Consumers and Mobile Financial Services 2013

March 2013

BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM

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Preface

The survey and report were prepared by the Consumer Research Section of the Federal Reserve Board's Division of Consumer and Community Affairs (DCCA).

DCCA directs consumer-related functions performed by the Board, including conducting research on financial services policies and practices and their implications for consumer financial stability, community development, and neighborhood stabilization. For more information about DCCA, visit the Federal Reserve Board website at www.federalreserve.gov.

DCCA staff members Matthew B. Gross, Alexandra M. Rock, and Maximilian D. Schmeiser prepared this report. Federal Reserve System staff members David Buchholz, Ana Cavazos-Wright, Julia Cheney, Douglas Conover, Marianne Crowe, Allen Fishbein, Chris Foote, Kevin Foster, Geoffrey R. Gerdes, Linda Healey, Bob Hunt, Douglas A. King, Daniel A. Littman, Alejandra Lopez-Fernandini, Brian Mantel, Chris Olson, Samantha J. Pelosi, Scott Schuh, Nicholas Strychacz, and Dick Todd provided valuable comments and feedback on the design of the survey and drafting of this report.

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Executive Summary

Mobile devices have increasingly become tools that consumers use for banking, payments, budgeting, and shopping. In December 2011, the Federal Reserve Board conducted its first survey of consumers' use of mobile financial services, and released a summary report in March 2012 (referred to as the 2011 survey). Given the rapid pace of developments in the area of mobile finance, the Board conducted a second survey in late November 2012 to examine trends in adoption and use of mobile banking and payments (referred to as the 2012 survey).

This report presents findings from the 2012 online survey, which examined consumers' use of mobile technology to access financial services and make financial decisions. The findings from the current survey are also compared with the findings from the previous survey. This report looks at how consumers use their mobile phones to access their bank's services, make payments, and inform their shopping decisions.

Key findings based on the responses to the 2012 survey include:

- **Mobile phones and mobile Internet access are in widespread use**
  - —87 percent of the U.S. adult population has a mobile phone
  - —52 percent of mobile phones are smartphones (Internet-enabled)
  - —87 percent of smartphone users have accessed the Internet on their phone in the past week
- **The ubiquity of mobile phones is changing the way consumers access financial services**
  - —28 percent of all mobile phone owners have used mobile banking in the past 12 months, up from 21 percent in December 2011
  - —48 percent of smartphone owners have used mobile banking in the past 12 months, up from 42 percent in December 2011
  - —10 percent of those mobile phone users not currently using mobile banking think that they will probably use it within the next 12 months
  - —The most common use of mobile banking is to check account balances or recent transactions (87 percent of mobile banking users)
  - —Transferring money between accounts is the second-most common use of mobile banking (53 percent of mobile banking users)
  - —21 percent of mobile banking users have deposited a check using their mobile phone—double the incidence in December 2011
- **Mobile phones are also changing the way consumers make payments**
  - —15 percent of all mobile phone owners have made a mobile payment in the past 12 months, up from 12 percent in December 2011
  - —The share of smartphone users making a mobile payment in the past 12 months has effectively remained constant at 24 percent
  - —The most common use of mobile payments was to make an online bill payment (42 percent of mobile payment users, down from 47 percent in 2011)
  - —6 percent of all smartphone users have made a point-of-sale payment using their phone in the past 12 months, up from 1 percent in December 2011
  - —22 percent of all mobile phone users expressed an interest in using their phones to buy things at the point of sale
- **Perceptions of limited usefulness and concerns about security continue to be the main impediments to the adoption of mobile financial services**
  - —For mobile banking, the primary reason mobile phone users had not adopted the services was that they felt their banking needs were being met

without the use of mobile banking (54 percent, down from 58 percent in 2011)

—For mobile payments, concerns about the security of the technology were the primary reason given for not using services (38 percent, down from 42 percent in 2011)

—Concerns about the security of the technology were the second most common reason given for not using mobile banking (49 percent, up from 48 percent in 2011)

—More than a third of mobile phone users who do not use mobile payments don't see any benefit from using mobile payments and find it easier to pay with another method

- **Smartphones are changing the way people shop**

—42 percent of smartphone users have used their phone to comparison shop at a retail store, and 32 percent have used it to scan a product's barcode to find the best price for the item

—64 percent of consumers who use their phones to comparison shop in a retail store have changed where they purchased the product as a result of the information they found

—44 percent of smartphone users have used their phone to browse product reviews or get product information while shopping at a retail store, and 70 percent of them changed the item they purchased based on this information

—64 percent of mobile banking users have checked their account balance before making a large purchase in the past 12 months, and half of them have decided not to purchase an item as a result of their account balance or credit limit

—Approximately 27 percent of all mobile phone users are interested in receiving and managing discount offers and coupons on their phones, or receiving location-based offers

- **Mobile phones are prevalent among unbanked and underbanked consumers**

—The share of consumers who are unbanked was effectively unchanged, declining slightly to 10 percent in 2012 from 11 percent in 2011

—The share of underbanked consumers has remained constant at 10 percent

—59 percent of the unbanked have access to a mobile phone, half of which are smartphones

—90 percent of the underbanked have access to a mobile phone, 56 percent of which are smartphones

—49 percent of underbanked consumers report using mobile banking in the past 12 months

Introduction

Since the first Federal Reserve Board survey on consumers and mobile financial services conducted in December 2011, the use of mobile financial services among consumers has continued to increase and the range of services offered has continued to expand.[1] As part of the Board's ongoing efforts to monitor developments in consumers' usage of and attitudes toward mobile financial services, the Board conducted a second consumer survey in November 2012. This second survey included a random sample of respondents to the previous survey, as well as a new random sample of respondents. The subsample of respondents in both waves of the survey allow for the observation of changes in behavior over the past year among individual people.

Survey Background

In December 2011, the Consumer Research section in the Federal Reserve Board's Division of Consumer and Community Affairs conducted its first survey of consumers' use of mobile financial services (hereafter referred to as the 2011 survey). In late November 2012, the Consumer Research section deployed a slightly revised version of the original survey to a sample composed of both some of the same respondents to the December 2011 survey and new survey respondents (hereafter referred to as the 2012 survey). The second survey was conducted to monitor changes over the past year in the rapidly evolving use of mobile financial services and to provide additional insight into consumers' financial behaviors. Both the original survey instrument and the one administered in the second round of the survey were designed in consultation with a mobile financial services advisory group made up of key Federal Reserve System staff with relevant consumer research backgrounds.

[1] See Matthew B. Gross, Jeanne M. Hogarth, and Maximilian D. Schmeiser (2012), "Consumers and Mobile Financial Services," report (Washington: Board of Governors of the Federal Reserve System, March), www.federalreserve.gov/econresdata/mobile-devices/files/mobile-device-report-201203.pdf.

Table 1. Key survey response statistics: Main interview
Percent, except as noted

	Number sampled for main survey	Qualified completes	Cooperation rate
2011 re-interviews	1,852	1,328	71.7%
Fresh cases	2,178	1,272	58.4%
Total	**4,030**	**2,600**	**64.5%**

The 2012 survey was again administered by GfK (formerly Knowledge Networks), an online consumer research company, on behalf of the Board. The survey was conducted using a sample of adults ages 18 and over from KnowledgePanel®, a proprietary, probability-based web panel of more than 50,000 individuals from randomly sampled households; the sample was designed to be representative of the U.S. population. After pretesting, the data collection for the survey began on November 16, 2012, and concluded on November 27, 2012. As shown in table 1, e-mails were sent to 1,852 randomly selected respondents to the original survey and 2,178 randomly selected respondents from the remaining members of KnowledgePanel®. The 2,600 respondents completed the survey in approximately 16 minutes (median time). Of the 2,600 respondents, 1,328 had responded to the original survey, while 1,272 were new survey respondents. Further details on the survey methodology are included in Appendix 1.

The responses to all the survey questions are presented in Appendix 3 in the order that the questions were asked of respondents. Tables of summary statistics for the respondent demographics by mobile phone usage are also included as tables C.89 to C.92. Beginning at table C.93, cross-tabulations are presented of consumers' use of mobile phones, mobile banking, and mobile payments by age, race, gender, education, and income.

The following sections of this report summarize key findings from the Federal Reserve Board's survey of consumers conducted by GfK, with a focus on how

consumers are using mobile phones to conduct their banking, make payments, enhance information gathering while shopping, and manage their finances. The numbers cited in this report are derived from the Board survey unless otherwise noted. All data were weighted to yield estimates for the U.S. adult population. Only questions pertaining to these topics are discussed in the report; however, the complete survey questionnaire and the results of the entire survey are summarized in Appendix 2 and Appendix 3.

Overview of the Mobile Phone Market

As of November 2012, 87 percent of Americans ages 18 and above owned or had regular access to a mobile phone. Of the mobile phone owners, 52 percent had a smartphone.[2] While the percent of Americans with mobile phones has remained constant over the past year, smartphone ownership increased substantially from the 44 percent found in the 2011 survey.[3]

Rates of mobile phone usage remain high and consistent across demographic and socioeconomic groups. The prevalence of mobile phones demonstrates the extent to which they have become engrained in modern culture. Mobile phone usage is approximately 90 percent for persons ages 18 to 44, and declines only slightly to 86 percent for persons ages 45 to 59 and 82 percent for persons ages 60 and over. However, smartphone adoption is higher among younger generations: 75 percent of those ages 18 to 29 with a mobile phone have a smartphone, declining with each age group until reaching only 27 percent of those ages 60 and over with a mobile phone.

Mobile phone ownership is highest among non-Hispanic whites at 88 percent, relative to 83 percent for Hispanics and 81 percent for non-Hispanic blacks. However, adoption of smartphones is higher among minorities, as 60 percent of Hispanic mobile phone users and 55 percent of non-Hispanic black mobile phone users own a smartphone, relative to 50 percent of non-Hispanic whites.

