48% African-Americans). However, Nielsen's white apps downloaders were also the most likely to say that they use their apps for less than 10 minutes a day (30% whites v. 25% Hispanics v. 23% African-Americans).

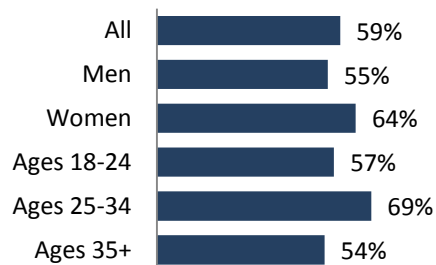
How often are some of the most popular apps used?

% of Nielsen downloaders with each app who use it daily...

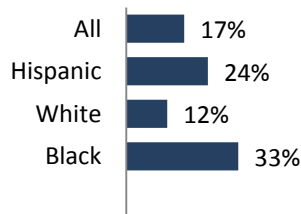
Twitter



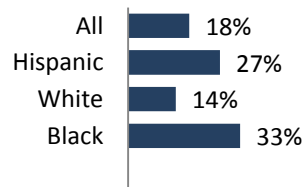
Facebook



YouTube



Pandora

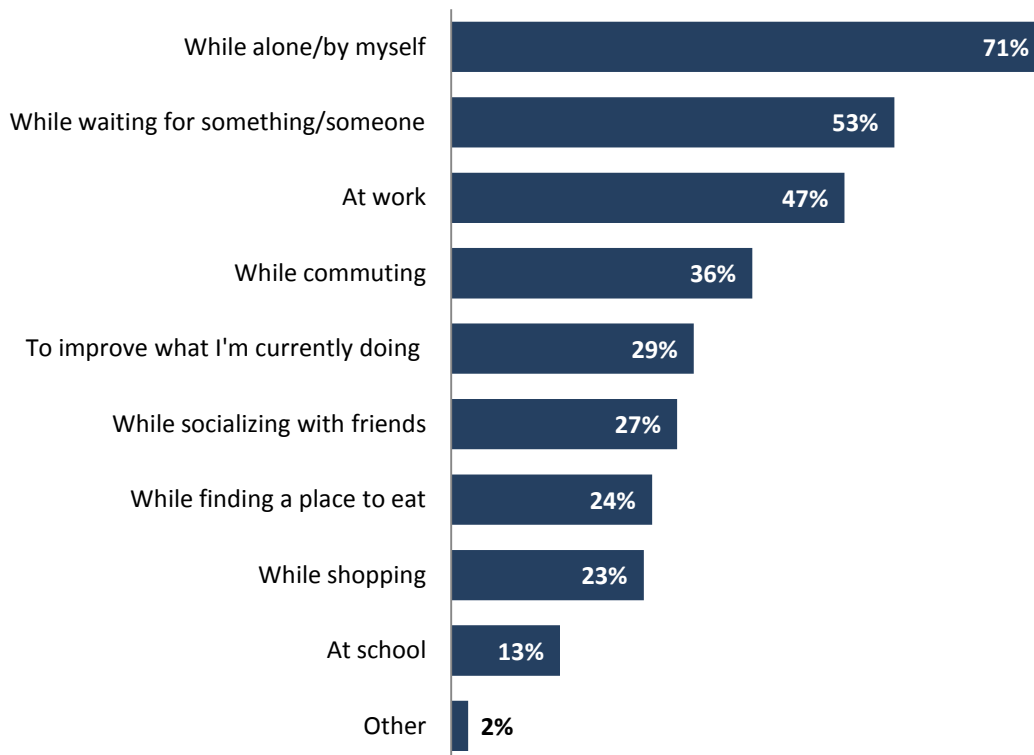


Source: The Nielsen App Playbook, December 2009. N=3,962 adults who downloaded an app in the 30 days prior to the survey.

Adult downloaders in the Nielsen sample reported using their apps in a variety of contexts. Asked in which situations they most frequently use their apps, seven in ten (71%) said they frequently use their apps when they are alone, and about half said they frequently use their apps while they are waiting for someone or something (53%) or while at work (47%). Roughly one in three Nielsen downloaders (36%) said they frequently use their apps while commuting. Overall, the adults in the Nielsen sample reported using their apps for a mix of entertainment and instrumental purposes.