Mobile phone and smartphone usage does vary with level of household income. In households earning less than $25,000 per year, 76 percent of adults have a mobile phone of some type, and 40 percent have a smartphone. Use of both mobile phones and smartphones increases with income category, reaching 95 percent and 70 percent, respectively, for adults in households earning more than $100,000 per year.

The relatively high prevalence of mobile phone and smartphone use among younger generations, minorities, and those with low levels of income—groups that are prone to be unbanked or underbanked—makes mobile phones a potential platform for expanding financial access and inclusion (see box 1 for survey results related to the unbanked and underbanked).

Trends in the Utilization of Mobile Banking and Payments

Services that allow consumers to obtain financial account information and conduct transactions with their financial institution ("mobile banking") and that allow consumers to make payments, transfer money, or pay for goods and services ("mobile payments") have become increasingly prevalent over the past year. In December 2011, for instance, 21 percent of mobile phone users and 42 percent of smartphone users reported that they had used mobile banking in the past 12 months. By November 2012, the prevalence of mobile banking had increased substantially to 28 percent of mobile phone users and 48 percent of smartphone users (figure 1).

However, use of mobile payments has increased far less rapidly. In December 2011, 11 percent of mobile phone users and 23 percent of smartphone users reported using mobile payments. By November 2012, usage of mobile payments had increased only slightly, to 15 percent of mobile phone users and 24 percent of smartphone users.

Although the past year has seen some notable developments in mobile payments services (e.g., the launch of a mobile payment app by a major retailer, growth in the number of mobile wallets, partnerships between mobile payment services and major payment networks), using a mobile phone to pay for a pur-

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[2] The figures derived from the Board's survey are nearly identical to the 85 percent mobile phone ownership rate and 53 percent smartphone ownership rate reported by the Pew Research Center in its September 2012 *Smartphone Ownership Update*, http://pewinternet.org/~/media//Files/Reports/2012/PIP_Smartphones_Sept12%209%2010%2012.pdf.

[3] While the majority of banks and mobile financial service providers offer apps for both Android and iOS devices, some apps are only available for one platform. Among the operating systems utilized by smartphone users in the survey, Android is used by 48 percent of respondents, Apple's iOS by 35 percent of respondents, and BlackBerry by 5 percent of respondents.

Box 1. The Unbanked, Underbanked, and Mobile Financial Services

Of those who participated in Board surveys, the share of consumers who are unbanked has declined slightly over the past year. In 2011, 10.8 percent of consumers reported that neither they nor their spouse or partner had a checking, savings, or money market account. In 2012, the share of unbanked consumers declined to 9.5 percent of the adult population. Adopting a more expansive definition of being banked that includes use of a reloadable prepaid card, the share of consumers who are unbanked declined from 9.0 percent in 2011 to 7.9 percent in 2012.

Of those currently unbanked, 42 percent report that they had a bank account at some point in the past. Using data on those Board survey respondents observed in both 2011 and 2012, 40 percent of those unbanked in December 2011 had obtained a checking, savings, or money market account by November 2012. Conversely, 4 percent of those who had a bank account in December 2011 no longer had an account by November 2012.

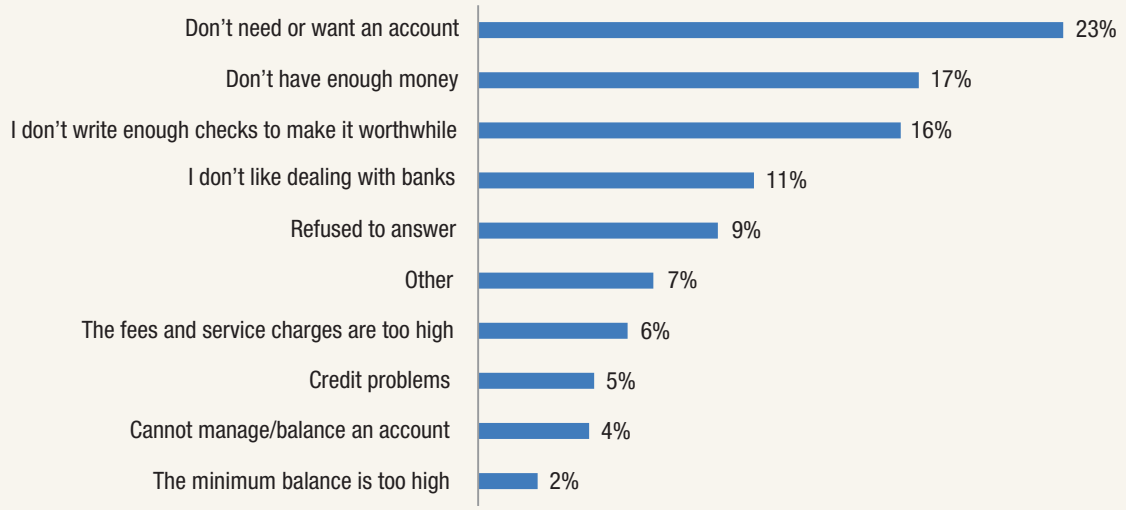
Among unbanked consumers, the most commonly cited reason for not having an account was simply not needing or wanting one (23 percent), followed by believing that they don't have enough money to justify an account (17 percent), and not writing enough checks to make having an account worthwhile (16 percent). A further 11 percent of unbanked consumers don't have an account because they don't like dealing with banks, and 6 percent believe that the fees and service charges on bank accounts are too high (figure A).

The share of consumers who report being underbanked—defined as having a bank account but using an alternative financial service such as a payroll card, payday lender, check casher, or auto title loan—has effectively remained constant over the past year. In 2011, 10.2 percent of consumers surveyed were underbanked, compared to 9.9 percent a year later.

Both the unbanked and underbanked make significant use of mobile phones and smartphones. Among individuals who are unbanked, 59 percent have access to a mobile phone and 50 percent of these are smartphones. More remarkably, 90 percent of the underbanked have a mobile phone, 56 percent of which are smartphones.

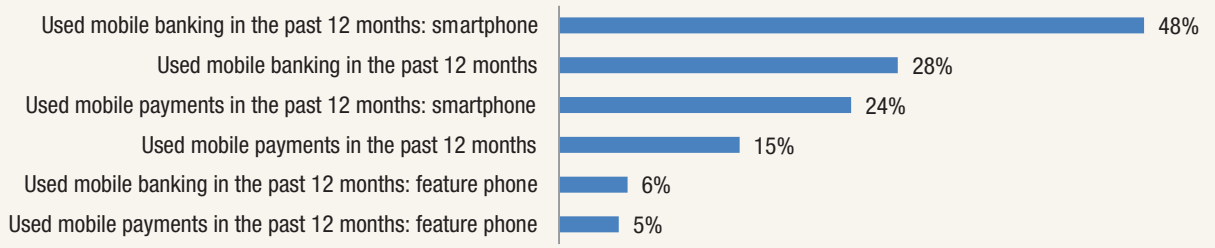
The underbanked population makes substantial use of mobile banking. Almost 49 percent of the underbanked with mobile phones report using mobile banking in the past 12 months, while more than 30 percent report using mobile payments.

Figure A. Most important reason for not having a checking, savings, or money market account



chase at the point of sale remains a relatively rare occurrence. Only 6 percent of smartphone users reported making a point-of-sale purchase with their phone in the past 12 months. However, as only 1 percent of smartphone owners reported making a point-of-sale purchase with their phone last year, the 6 per-

Figure 1. Usage of mobile banking and mobile payments by mobile phone type



cent incidence found in 2012 indicates that the use of mobile phones to make point-of-sale payments is increasing rapidly.

Despite the increasing availability of phones equipped with near field communication (NFC) chips for use with NFC-based payment services, retailers and consumers appear to be trending toward adoption of non-NFC-based payment services. Indeed, consumers making mobile payments were nearly twice as likely to have used a mobile app or barcode to make their payment as to have made a payment by waving or tapping their phone.

Concerns about the security of mobile banking and mobile payment technologies remain one of the primary impediments to further adoption. Moreover, consumers reported less confidence in the security of mobile banking and payments technology in the 2012 survey than they did in the 2011 survey.

However, despite the wealth of personal information stored on smartphones, and the frequency with which these phones are lost or stolen, only 54 percent of smartphone owners report that they use some form of password protection on their phone.

The other major impediment to adoption is the perception among consumers that there is no benefit to using mobile banking or mobile payments and that their banking and payment needs are already being met without these technologies.

Accessing Financial Services

Survey respondents were asked a set of screening questions that covered whether or not they had a bank account, access to the Internet, and ownership of mobile phones or smartphones. They were further asked about the various ways in which they access their financial accounts. Of the 90 percent of American consumers who have a checking, savings, or money market account, the majority use some form of technology to interact with their financial institution. (The Board survey also included questions about attitudes toward alternative financial services; see box 2 for more information.)

As shown in figure 2, the most common way of interacting with a financial institution remains in-person at a branch, with 85 percent of banked consumers reporting that they had visited a branch and spoken with a teller in the past 12 months. The second most common means of access in the past 12 months was via an ATM or online banking, both at 74 percent. Telephone banking was used by 34 percent of consumers with a bank account, and mobile banking was the least commonly used method at 29 percent of consumers with a bank account.

While use of telephone banking has remained constant since the previous Board survey, mobile banking usage has increased by 7 percentage points. If mobile banking usage continues to increase at this rate, it will overtake telephone banking as the fourth most common way of interacting with a financial institution within the next year.

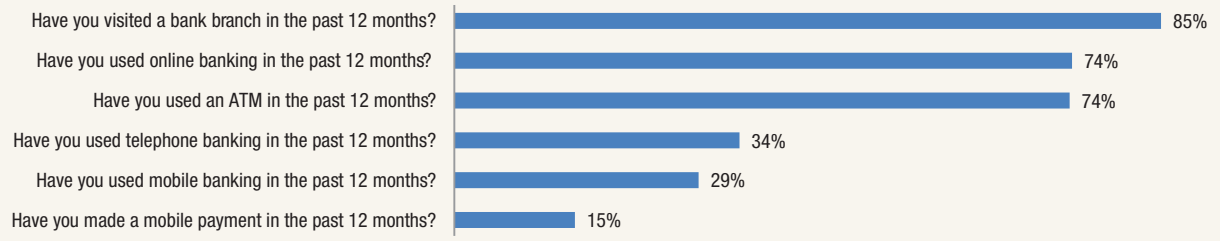
Mobile Banking

The Federal Reserve survey defines mobile banking as "using a mobile phone to access your bank account, credit card account, or other financial account. Mobile banking can be done either by accessing your bank's web page through the web browser on your mobile phone, via text messaging, or by using an application downloaded to your mobile phone."

The adoption of mobile banking has increased substantially in the past year. Nearly 28 percent of mobile phone users in the survey report that they used mobile banking in the past 12 months. This is an increase of a third from the 21 percent of mobile phone users who indicated that they used mobile banking in the 2011 survey. Use of mobile banking is substantially higher for smartphone users at 48 percent, up from 42 percent in 2011. The higher incidence of mobile banking adoption among smartphone users suggests that as smartphone adoption increases, so too will adoption of mobile banking.

Among those consumers with mobile phones who do not currently use mobile banking, 10 percent report

Figure 2. Usage of different means of accessing banking services



Note: The denominator is all respondents with a checking, savings, or money market account for each question. The percentages here may differ from subsequent incidence rates due to their sample being restricted to mobile phone owners.

Box 2. Alternatives to Traditional Banking and Financial Services

The Board survey included questions regarding consumers' usage and attitudes toward alternative financial services, such as payday loans and prepaid cards.

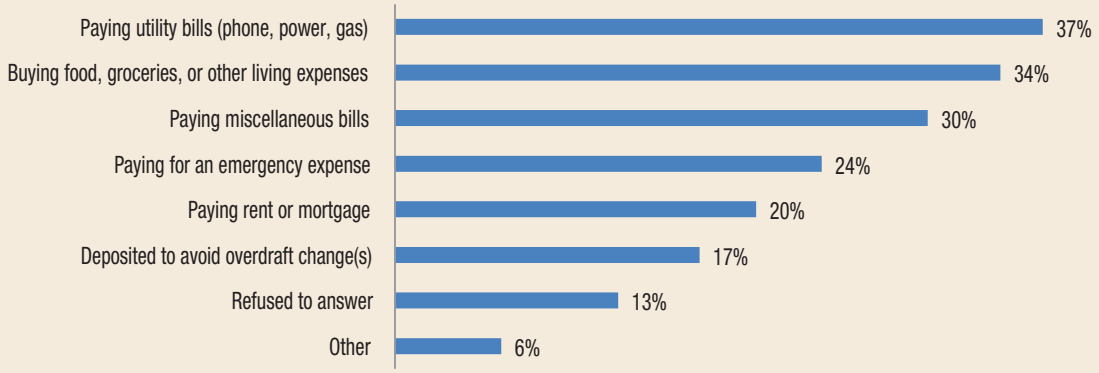
Products such as payday loans and reloadable prepaid cards are becoming increasingly more popular as people look outside mainstream financial institutions to meet their financial needs. However, these alternatives to traditional banking may have relatively high interest rates and service charges or fees, which can vary widely depending on the specific product used. This can make alternative financial services a costly way of managing household finances if not used carefully. Moreover, consumers may have fewer regulatory protections on these non-traditional financial services when problems arise.

Prepaid Cards

Prepaid cards have remained the most-used alternative financial service over the last several years. Nearly half (49 percent) of all consumers surveyed use some type of prepaid card: 40 percent use a gift card, 14 percent use a general purpose card, 6 percent use a government provided card, and 2 percent use a payroll card.

Some general purpose prepaid cards can be reloaded with money and used as an alternative to a checking account. Among respondents with general purpose prepaid cards, 58 percent report that it is reloadable, and of those with reloadable cards, 57 percent added money to their cards in the last 12 months.

Figure A. Uses of money from most recent payday loan



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that they will "definitely" or "probably" use mobile banking in the next 12 months. An additional 14 percent of those who report that they are unlikely to use mobile banking in the next 12 months report that they will "definitely" or "probably" adopt mobile banking at some point. Although the reported adoption intentions of the 2012 survey respondents may not perfectly reflect subsequent behavior, there is evidence that planned use of mobile banking does in fact relate to subsequent adoption.

Using the panel of respondents to both the 2011 and 2012 Board surveys, the reported mobile banking adoption intention over the next 12 months from the 2011 survey is compared to the reported use of mobile banking in the 2012 survey. Of those consumers who reported in December 2011 that they will "definitely" adopt mobile banking in the next 12 months, 45 percent had adopted mobile banking by November 2012. And among those who indicated that they will "probably" adopt mobile banking, 35 percent had become mobile banking users. Conversely, for those who indicated that they "probably will not" and "definitely will not" adopt mobile banking only 9 percent and 5 percent, respectively, had adopted mobile banking by November 2012. In total, 9 percent of those who reported that they were not mobile bankers in 2011 (7 percent of all mobile phone users) reported being mobile banking users by November 2012. However, 19 percent of those who

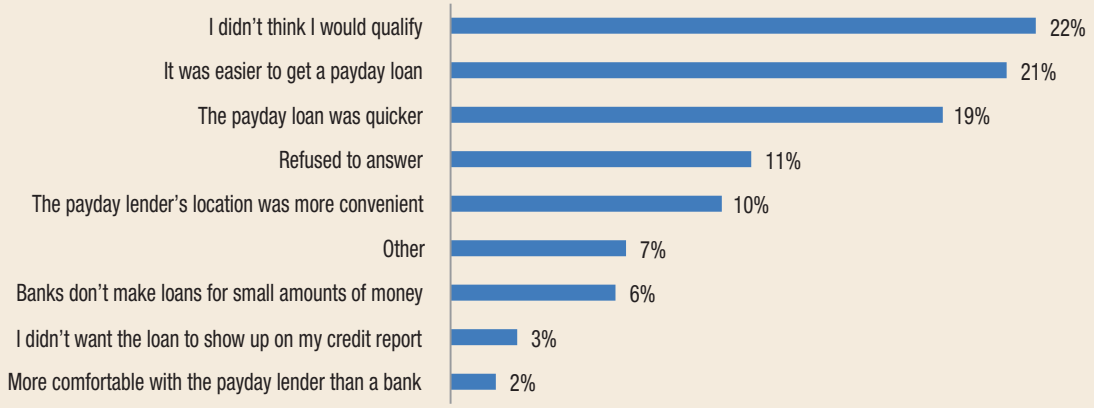
Box 2. Alternatives to Traditional Banking and Financial Services—*continued*

Payday Loans

One in ten respondents report ever using payday loans, but only 6 percent have done so in the past 12 months. As shown in figure A, respondents report that these payday loans were used primarily for daily essentials such as utility bills (37 percent); for food, groceries, and other living expenses (34 percent); for miscellaneous bills (30 percent); or for rent or mortgage payments (20 percent). Almost one in four respondents used the payday loan to cover an emergency expense, and 17 percent deposited the money into their bank account in order to avoid overdraft charges.

According to respondents, the main reasons for using payday loans or advances instead of other, more traditional financial services are perceptions that the borrower will be denied a bank loan or credit card (22 percent), that these payday loans are more easily attainable than credit cards and bank loans (21 percent), that money from payday loans will arrive faster than from other types of loans (19 percent), and that the location of the payday lender was more convenient (10 percent). Very few respondents are concerned with the loan appearing on their credit reports (3 percent) or feel greater comfort from payday lenders over banks (2 percent), as shown in figure B.

Figure B. Main reason for using a payday loan or advance service over a bank loan or credit card



were mobile banking users in 2011 (3 percent of all mobile phone users) reported that they had not used mobile banking in 2012. Among panel respondents, mobile banking usage increased from 21 percent in 2011 to 25 percent in 2012.

The 2011 survey included a group of respondents who indicated that they would "definitely" or "probably" adopt mobile banking in the coming year. For that group of respondents who believed they were likely to adopt mobile banking, the most significant difference between those who actually did adopt mobile banking by the 2012 survey and those who did not was that the adopters were more likely to own a smartphone. In both the panel and cross-sectional data, smartphone users are more likely to adopt mobile banking than non-smartphone users.

Use of mobile banking continues to be highly correlated with age (table 2), although usage among older age groups has increased over the past year. In the 2012 survey, individuals between ages 18 and 29 account for approximately 39 percent of mobile banking users, relative to 22 percent of mobile phone users. The next age group (30 to 44) account for 34 percent of mobile banking users, relative to 27 percent of mobile phone users. Those ages 45 to 59 account for 19 percent of mobile bankers, relative to 27 percent of mobile phone users. Finally, individuals age 60 and over account for only 8 percent of

Table 2. Use of mobile banking in the past 12 months by age
Percent, except as noted

Age categories	Yes	No	Total
18–29	38.6	15.1	21.5
30–44	33.7	24.3	26.9
45–59	19.4	30.1	27.2
60+	8.3	30.6	24.4
Number of respondents	**571**	**1,709**	**2,280**

all mobile banking users, but represent 24 percent of all mobile phone users. In 2011, those ages 18 to 29 accounted for 44 percent of mobile banking users, while those ages 45 to 59 accounted for 15 percent and those ages 60 and over accounted for only 6 percent.

The distribution of other demographic characteristics for mobile banking users has changed little over the past year. Minorities continue to be more likely to adopt mobile banking than non-Hispanic whites. In particular, Hispanic users show a disproportionately high rate of adoption of mobile banking (table 3), at 17 percent of all mobile banking users relative to 13 percent of mobile phone users.