When and where Nielsen’s adult downloaders are using their apps

In which of the following situations do you most frequently use your apps?



Source: The Nielsen App Playbook, December 2009. N=3,962 adults who downloaded an app in the 30 days prior to the survey.

In the Nielsen sample, men were more likely to report using apps at work (52% v. 40% of women), while women were slightly more likely to report using apps while alone (73% v. 70% of men) and while waiting for someone (59% v. 52%). Nielsen’s Hispanic and African-American downloaders were more likely than the whites in the sample to report using their apps at school (17% Hispanics v. 17% African-Americans v. 6% whites) and while socializing with friends (33% Hispanics v. 33% African-Americans v. 22% whites). The Hispanics in the sample were also more likely than whites to report using their apps while commuting, while finding a place to eat, and while shopping.

The Nielsen sample also produced some interesting situational use differences across age groups. The table below shows that young adult apps users in the Nielsen sample (those age 18-24) were the most likely to report using their apps while socializing with friends, while Nielsen’s middle-age users were the most likely to report using their apps while at work, commuting, shopping or finding a place to eat. App users age 55 and older in the Nielsen sample were the most likely to report using their apps while alone, while waiting for someone/something, and to help in an activity they are currently doing.

Among Nielsen’s downloaders, apps use varied by age

% of Nielsen downloaders in each age group who reported frequently using apps in each situation

	All	18-24	25-34	35-54	55+
While alone/by myself	71	69	70	73	77
While waiting for someone/something	53	45	53	55	62
While at work	47	44	52	46	31
While commuting	36	37	41	34	29
To improve/help what I am currently doing	29	25	30	29	35
While socializing with friends	27	36	33	22	17
While finding a place to eat	24	21	26	20	21
While shopping	23	23	26	20	21
While at school	13	42	13	5	2

Source: The Nielsen App Playbook, December 2009. N=3,962 adults who downloaded an app in the 30 days prior to the survey.

What kinds of apps are being downloaded most often by this group?

Among Nielsen’s recent adult downloaders, game apps were the most downloaded apps overall in terms of sheer volume, followed distantly by music and entertainment/food. Overall, apps that are used for personal entertainment made up a greater portion of this group’s recent downloads than those that are used for instrumental purposes, such as productivity, navigation, and finance apps.

For the Nielsen sample, games and music were the most popular in terms of the percent of downloaders *who have downloaded each type in the past 30 days*. Games were far and away the most popular, with almost half of Nielsen’s recent-downloaders saying they had downloaded at least one paid or free game app in the previous month. Roughly equal percentages of Nielsen recent-downloaders (about one in five) said they

had downloaded a music app, a news/weather app, a social networking app, a map/navigation app, or a food/entertainment app in the 30 days prior to the survey.

Games and music were also the most commonly downloaded *paid* apps for this group, as measured by the percent of Nielsen recent-downloaders who had purchased at least one of these types of apps in the past month.

The most frequently downloaded types of apps by the Nielsen sample

% of Nielsen recent downloaders who downloaded each type of app in the past month...

	Any download	Paid download	Free download
Games	45	16	34
Music	25	10	17
News/Weather	22	3	20
Social Networking	21	3	19
Maps/Navigation/Search	21	4	17
Entertainment/Food	20	4	18
Productivity	16	4	13
Sports	15	4	12
Banking/Finance	13	2	11
Shopping/Retail	13	2	11
Video/Movies	12	4	8
Travel/Lifestyle	11	2	10
Communication	10	2	8
Other	5	1	5

Source: The Nielsen App Playbook, December 2009. N=3,962 adults who downloaded an app in the 30 days prior to the survey.

The Nielsen sample produced some interesting downloading differences across age group, race/ethnic groups, and income categories, yet these differences only occurred in the case of *free* downloads. For instance, Nielsen downloaders between the ages of 25 and 44 had a higher mean number of free game downloads in the past 30 days (2.0) than both the younger (1.4) and the older (1.7) adults in the sample. Similarly, downloaders ages 25-34 in the Nielsen sample had the highest mean number of free social networking apps downloads in the month prior to the survey (.9 for the 25-34 year-olds v. .5 for the younger adults and .7 for the older adults).

The tables below show some demographic differences that emerged in the Nielsen sample in the mean number of free downloads for major categories of apps.

Mean number of free apps downloads by Nielsen's sample in each category in the past 30 days

Games

All adults	1.8
Age 18-24	1.4
Age 25-34	2.0
Age 35-44	2.0
Age 45-54	1.5
Age 55+	1.8

Social Networking

All adults	.7
Age 18-24	.5
Age 25-34	.9
Age 35-44	.7
Age 45-54	.6
Age 55+	.7

Entertainment/Food

All adults	.8
Age 18-24	.5
Age 25-34	.9
Age 35-44	.9
Age 45-54	.8
Age 55+	1.1

Maps/Navigation/Search

All adults	.6
Men	.7
Women	.5
Age 18-24	.4
Age 25-34	.6
Age 35-44	.7
Age 45-54	.6
Age 55+	.8
<\$25,000	.4
\$150,000+	1.1

News/Weather

All adults	.7
Men	.8
Women	.6
Hispanic	.6
White	.8
Black	.4
Age 18-24	.4
Age 25-34	.7
Age 35-44	.8
Age 45-54	.8
Age 55+	1.1
<\$25,000	.4
\$25,000-\$49,999	.5
\$50,000-\$99,999	.7
\$100,000-\$149,999	.8
\$150,000+	1.1

Productivity

All adults	.7
Men	.8
Women	.6
Hispanic	.7
White	.8
Black	.4
<\$25,000	.6
\$25,000-\$49,999	.6
\$50,000-\$99,999	.7
\$100,000-\$149,999	.9
\$150,000+	1.0

Source: The Nielsen App Playbook, December 2009. N=3,962 adults who downloaded an app in the 30 days prior to the survey.

Consistent with the Pew Internet survey data, the Nielsen sample produced few notable demographic differences between recent-downloaders who have paid to download an app and those who have not. Nielsen's youngest apps downloaders, those age 18-24, and adults with incomes below \$50,000 were only slightly less likely than the older and more affluent downloaders in the sample to have paid for apps.

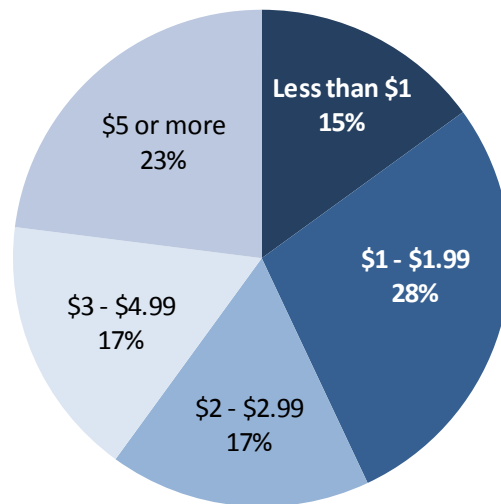
What do Nielsen's downloaders report paying for apps?

In the Nielsen Apps Playbook, 37% of the recent-downloaders said they had paid for an app in the past 30 days. As noted earlier, games accounted for the highest *percentage* of paid apps by this group, followed by music apps. Asked if they had ever converted from a free/lite trial version to a full paid version of an app, one in three (33%) Nielsen downloaders said they had done so.

To determine what the recent-downloaders are paying for apps, the Apps Playbook asked respondents how many of the *total* apps they had downloaded in the past 30 days fell into each of eight different price categories. Responses indicate that among this sample of downloaders, most paid downloads were between \$0 and \$2.99. Fully 60% of paid downloads from the month prior to the survey fell in this price range.

What do Nielsen downloaders report paying for apps?

% of paid downloads from the month prior to the survey in each price range...



Source: The Nielsen App Playbook, December 2009. N=3,962 adults who downloaded an app in the 30 days prior to the survey.

When they did pay for an app, about a third (34%) of the downloaders in the Nielsen sample said their preference was to have it billed directly by their cell phone provider, while just under a third (29%) said they preferred to put it on a credit card. Asked what factors drive those preferences, eight in ten Nielsen downloaders (80%) said that convenience was a factor, while roughly six in ten said they take into account bill consolidation (63%) and security (57%).