Use of mobile banking remains generally unrelated to household income (table 4), except at the tails of the income distribution. At 17 percent of mobile banking users, those individuals earning less than $25,000 per year are significantly less likely to use mobile banking than their share of the mobile phone user population (23 percent) would suggest. At 28 percent of mobile banking users, those individuals earning more than $100,000 per year are significantly more likely to use mobile banking than their share of the mobile phone user population would suggest (24 percent).

Table 3. Use of mobile banking in the past 12 months by race
Percent, except as noted

Race/ethnicity	Yes	No	Total
White, non-Hispanic	63	70.4	68.3
Black, non-Hispanic	12.1	10.1	10.7
Other, non-Hispanic	6.3	5.6	5.8
Hispanic	16.8	12.6	13.8
2+ races, non-Hispanic	1.7	1.3	1.4
Number of respondents	**571**	**1,709**	**2,280**

Table 4. Use of mobile banking in the past 12 months by income group
Percent, except as noted

Income group	Yes	No	Total
Less than $25,000	16.7	25.5	23
$25,000–$39,999	18.9	20.1	19.7
$40,000–$74,999	20.3	18.8	19.2
$75,000–$99,999	15.7	13.4	14
Greater than $100,000	28.4	22.3	24
Number of respondents	**571**	**1,709**	**2,280**

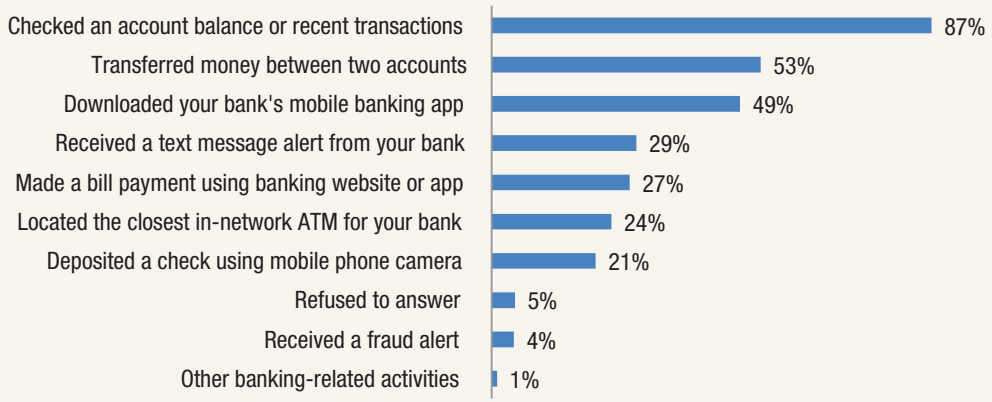
Mobile banking is still highly correlated with education (table 5). Similar to the 2011 findings, 72 percent of all mobile banking users have at least some college education, far more than their 60 percent share of all mobile phone users.

The most common mobile banking activities continue to be checking financial account balances or transaction inquiries, with 87 percent of mobile banking users having performed this function in the past 12 months, down slightly from 90 percent in 2011 (figure 3). The use of mobile banking to transfer money between accounts has increased by 11 percentage points over the past year, with 53 percent of users now reporting that they had done so in the past 12 months. The share of mobile banking users who receive text message alerts from a bank has declined marginally, from 33 percent in 2011 to 29 percent in 2012. Making online bill payments from a bank account using a mobile phone has effectively remained constant at 27 percent, while locating an in-network ATM increased by 3 percentage points to 24 percent. The mobile banking function that has seen the greatest increase by far is depositing a check by phone, known as "remote deposit capture," which nearly doubled in usage from 11 percent in 2011 to 21 percent in 2012. Nearly half of mobile banking users appear to be using mobile apps to conduct their banking transactions, as 49 percent have installed such applications on their phones.

Table 5. Use of mobile banking in the past 12 months by education
Percent, except as noted

Education	Yes	No	Total
Less than high school	5.6	11.6	9.9
High school	22.3	31.3	28.8
Some college	35	28	29.9
Bachelor's degree or higher	37.1	29.2	31.4
Number of respondents	**571**	**1,709**	**2,280**

Figure 3. Using your mobile phone, have you done any of the following in the past 12 months?



Note: This was question 28 in the survey (see Appendix 2); number of respondents was 571.

Among mobile banking users, the frequency with which they use mobile banking has increased somewhat over the past year. Although the median reported usage increased only slightly to 6 times per month from 5 times per month in 2011, the share of mobile bankers reporting that they used it more than 10 times per month increased to 35 percent from 22 percent.

Consumers who use mobile banking continue to be satisfied with their experience, although overall satisfaction has declined somewhat since 2011. In December 2011, 62 percent of mobile banking users reported being "very satisfied" with their experiences, and 32 percent reported being "somewhat satisfied" with their experiences. In November 2012, 52 percent of mobile banking users reported being "very satisfied" with their experiences, and 44 percent reported being "somewhat satisfied" with their experiences.

A significant fraction of mobile banking users have only recently adopted the technology. Although the majority of mobile banking users report that they started using it more than one year ago, 18 percent report that they adopted mobile banking in the last six months, and 17 percent report that they adopted mobile banking between 6 and 12 months ago. The finding that just over a third of mobile banking users have started using the technology in the past 12 months is consistent with the 33 percent increase in mobile banking usage observed between Board surveys.

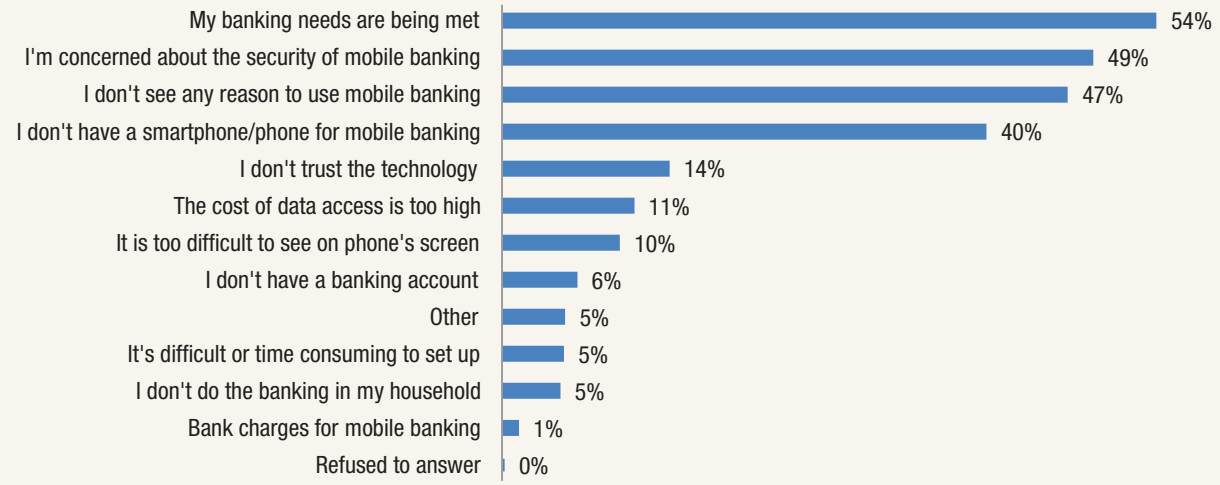
Smartphones consistently appear to be the driving force behind mobile banking adoption, as 37 percent of consumers indicate that getting a smartphone was the main reason they started using mobile banking. This was followed by 30 percent who liked the convenience of mobile banking, and 19 percent who indicated that the timing of their adoption was driven by their bank starting to offer the service.

Among those consumers with mobile phones who do not currently use mobile banking, the main reasons for not using the service are that they believe their banking needs are met without mobile banking (54 percent), that they are concerned about security (49 percent), and that they don't see any reason to use mobile banking (47 percent) (figure 4). Not having a smartphone is cited by 40 percent of consumers as the reason they do not use mobile banking. Less commonly cited reasons include a lack of trust in the technology to process transactions properly (14 percent), the cost of data access on mobile phones (11 percent), and the small size of the mobile phone screen (10 percent).

Consumers who expressed concerns about the security of mobile banking were asked to specify what aspect(s) were of greatest concern. They reported concerns with hackers gaining access to their phone remotely (30 percent), losing their phone or having it stolen (11 percent), experiencing data interception by a third party (9 percent), companies misusing personal information (3 percent), and malware or viruses being installed on their phone (2 percent). However, the most common response was that they were concerned with all of those security risks (44 percent).

When consumers who don't use mobile banking were asked what mobile banking activities they would be interested in performing if their concerns were

Figure 4. What are the main reasons you have decided not to use mobile banking?



Note: This was question 40 in the survey (see Appendix 2); number of respondents was 1,709.

addressed, their responses largely mirrored those of current users. Checking financial account balances or recent transactions was the most commonly cited (33 percent), followed by transferring money between accounts (21 percent), depositing checks electronically (17 percent), receiving text message alerts from their bank (17 percent), and making bill payments (17 percent). However, 56 percent of those who do not use mobile banking indicated that they had absolutely no interest in performing any mobile banking activities.

Mobile Payments

The Federal Reserve survey defined mobile payments as "purchases, bill payments, charitable donations, payments to another person, or any other payments made using a mobile phone. Mobile payments can be used by accessing a web page through the web browser on your mobile device, by sending a text message (SMS), or by using a downloadable application on your mobile device. The amount of the payment may be applied to your phone bill (for example, a text message donation), charged to your credit card, or withdrawn directly from your bank account."

Mobile payment continues to have relatively limited adoption. Only 15 percent of mobile phone users report that they made a mobile payment in the past 12 months, up slightly from 12 percent in 2011.