When paying for apps, Nielsen downloaders prefer to be billed by their provider

	% of recent downloaders
% of Nielsen recent downloaders who prefer to pay for apps by...	
Billing from their cell phone provider	34%
Credit card	29
PayPal	18
iTunes	12
Amazon 1-click	2
Google checkout	*
Other	5
% of Nielsen recent downloaders who say their preference is based on...^	
Convenience	80%
Security	43
Bill consolidation	37
Other	4

^ multiple response allowed

Source: The Nielsen App Playbook, December 2009. N=3,962 adults who downloaded an app in the 30 days prior to the survey.

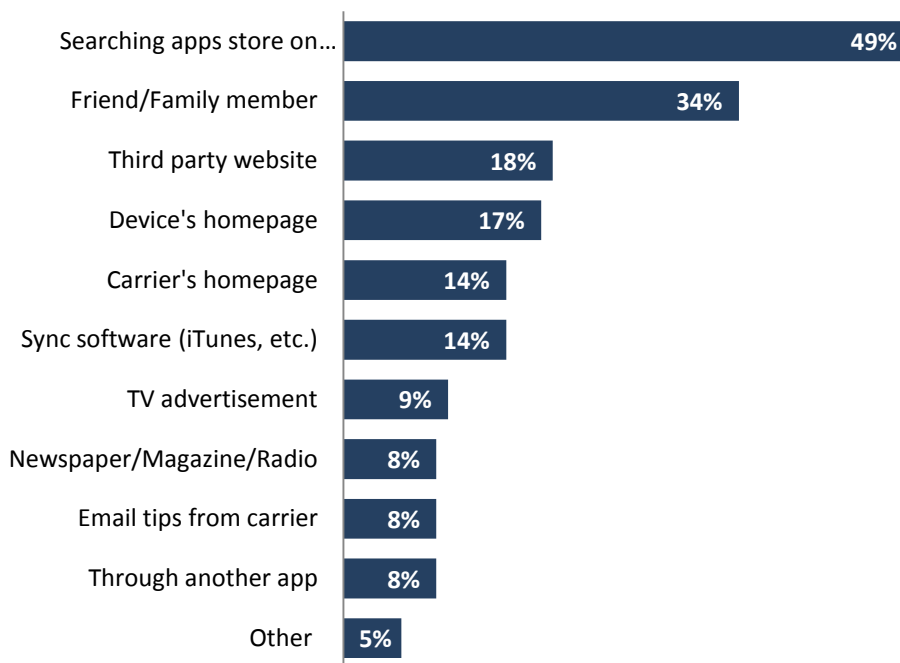
Where do downloaders say they learn about apps?

Asked how they discover the apps they download, the two most common responses from downloaders in the Nielsen sample were searching an apps store on their phone and relying on recommendations from friends and family. About half (49%) of this group said they discover apps by browsing an apps store on their phones, and about one in three (34%) said they hear about them from friends and family.

The women in the sample were slightly more likely than the men to say they learn about apps from friends and family (39% v. 33%), while the men were twice as likely to say they learn about apps from third party websites (25% v. 12%). Nielsen's older apps downloaders, those age 55+, were also particularly likely to say they hear about apps from friends and family (42% v. 34%), and were twice as likely as the younger apps downloaders in the sample to discover apps through newspapers, magazines and radio (15% v. 7%).

How do Nielsen's downloaders learn about apps?

% of Nielsen's recent downloaders who discovered apps from each source in the past 30 days...



Source: The Nielsen App Playbook, December 2009. N=3,962 adults who downloaded an app in the 30 days prior to the survey.

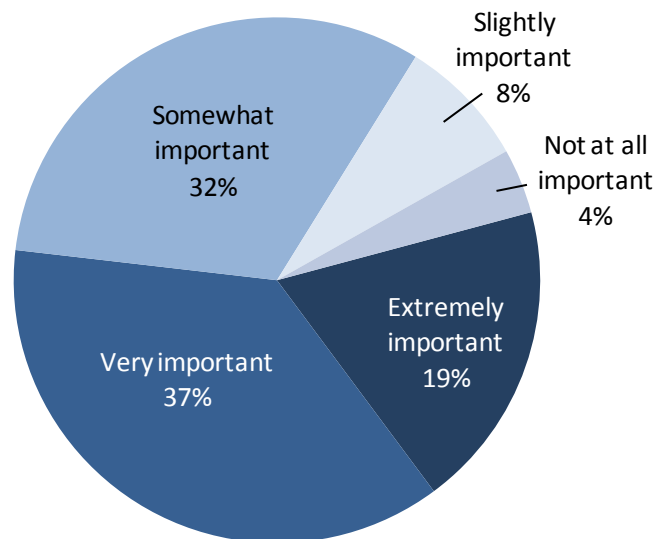
In the Nielsen sample, apps downloaders in the highest income categories, those earning \$100,000 or more annually, were particularly likely to say they discover apps by searching the apps store on their phones and through sync software, while those in the lower income categories were more likely to say they hear about apps through their carrier's homepage.

The African-American and Hispanic downloaders in the sample were also particularly likely to say they find apps through their carrier's homepage (25% African-American v. 18% Hispanic v. 12% white) and their device homepage (24% African-American v. 19% Hispanic v. 15% white).

Nielsen’s downloaders reported not only relying on the recommendations of friends and family in downloading apps, but also relying on the recommendations of strangers. The Nielsen App Playbook asked recent-downloaders how important user reviews and ratings are in their decision to download an app. Almost nine in ten downloaders in this survey (88%) said that user reviews are at least somewhat important, including 19% who said they are extremely important.

The importance of user ratings for this group in choosing downloads

How important are user reviews and ratings when making the decision to download an app?



Source: The Nielsen App Playbook, December 2009. N=3,962 adults who downloaded an app in the 30 days prior to the survey.

Cell phone real estate is valuable

Most apps users in the Nielsen sample report organizing their apps so that the most frequently used are most easily accessible. They also report deleting apps from their phones. The most common reasons given by this group for deleting an app is that it is not useful. And they report that this culling process happens relatively quickly; among those who had deleted an app, the majority (62%) said they usually did it within two weeks of downloading the software. The men in the sample tended to delete apps they did not find useful more quickly than the women did; 40% of the male recent-downloaders said they deleted apps they do not like within a week of getting them, while only 29% of the women said they delete apps that quickly.

Nielsen's app downloaders organize their apps and delete those that aren't useful

	% recent downloaders
Do you organize your apps so the most frequently used ones are easily accessible?	
Yes	59%
No	41
Have you ever deleted an app that you downloaded?	
Yes	56%
No	44
Main reasons for deleting an app...^	
Didn't find it useful/helpful	59%
No longer use	42
Got bored with it	37
Didn't like it any longer	33
Needed to clear space	24
Other	5

^ multiple response allowed

Source: The Nielsen App Playbook, December 2009. N=3,962 adults who downloaded an app in the 30 days prior to the survey.

Methodology

Pew Internet Project Survey

This report is based on the findings of a daily tracking 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 between April 29 and May 30, 2010, among a sample of 2,252 adults, age 18 and older. Interviews were conducted in English. For results based on the total sample, one can say with 95% confidence that the error attributable to sampling and other random effects is plus or minus 2.4 percentage points. For results based on cell phone users (n=1,917), 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, half of the time interviewers first asked to speak with the youngest adult male currently at home. If no male was at home at the time of the call, interviewers asked to speak with the youngest adult female. For the other half of the contacts interviewers first asked to speak with the youngest adult female currently at home. If no female was available, interviewers asked to speak with the youngest adult male at home. 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.

Non-response in telephone interviews produces some known biases in survey-derived estimates because participation tends to vary for different subgroups of the population, and these subgroups are likely to vary also on questions of substantive interest. In order to compensate for these known biases, the sample data are weighted in analysis. The demographic weighting parameters are derived from a special analysis of the most recently available Census Bureau's March 2009 Annual Social and Economic Supplement. This analysis produces population parameters for the demographic characteristics of adults age 18 or older. These parameters are then compared with the sample characteristics to construct sample weights. The weights are derived using an iterative technique that simultaneously balances the distribution of all weighting parameters.