The most common mobile payment activity is payment of bills (42 percent), followed by making online purchases (35 percent), both down slightly in the past year. Mobile payment that involves person-to-person or person-to-business transfer of money has become more common over the past year. Nearly 30 percent of mobile payment users transferred money directly to another person in the past 12 months, up from 21 percent reported for 2011. Fifteen percent received money from another person using a mobile phone, up from 8 percent reported for 2011. Making point-of-sale purchases with mobile phones appears to have become more common, with 9 percent of mobile payment users reporting that they scanned a barcode or Quick Response (QR) code to make a payment and 9 percent reporting that they used a mobile app to pay for a purchase.[4]

The share of mobile payments users waving or tapping a mobile phone at a cash register to pay for a purchase has more than doubled from the previous survey, going to 6 percent in 2012 from just over 2 percent in 2011. However, the small number of respondents who make this type of payment means

[4] A QR code is a type of barcode that has become popular in advertising because it can be scanned by mobile phones to direct users to a website where they can obtain additional information on a product, service, or company. Some mobile payment apps display a QR code on the user's smartphone screen that can then be scanned by retailers at the point of sale to pay for a purchase. A mobile wallet allows users to store credit or debit card information and loyalty cards as well as to pay at select merchants using the app.

Table 6. Use of mobile payments in the past 12 months by age
Percent, except as noted

Age categories	Yes	No	Total
18–29	38.1	18.7	21.6
30–44	32.3	26	27
45–59	15.9	29	27.1
60+	13.7	26.2	24.3
Number of respondents	**308**	**1,973**	**2,281**

that the change in use from 2011 to 2012 is not statistically significant. Using a text message to make a mobile payment, such as a charitable donation, was used by 8 percent of those making mobile payments.

Mobile payments are disproportionately used by younger consumers, and unlike mobile banking, there has been little shift in the distribution of users across ages in the past year (table 6). Individuals ages 18 to 29 account for 38 percent of mobile payment users relative to 22 percent of all mobile phone users, while individuals ages 30 to 44 account for a further 32 percent of mobile payment users relative to 27 percent of all mobile phone users. The rate of usage then falls by half—to 16 percent—for those ages 45 to 59, and even further—to 14 percent—for those ages 60 and over.

Minorities continue to be disproportionately likely to adopt mobile payments; however, the differential adoption by race has diminished in the past year. Non-Hispanic whites account for 62 percent of mobile payment users but make up 69 percent of mobile phone users (table 7). Hispanics account for approximately 16 percent of all mobile payment users relative to 14 percent of all mobile phone users, and 13 percent of non-Hispanic blacks use mobile payments compared to their 11 percent share of the mobile phone user population.

Table 7. Use of mobile payments in the past 12 months by race
Percent, except as noted

Race/ethnicity	Yes	No	Total
White, non-Hispanic	62.3	69.5	68.5
Black, non-Hispanic	13.1	10.2	10.6
Other, non-Hispanic	7	5.6	5.8
Hispanic	16.3	13.3	13.7
2+ races, non-Hispanic	1.2	1.4	1.4
Number of respondents	**308**	**1,973**	**2,281**

Table 8. Use of mobile payments in the past 12 months by income group
Percent, except as noted

Income group	Yes	No	Total
Less than $25,000	16.7	25.5	23
$25,000–$39,999	18.9	20.1	19.7
$40,000–$74,999	20.3	18.8	19.2
$75,000–$99,999	15.7	13.4	14
Greater than $100,000	28.4	22.3	24
Number of respondents	**571**	**1,709**	**2,208**

As with mobile banking, the only correlation between income and mobile payment use occurs at the tails of the distribution, with those earning less than $25,000 per year being less likely to use mobile payments than their share of the mobile phone user population would suggest (17 percent of mobile payment users versus 23 percent of mobile phone users), while those earning more than $100,000 per year are more likely to use mobile payments (28 percent of mobile payment users versus 24 percent of mobile phone users) (table 8).

Mobile payment use by education level is roughly proportionate to its representation in the mobile phone user population (table 9).

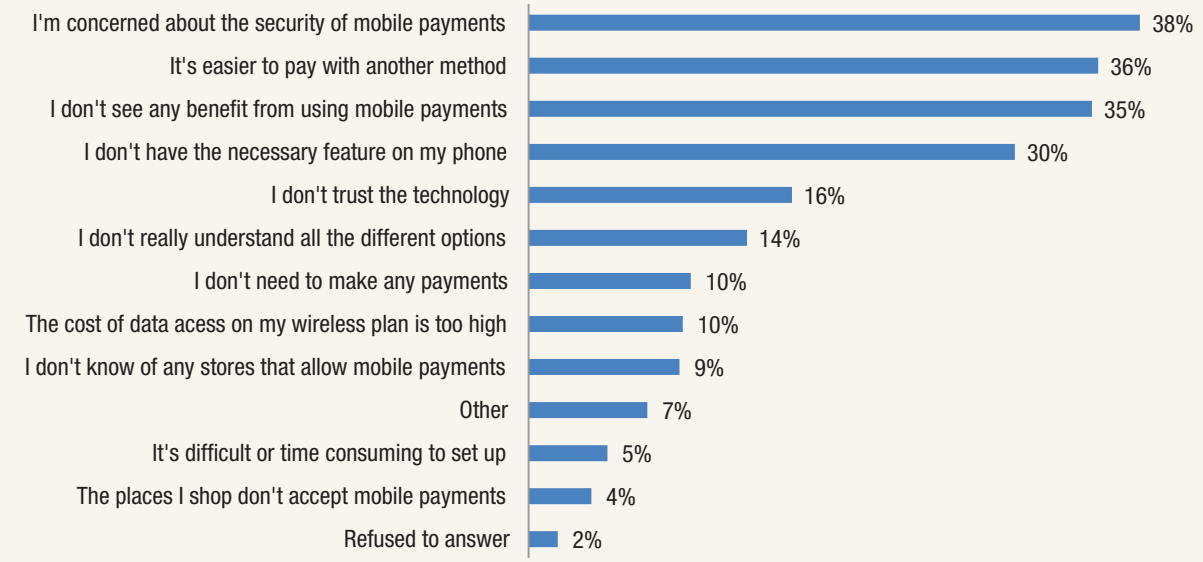
Consumers use a variety of methods to make mobile payments. The most common payment method is a debit card (45 percent), followed by a direct withdrawal from a bank account (40 percent), credit card (33 percent), and prepaid card (7 percent). Only 5 percent report that they had the charge directly applied to their phone bill.

The person-to-business mobile payment platforms appear to be rather infrequently used—only 2 percent of mobile payment users report that they used Google Wallet and 2 percent used Pay with Square. The type of payment system used to make the mobile payment has implications for the consumer protec-

Table 9. Use of mobile payments in the past 12 months by education
Percent, except as noted

Education	Yes	No	Total
Less than high school	10.7	9.8	9.9
High school	24.1	29.6	28.8
Some college	35.6	28.7	29.8
Bachelor's degree or higher	29.6	31.8	31.5
Number of respondents	**308**	**1,973**	**2,281**

Figure 5. What are the main reasons you have decided not to use mobile payments?



Note: This was question 43 in the survey (see Appendix 2); number of respondents was 1,973.

tions the payer is afforded on the transaction, as different payment systems are covered by different consumer regulations and regulatory agencies.[5]

Mobile payments users make relatively infrequent use of the service. The median number of mobile payments in a typical month is two, up from one in 2011. The number of users making more than five payments per month also increased, going to 11 percent from fewer than 7 percent of consumers.

Users of mobile payments appear to be quite satisfied with their experiences, although overall satisfaction has declined slightly in the past year. In 2011, 55 percent reported being "very satisfied" with their experiences, and 33 percent reported being "somewhat satisfied" with their experiences. In 2012, 44 percent reported being "very satisfied" with their experiences, and 49 percent reported being "satisfied" with their experiences.

Of current mobile payment users, 13 percent started using mobile payments in the last 6 months, while 16 percent began using mobile payments 6 to 12 months ago. A further 29 percent report that they started using mobile payments 1 to 2 years ago, and 18 percent report that they began using mobile payments more than two years ago. A significant number of users are unable to recall when they began using mobile payments (19 percent).

The convenience of mobile payments is the main reason most people started using mobile payments (34 percent). As with mobile banking, getting a smartphone is a major driver of starting to use mobile payments (29 percent). The ability to make mobile payments simply becoming available was cited by 14 percent of users for the timing of their adoption, while 10 percent indicated that it was the result of their becoming comfortable with the security of mobile payments.

Among those who do not use mobile payments, the main reasons they have not adopted the technology are concerns about the security (38 percent). However, a substantial number of people see little value or benefit from using mobile payments: 36 percent report that it is easier to pay with other methods, and 35 percent report that they do not see any benefit from using mobile payments (figure 5).

Other reasons respondents cite for not using mobile payments include the lack of necessary features on their phone (30 percent) and a lack of trust in the technology to properly process payments (17 percent). A lack of understanding of the different

[5] For further details on how existing consumer regulations relate to the various methods for making mobile payments see Stephanie Martin (2012), *Statement before the Committee on Financial Services Subcommittee on Financial Institutions and Consumer Credit U.S. House of Representatives* (Washington: Federal Reserve Board, June), www.federalreserve.gov/newsevents/testimony/martin20120629a.pdf.

mobile payment options was cited by 14 percent of consumers, and 9 percent indicated that it was because they didn't know of any stores that allowed payment with a mobile phone.

For those concerned about the security of mobile payments, the aspects of concern largely mirror those reported by those concerned about the security of mobile banking. They reported concerns with hackers gaining access to their phone remotely (29 percent), someone intercepting their payment information (12 percent), losing their phone or having it stolen (10 percent), companies misusing personal information (2 percent), and malware or viruses being installed on their phone (2 percent). As with mobile banking, the most common response was that they were concerned with all of those security risks (46 percent).

When consumers who do not use mobile payments were asked to indicate all the mobile payment activities they would have an interest in using if their concerns about the technology were addressed, 60 percent indicated that they had absolutely no interest in using mobile payments. Of the potential activities of interest, paying bills online using their phone was the most commonly cited (19 percent), followed by receiving/using coupons on their phone (16 percent) and receiving specials and discount offers based on their location (15 percent). There was limited interest in waving or tapping a mobile phone at a cash register to make point-of-sale purchases (13 percent), using their phone as a virtual wallet (12 percent), or using a mobile app to pay for purchases (10 percent). Consumers also expressed some interest in using mobile payments to transfer money to another person in the United States (12 percent) and to friends or relatives in other countries (4 percent).

All mobile phone users were asked about the likelihood that they would use their mobile phone as a means of payment at the point of sale if the service were available to them. One percent of all mobile phone users already use this technology; an additional 8 percent would be "very likely" to use this type of mobile payment; and 19 percent are "likely" to use it. However, the vast majority of consumers indicated that they would be "unlikely" (27 percent) or "very unlikely" (44 percent) to use their mobile phone to make purchases.

Consumers appear more inclined to believe that mobile contactless payments will become a major form of payment than that they themselves would adopt this technology. When consumers were asked whether they thought that mobile contactless payments will become a major form of payment in the next five years, half of consumers reported that it is "very likely" (15 percent) or "likely" (35 percent).

Table 10. Please rate the security of using SMS (text messaging) for mobile banking.
Percent, except as noted

	2011	2012
Very safe	8.3	10.2
Somewhat safe	30.1	23.4
Somewhat unsafe	16.4	14
Very unsafe	10.8	10.9
Don't know	33.1	40.4
Refused to answer	1.2	1.1
Number of respondents	**2,002**	**2,291**

Mobile Security

One of the main reservations consumers have with adopting mobile banking and mobile payment technologies is concern about the security of the technology. Consumers' perceptions of the security of various mobile banking methods for protecting personal financial information have changed over the past year. But even as adoption of mobile banking has increased, consumers are now more likely to believe the technology to be "very unsafe" or report that they "don't know" whether it is safe.

In 2011, when consumers were asked to rate the security of SMS (text messaging) for mobile banking, approximately 38 percent rated the service "very safe" or "somewhat safe" (table 10). In 2012, the share reporting that SMS was "very safe" or "somewhat safe" declined to 34 percent. The share of consumers indicating that they "don't know" how safe it is to bank with SMS rose from 33 percent in 2011 to 40 percent in 2012.

Similar changes were observed in the perceptions of the security of using a mobile browser or a bank's mobile app for mobile banking. From the 2011 survey to the 2012 survey, the share of consumers rating mobile browsers as "very safe" or "somewhat safe" declined from 42 percent to 38 percent (table 11). The share reporting that they "don't know" how safe it is to use a mobile browser for banking increased to 36 percent from 30 percent.

Table 11. Please rate security of using a mobile browser for mobile banking.
Percent, except as noted

	2011	2012
Very safe	5.6	9.8
Somewhat safe	36	27.8
Somewhat unsafe	18.8	15.1
Very unsafe	7.6	9.6
Don't know	30.2	36.4
Refused to answer	2	1.4
Number of respondents	**2,002**	**2,291**

The share of consumers rating a bank's mobile app downloaded from an app store as "very safe" or "somewhat safe" for protecting their personal financial information also declined, going from 40 percent in the 2011 survey to 35 percent in the 2012 survey (table 12). Here, the share of consumers reporting that they "don't know" how safe the bank's mobile app is increased from 36 percent in 2011 to 41 percent in 2012.

Despite the decline in the perceived security of individual methods for using mobile banking, the overall perception of the security of mobile banking for protecting personal financial information has remained relatively constant. In 2011, 33 percent of consumers believed that mobile banking was "very safe" or "somewhat safe" at protecting their information (table 13). In 2012, the share rating mobile banking as "very safe" or "somewhat safe" was nearly identical at 34 percent. However, this aggregate figure masks the substantial increase in the share reporting that overall mobile banking is "very safe," which increased from 5 percent in 2011 to 9 percent in 2012.

Table 12. Please rate the security of using your bank's app for mobile banking.
Percent, except as noted

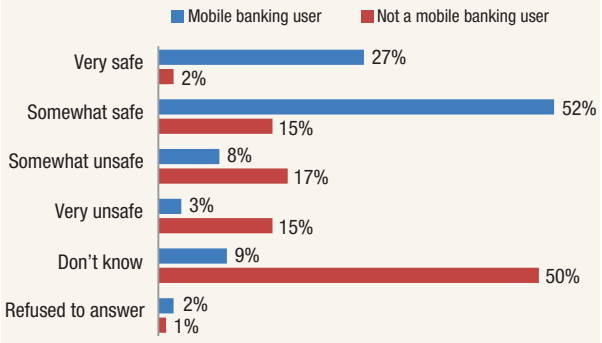
	2011	2012
Very safe	7.4	9.4
Somewhat safe	32.9	25.3
Somewhat unsafe	15.1	13.2
Very unsafe	6.8	9.4
Don't know	36.1	41
Refused to answer	1.8	1.8
Number of respondents	**2,002**	**2,291**

Table 13. How would you currently rate the overall security of mobile banking for protecting your personal information?
Percent, except as noted

	2011	2012
Very safe	5.1	9.2
Somewhat safe	27.8	24.9
Somewhat unsafe	20.7	14.5
Very unsafe	11.2	11.5
Don't know	33.9	38.5
Refused to answer	1.4	1.4
Number of respondents	**2,002**	**2,291**

There continues to be a dichotomy between users and non-users of mobile banking in their perception of the overall security of mobile banking for protecting personal information. Among mobile phone owners who do not use mobile banking, only 2 percent rate the overall security of mobile banking as "very safe," while 15 percent rate it "somewhat safe." Fifty percent of non-users indicate that they "don't know" about the security of mobile banking. Mobile banking users, however, rate mobile banking as "very safe" (27 percent) or "somewhat safe" (52 percent) in maintaining their personal information. Only 9 percent of mobile banking users indicate that they "don't know" how safe mobile banking is at protecting their personal information (figure 6).

Figure 6. How would you currently rate the overall security of mobile banking for protecting your personal information? (By use of mobile banking)



Note: This was question 49 in the survey (see Appendix 2); number of respondents was 571 mobile banking users and 1,709 non-users of mobile banking.

How Mobile Phones Affect Shopping Behavior

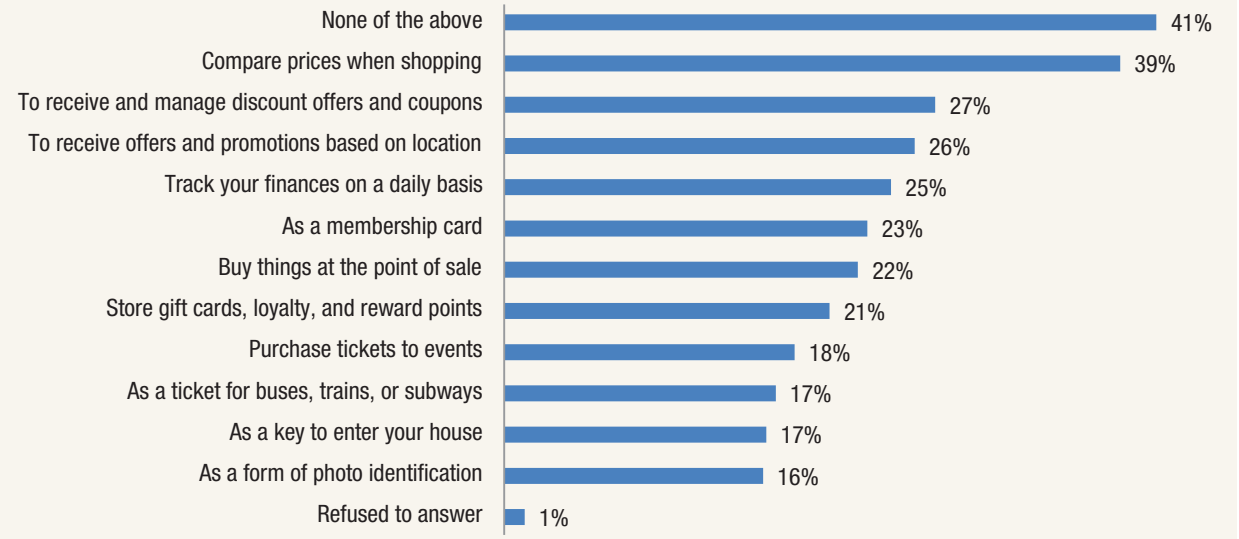
Interest in Mobile Services

Mobile phone users expressed significant interest in expanding the range of functions they could perform with their phones. Consumers were asked to select the types of activity they would be interested in performing with their mobile phones, assuming the function were made available to them (figure 7). Consumers appear to be quite open to greater use of their phones as a tool to get the best prices in their shopping activities: 39 percent express an interest in using their phones to compare prices while shopping; 27 percent indicate that they would like to receive and manage discount offers and coupons; and 26 percent would like to receive location-based offers. Similarly, they would like to use their phones to buy things at the point of sale (22 percent) and to store gift cards or track loyalty/reward points (21 percent). Consumers also report that they would use their mobile phones to manage their personal finances on a daily basis (25 percent).

Consumers were asked directly about their level of agreement with the statement "I am willing to allow my mobile phone to provide my location to companies so that they can offer me discounts, promotions, or services based on where I am." There appears to be significant discomfort with providing one's location to companies, as only 4 percent indicated that they "strongly agree," while 26 percent indicated that they "agree." In contrast, 28 percent indicated that they "disagree" and 40 percent "strongly disagree."