Following is the full disposition of all sampled telephone numbers:

Table 1: Sample Disposition

Landline	Cell	
20,895	12,699	Total Numbers Dialed
1,160	251	Non-residential
982	18	Computer/Fax
12	---	Cell phone
8,886	4,906	Other not working
1,675	176	Additional projected not working
8,180	7,348	Working numbers
39.1%	57.9%	Working Rate
558	59	No Answer / Busy
870	2,054	Voice Mail
68	13	Other Non-Contact
6,684	5,222	Contacted numbers
81.7%	71.1%	Contact Rate
521	740	Callback
4,305	3016	Refusal
1,858	1,466	Cooperating numbers
27.8%	28.1%	Cooperation Rate
284	235	Language Barrier
---	460	Child's cell phone
1,574	771	Eligible numbers
84.7%	52.6%	Eligibility Rate
66	27	Break-off
1,508	744	Completes
95.8%	96.5%	Completion Rate
21.8%	19.3%	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 21.8 percent. The response rate for the cellular sample was 19.3 percent.

The Nielsen Apps Playbook

The Nielsen Company conducts a quarterly attitude and behavior survey of more than 80,000 mobile subscribers in the U.S. ages 13 and older. The Mobile Insights survey covers multiple research topics, measuring the attitudes and behaviors of both wireless subscribers and non-subscribers, and including questions about:

- Subscriber Usage
- Brand Awareness
- Customer Satisfaction
- Network Performance Perceptions
- Switching Behavior

Mobile Insights surveys over 25,000 panelists every month—over 300,000 consumers a year. The Mobile Insights survey is fielded during the first half of each month. The Mobile Insights panel includes a subset of 2,500 Hispanic panelists every month—over 30,000 Hispanic consumers a year. Within this Hispanic panel subset, each month at least 1,000 respondents complete an online survey and 1,500 complete a phone survey.

Because the survey is not based on a probability sample, no margin of error can be computed and the results cannot be generalized to the population of recent app downloaders with a known degree of precision.

Sampling

Survey respondents are selected at random within Consolidated Metropolitan Statistical Areas/Metropolitan Statistical Areas (CSMA/MSA) markets from the panel rolls of five or more different online panel source companies in order to attain a diverse sample of persons age 13 and older in the US. The Mobile Insights survey sample is selected from internet sample frames constructed and maintained for general population surveys by such companies as Harris Interactive, Market Tools, Survey Sampling International, e-Rewards and Lightspeed Research. The Hispanic portion of the online sample described above is augmented by a Spanish language phone survey in highly concentrated

Hispanic markets using a residential phone list sample frame for improved coverage of unacculturated Hispanics.

Each month, a sample of web-enabled online panelists is sent invitations to participate in the Mobile Insights survey via email. The study is described to survey participants as one about “cell phones” and respondents are asked to share their opinions “regardless of whether you use a cell phone.” In the survey email invitation, potential participants are directed to the Mobile Insights survey website.

Initial double and/or triple opt-in recruiting practices by the sample providing companies are conducted through a wide variety of sources including: opt-in recruiting during online personalization registration, banner and/or text advertising on selected websites, follow-on recruiting for panelists at the end of ad-hoc surveying and direct mail recruiting through opt-in electronic mail accounts.

In order to maintain reliability and integrity in the sample, the following procedures are used:

1. Unique URL protection: Each invitation contains a unique website address assigned to the targeted email address. This unique address allows for only the invited participant to access the survey website and the survey can be completed only once with a single credential.
2. Only cell phone users can respond to user questions: Only primary users of mobile technology are designated to complete the specific usage, consumption and attitudinal sections of the survey. As a precaution, each respondent is re-qualified as a mobile user. Only primary cell phone users are responsible for providing data about their personal and business usage of mobile services.
3. Second invitations: In order to maximize the survey sample, second follow-up email invitations are mailed to all nonresponding invitees, reminding them of the opportunity to participate in the survey.

The supplemental Spanish language sample is recruited using random digit dialing (RDD) in Puerto Rico. In the continental US, sample is recruited from a listed household sample frame that has been filtered using a Hispanic surname database derived from the US Census Bureau. This Hispanic surname database of listed households is the criterion for the random selection of records across phone directories in 30 residential ZIP code areas that are known to have a high density Hispanic population.