Consumers are even less willing to allow their phones to be used to provide companies with their personal information in order to receive targeted discounts, promotions, and offers. When asked about their level of agreement with the statement "I am willing to

Figure 7. Would you like to use your mobile phone for any of the following purposes, assuming they were made available to you?



Note: This was question 50 in the survey (see Appendix 2); number of respondents was 2,291.

allow my mobile phone to provide personal information such as my sex, age, friends, and shopping history to companies so that they can offer me discounts, promotions, or services based on this information," 50 percent strongly disagreed and an additional 32 percent disagreed.

In-Store Product Research and Price Comparison

Consumers are increasingly using their mobile phones to comparison shop and obtain product information while in retail stores. The increasing prevalence of smartphones with barcode scanning software and Internet access has altered consumer behavior in the retail environment. With this technology, consumers can quickly and easily compare prices across retailers while in a store or online, or locate an item that is out of stock. The prevalence of consumers going to retail stores to examine products and then purchasing them online at lower prices is sufficient for retailers to have coined the term "showrooming" to describe this type of shopping.

Among smartphone owners, 42 percent say that they have used their mobile phone to comparison shop on the Internet while at a retail store, and 32 percent have used a barcode scanning application for price comparisons. Consumers are also using their smartphones to obtain product information: 34 percent have scanned a QR code in a newspaper, magazine, or billboard advertisement to obtain information about a product, and 44 percent have used their phone to get product reviews or product information while shopping at a retail store.

Many consumers who use their smartphone to comparison-shop report that they altered their decisions as a result: 64 percent who have comparison-shopped in a store report that they changed where they made a purchase after comparing prices, and 70 percent report that they changed what they purchased as a result of reading product reviews on their smartphone while at a retail store.

Use of Mobile Phones in Financial Decisionmaking

As the use of mobile banking increases, mobile phones are increasingly becoming tools for managing personal finances and controlling spending. For example, 64 percent of mobile banking users report using their mobile phone to check financial account balances or available credit before making a large purchase in the past 12 months. Of those who checked their balance or available credit, 53 percent report that they decided not to buy an item because of the amount of money in their bank account or the amount of available credit.

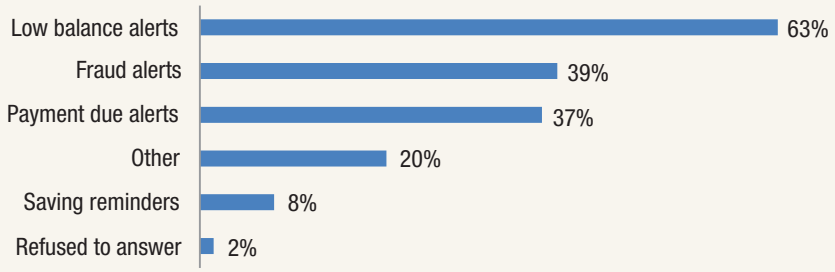
Some mobile phone users actively manage their finances on their mobile phones: 10 percent report using their mobile phone to track purchases and expenses. Among those tracking their finances on their mobile phones, 36 percent use a mobile application for expense tracking, 12 percent use a spreadsheet, 35 percent use the web browser to access a website, 10 percent send text messages, and 19 percent take notes in a notepad or word processor.

Because many consumers have near constant access to their mobile phones, these devices have the potential to provide just-in-time information that can influence consumer financial behavior and help them to make different, and perhaps smarter, financial decisions. The actions consumers take in response to the receipt of text message notices from their financial institutions demonstrate some of the potential effects of this technology for encouraging consumers to engage in different financial behaviors that may prove to have beneficial outcomes.

Almost 30 percent of mobile banking users indicate that they receive text message alerts from their bank. Among those receiving alerts, 63 percent receive "low-balance alerts," 39 percent receive "fraud alerts," 37 percent receive "payment-due alerts," and 8 percent indicate that they receive "savings reminders" (figure 8). Consumers who receive a low-balance alert from their bank nearly all report taking some action in response: transferring money into the account with the low-balance (54 percent), reducing their spending (36 percent), or depositing additional money into the account (24 percent) (figure 9). Only 14 percent reported taking no action in response to receiving a low-balance alert.

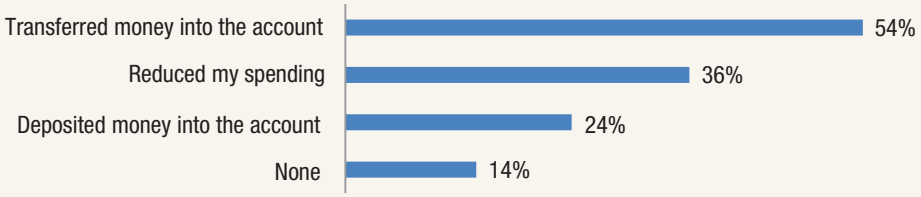
Consumers also appear to respond to receiving payment due alerts by text message. Among those receiving payment due alerts, 50 percent reported that they improved their ability to pay their bills on time "by a lot," while an additional 27 percent reported that they improved their ability to pay their bills on time "by a little."

Figure 8. What kind of text alerts do you receive?



Note: This was question 72 in the survey (see Appendix 2); number of respondents was 168.

Figure 9. Thinking of the most recent low-balance alert you received by text message, which of the following actions did you take after receiving the alert?



Note: This was question 73 in the survey (see Appendix 2); number of respondents was 109.

Conclusion

As smartphones become more commonly used, and their capabilities expand, they may increasingly be the means consumers use to access financial services and manage their finances. Their constant presence also makes them a potentially useful tool for the delivery of just-in-time financial information or as an aid in decisionmaking. Given the prevalence of mobile phones—particularly smartphones—among minorities, low-income individuals, and younger generations, mobile technology has the potential to empower consumers and expand access to financial services for underserved populations.

The use of mobile banking has increased by more than a third in the past year, and it appears likely to continue to increase as more and more consumers use smartphones. While still small, the use of mobile phones to make payments at the point of sale has increased even more rapidly. Over a quarter of mobile phone users express some interest in using their phones to make payments at the point of sale, giving mobile payments substantial growth potential as the ability to make these payments becomes more widespread.

The two factors limiting consumer adoption of mobile banking and payments are concerns about the security of the technology and a sense that they don't offer any real benefits to the user over existing methods for banking or making payments. With regards to security, consumers have actually become more likely in the past year to report that they simply don't know how safe it is to use mobile banking, suggesting that consumers need to be provided with reliable and accurate information on the level of security associated with the various means of accessing mobile banking. In terms of the value proposition to consumers, the significant number of mobile users who reported an interest in using their phones to receive discounts, coupons, and promotions or to track rewards and loyalty points suggests that tying these services to a mobile payment service would increase the attractiveness of mobile phones as a means of payment.

Appendix 1: Technical Appendix on Survey Methodology

In order to create a nationally representative probability-based sample, GfK's KnowledgePanel® has selected respondents based on both random digit dialing and address-based sampling (ABS). Since 2009, new respondents have been recruited using ABS. To recruit respondents, GfK (formerly Knowledge Networks) sends out mailings to a random selection of residential postal addresses. Out of 100 mailings, approximately 14 households contact GfK and express an interest in joining the panel. Of those who contact GfK, three-quarters complete the process and become members of the panel.[6] If the person contacted is interested in participating but does not have a computer or Internet access, GfK provides him or her with a laptop and Internet. Panel respondents are continuously lost to attrition and added to replenish the panel, so the recruitment rate and enrollment rate may vary over time.

For this survey, the number of KnowledgePanel® members who were invited to complete the survey, and the invitation response rates, are presented in table 1 (see main text). A total of 4,030 e-mail solicitations to participate in the survey were sent out to a random selection of KnowledgePanel respondents, and data collection was terminated when the quota of 2,600 individuals completed the survey fully (a "cooperation rate" yield of 65 percent). To enhance the cooperation rate, GfK sent e-mail reminders to non-responders on days three and six of the field period.

As with any survey method, probability-based Internet panel surveys are subject to potential survey error, such as non-coverage and non-response due to the panel recruitment methods and to panel attrition. In order to address these potential sources of error, a post-stratification adjustment is applied based on demographic distributions from the most recent (November 2011 for re-interview cases and October 2012 for the fresh sample) data from the Current Population Survey (CPS). The variables used include gender, age, race/ethnicity, education, census region, residence in a metropolitan area, and access to the Internet. The Panel Demographic Post-Stratification weight is applied prior to a probability proportional to size (PPS) selection of a study sample from KnowledgePanel. This weight is designed for sample selection purposes.

Once the sample has been selected and fielded, and all the study data are collected and made final, a post-stratification process is used to adjust for any survey non-response as well as any non-coverage or under- and over-sampling resulting from the study-specific sample design. Demographic and geographic distributions for the non-institutionalized, civilian population ages 18 and over from the most recent CPS are used as benchmarks in this adjustment.

Comparable distributions are calculated by using all completed cases from the field data. Using the base weight as the starting weight, this procedure adjusts the sample data back to the selected benchmark proportions. Through an iterative convergence process, the weighted sample data are optimally fitted to the marginal distributions.

After this final post-stratification adjustment, the distribution of the calculated weights are examined to identify and, if necessary, trim outliers at the extreme upper and lower tails of the weight distribution. The post-stratified and trimmed weights are then scaled to the sum of the total sample size of all eligible respondents.

There are several reasons that a probability-based Internet panel was selected as the method for this survey rather than an alternative survey method. The first reason is that these types of Internet surveys

[6] For further details on the KnowledgePanel sampling methodology and comparisons between KnowledgePanel and telephone surveys, see www.knowledgenetworks.com/accuracy/spring2010/disogra-spring10.html.

have been found to be representative of the population.[7] The second reason is that the ABS Internet panel allows the same respondents to be re-interviewed in subsequent surveys with relative ease, as they remain in the panel for several years. The third reason is that Internet panel surveys have numerous existing data points on respondents from previously administered surveys, including detailed demographic and economic information. This allows for the inclusion of additional information on respondents without increasing respondent burden. Lastly, collecting data through an ABS Internet panel survey is cost effective, and can be done relatively quickly.