Sample design

The adult (over age 18) Mobile Insights sample is stratified by metropolitan area including 102 markets and the remaining “white space” (non-metropolitan areas). Systematic (unduplicated random) sampling is conducted within each metropolitan area and white space. Outcomes are weighted according to market-specific demographic

targets as estimated by the US Census Bureau and Nielsen Mobile market share benchmarks.

The top ten metropolitan areas are targeted for 1,250 respondents per quarter; the next 25 markets are targeted for 1,000. Other markets have quotas of 125 to 500 respondents, depending on the size of the market. 8,000 respondents are targeted in the remaining US white space.

A subsample of teens age 13–17 is also included in the monthly Mobile Insights survey. 3,500 teens are sampled separately and have quota sample requirements by age bracket as well as by region. This teen sample is weighted separately from adult sample, so teens can be analyzed separately or together with the adult population.

The supplemental telephone survey of the adult Hispanic population is conducted with participants who speak at least some Spanish in the home. Telephone interviewing (computer assisted) is conducted using telephone lists in 7 primary and 20 secondary metropolitan areas in the US that are identified as counties with Hispanic/Latino population densities of 50% or higher; the survey is also conducted in Puerto Rico. Phone surveys are targeted for 4,500 respondents per quarter. These phone survey respondents are merged with Hispanics from the online national survey, and weighting is done to US Census Bureau benchmarks for the combined sample, adjusting for penetration of acculturated and unacculturated Hispanic levels. The supplemental Hispanic sample is combined with all adults in monthly market level weighting.

Qualification

Mobile Insights qualified completes are defined as those online panelists that complete the survey; this group includes both mobile subscribers and non-subscribers.

Mobile Insights **mobile subscriber qualified completes** are defined as those panelists who answer positively to the screening question: “Do you currently use or subscribe to a cell phone service (e.g., monthly or prepaid service), regardless of who pays for it?”

Panelists are further categorized in terms of cell phone use according to their positive response to one of the following:

- 1 I have my own cell phone
- 2 I share a cell phone with someone else, but I am the primary user
- 3 I share a cell phone with someone else, and I am not the primary user
- 4 I do not use a cell phone

Nielsen Mobile includes various qualification questions in the Mobile Insights survey that route subscribers to additional usage-based survey questions. These usage-based screening questions also qualify the respondent to be invited to participate in a re-

contact survey based on targeted topical subject areas, such as mobile media. In addition, a random sample of qualified completes are invited to participate in Nielsen Mobile's Bill Panel.

Questionnaire design

All online interviews are conducted using a self-administered, online questionnaire via web-assisted interviewing software. The survey interviewing system permits online data entry by the respondents. Questionnaires are programmed into the system with the following checks:

- Question and response series
- Skip patterns
- Special edit procedures
- Mathematical checks
- Question rotation
- Consistency checks
- Range checks

For questions with precoded responses, the system permits only answers within a specified range; for example, if a question has three possible answer choices (e.g., "Agree," "Disagree," or "Not sure"), the system accepts only coded responses corresponding to these choices. All data are tabulated, checked for internal consistency, and systematically processed by computer. A series of computer-generated tables are then produced for each sample group showing the results of each survey question.

Survey participant responses are balanced to mirror the U.S. Census Bureau's demographic and geographic distributions for the U.S. population. Wireless use and subscription information is also used to align the response groups. The following factors are incorporated into the weighting scheme: age, gender, education, income, employment status, race/ethnicity, acculturation, and area population. Wireless phone usage and market share among competing providers is balanced against information available through Nielsen Mobile's Flowshare Metrics penetration and share measurement products.

Findings reported here are based on an online, self-administered follow-up survey with a subsample of 4,265 apps downloaders originally identified in Nielsen's Mobile Insights survey of cell phone subscribers. The App Playbook follow-up survey was conducted in December of 2009, and screened for "recent downloaders"—those who had downloaded an app in the past 30 days. The full Nielsen Mobile Insights data includes teen as well as adult cell phone subscribers, but for this report, percentages are based only on the 3,962 adults ages 18 and older who had downloaded an app in the past 30 days. The App Playbook sample is weighted back to the total qualified population from the Nielsen Mobile Insights survey.