[7] David S. Yeager, Jon A. Krosnick, LinChiat Chang, Harold S. Javitz, Matthew S. Levendusky, Alberto Simpser, and Rui Wang (2011) "Comparing the Accuracy of RDD Telephone Surveys and Internet Surveys Conducted with Probability and Non-Probability Samples," *Public Opinion Quarterly,* vol. 75(4), pp. 709–47.

Appendix 2: Survey of Consumers' Financial Decisionmaking Using New Technologies—Questionnaire

Below is a reproduction of the survey instrument in its entirety. The bracketed text are programming instructions that (1) indicate whether or not a question is single choice [SP] or multiple choice [MP] and (2) represent any skip pattern used to reach that question and which questions should be grouped together on a page. The respondents only saw the questions and response options; they did not see the program code.

[DISPLAY]

The Federal Reserve Board is interested in learning more about how people manage their finances, shop, and make payments. We are also interested in how people interact with financial institutions, and how mobile phones and other technology facilitate these interactions.

To begin, we are going to ask a few questions about the types of financial products and services that you use.

Banking Section

[SP]

1. Do you or does your spouse/partner currently have a checking, savings, or money market account?
   a. Yes
   b. No

[SP]

[IF Q1 = B]

2. Have you or your spouse/partner ever had a checking, savings, or money market account?
   a. Yes
   b. No

[SP]

[IF Q1 = B; shown on the same screen as Q2**]**

3. Please choose the **most important reason** why you don't have a checking, savings, or money market account from the following list:

a. I don't write enough checks to make it worthwhile
b. The minimum balance is too high
c. I don't like dealing with banks
d. The fees and service charges are too high
e. No bank has convenient hours or locations
f. Banks don't offer the products or services I need
g. Cannot manage/balance an account
h. Credit problems
i. Don't have enough money
j. Don't need or want an account
k. Other (please specify):**[TXT]**_____

[SP]

4. A payday loan (also called a paycheck advance or deposit advance) is a small, short-term loan that is intended to cover your expenses until your next payday. Firms that offer these loans generally charge fees for every $100 borrowed (for example, $15 or more). Have you ever used payday loans, paycheck advance, or deposit advance services?
   a. Yes
   b. No

[NUMBER BOX, RANGE: 0-999, IF Q4= A]

5. How many times in the last 12 months did you use payday loan or payday advance services? In answering this question, please count a rollover of a payday loan as a new loan and also count using one payday loan to pay off another as separate loans.

   _____ time(s) in the past 12 months

[MP, **IF Q4 = A; shown on the same screen as Q5**]

6. How was the money you received from the most recent payday loan or payday advance service spent?
   a. Paying utility bills (phone, power, gas)
   b. Paying rent or mortgage
   c. Paying for an emergency expense, such as repairs to your home or car, or a medical bill
   d. Deposited into a bank account to avoid overdraft charge(s)
   e. Paying miscellaneous bills
   f. Buying food, groceries, or other living expenses
   g. Other (please specify):**[TXT]**_____

[SP, **IF Q4 = A; shown on the same screen as Q5**]

7. Thinking of the most recent time you took out a payday loan, what was the main reason for using a payday loan or payday advance service rather than a bank loan or credit card?
   a. The location of the payday lender was more convenient
   b. The payday loan was much quicker to get than a bank loan or credit card
   c. It was easier to get a payday loan than to qualify for a bank loan or credit card
   d. Banks don't make loans for small amounts of money
   e. It felt more comfortable to work with the payday lender than to use a bank
   f. I didn't want the loan to show up on my credit report
   g. I didn't think I would qualify for a bank loan or credit card
   h. Other (please specify):**[TXT]**_____

[DISPLAY]

A prepaid card is a card where funds are loaded or added to a card and then you access those funds with the card number or by swiping the card. It works like a debit card except that it is not connected to a traditional bank account. A prepaid card is NOT a credit card.

There are four kinds of prepaid cards you may have seen before:

1) Gift cards are prepaid cards that you can only use at specific stores. Examples of these include department store cards and coffee shop cards.

2) General purpose prepaid cards are like gift cards except you can use them at many places. For example, a general purpose prepaid card can be used at grocery stores, clothing stores, gas stations, and so forth. These cards usually have a Visa, MasterCard or American Express logo on them.

3) Payroll cards are cards used by employers instead of a paycheck or direct deposit. These cards can be used to make purchases at many stores, and to make online payments and ATM withdrawals. They usually have a Visa or MasterCard logo on them.

4) Government issued prepaid cards are given to people who receive government benefits. Examples of these cards include Direct Express and Electronic Benefit Transfer (EBT) cards. These cards can be used to make purchases or payments, but may have restrictions on what you can purchase and where you can use them.

In the rest of the survey, you can click on the text of these four kinds of prepaid cards (in blue) to see their definitions.

[PROGRAM INSTRUCTION]

DEFINITIONS. MAKE ALL INSTANCES FOR GIFT CARD, GENERAL PURPOSE PREPAID CARD, PAYROLL CARD, AND GOVERNMENT CARD **IN THE SURVEY CLICKABLE. DISPLAY A CORRESPONDING**

DEFINITION. LET THE "CLICKABLE" TEXT AS A SIMPLE POPUP WINDOW THAT POPS UP IN A SMALLER SEPARATE WINDOW EVERY TIME **R** CLICK ON THE PHRASE.

Gift card. Gift cards are prepaid cards that you can only use at specific stores. Examples of these include department store cards and coffee shop cards.

General purpose prepaid card. General purpose prepaid cards are like gift cards except you can use them at many places. For example, a general purpose prepaid card can be used at grocery stores, clothing stores, gas stations, and so forth. These cards usually have a Visa or MasterCard logo on them.

Payroll card. Payroll cards are cards used by employers instead of a paycheck or direct deposit. These cards can be used to make purchases at many stores, and to make online payments and ATM withdrawals. They usually have a Visa or MasterCard logo on them.

Government issued prepaid card. Government issued prepaid cards are given to people who receive government benefits. Examples of these cards include Direct Express and Electronic Benefit Transfer (EBT) cards. These cards can be used to make purchases or payments, but may have restrictions on what you can purchase and where you can use them.

[MP]

8. Do you have any of the following types of prepaid cards?
   a. Gift card
   b. General purpose prepaid card
   c. Payroll card
   d. Government card
   e. None of the above **[Exclusive]**

[SP, **IF Q8=A OR Q8=C**]

9. Some general purpose prepaid cards and payroll cards can be reloaded by the card holder with extra money. Are any of your general purpose prepaid cards or payroll cards reloadable?
   a. Yes
   b. No
   c. Don't know

[SP, **IF Q9 = A**]

10. In the past 12 months, did you add money to reload any of your prepaid cards?
   a. Yes
   b. No

[SP, **IF Q10 = A**]

11. Think about the prepaid card that you reload most often. When was the last time that you personally reloaded that prepaid card?
    a. In the past 7 days
    b. In the past 30 days
    c. In the past 90 days
    d. In the past 12 months
    e. More than 12 months ago
    f. Never

[MP]

12. Which of the following financial products or services have you used in the past 12 months?
    a. Debit card or check card
    b. Paper check or money order
    c. Major credit card (VISA, MasterCard, American Express, Discover)
    d. Store-branded credit card good only at the store that issued the card
    e. General purpose prepaid card that you can add funds to
    f. Auto title loan
    g. Check cashing services
    h. Payday loans
    i. Pawn shop loan (do not include permanent sales to a pawnshop)
    j. I use none of the products listed above **[Exclusive]**

[IF Q1 = A; DISPLAY]

In this section we would like to ask you about how you interact with financial institutions.

[SP, **IF Q1 = A**]

13. Have you visited a bank branch and spoken with a teller or other bank employee in the past 12 months?
    a. Yes
    b. No

[SP, **IF Q1 = A; shown on the same screen as Q13**]

14. Have you used an ATM for any banking transactions in the past 12 months?
    a. Yes
    b. No

[SP, **IF Q1 = A; shown on the same screen as Q13**]

15. **Telephone banking** is when you access your account by calling a phone number that your bank has provided. You interact with the system using either voice commands, your phone's numeric keypad, or speaking with a live customer service representative. It does not include accessing your bank using the Internet or applications on your mobile phone.

    Have you used telephone banking in the past 12 months, either with a landline phone or your mobile phone?

    a. Yes
    b. No

[IF Q1 = A; **NUMBER BOXES; RANGE: 1-3; Unique values**]

16. What are the three main ways you or your spouse/partner interact with your financial institution when you use your accounts? You can stop numbering below if all the ways you interact with your financial institution are covered in less than three responses. (Use number 1 for most often, 2 for 2nd most often, 3 for 3rd most often used.)

    a. ATM/Cash machine
    b. In person
    c. Mail
    d. Phone – talking
    e. Phone – using touchtone service or voice recognition
    f. Computer/Internet/online service/e-mail
    g. Mobile phone application, web browser, or SMS/text message
    h. Family member, friend, or neighbor does the banking for me
    i. Other (please specify):**[TXT]**_____

[DISPLAY]

In this section we'll ask a few questions about your use of the Internet. Right now we are just interested in your use of the Internet on a computer (desktop, laptop, or tablet). Later on we will ask about use of the Internet on mobile phones.

[SP]

17. Do you currently have regular access to the Internet, either at home or outside your home (i.e., school, work, public library, etc.) that is not provided by GfK, formerly Knowledge Networks?

    a. Yes
    b. No

[SP, **IF Q17 = A**]

18. Where do you use the Internet the most often?

    a. At home
    b. At work

c. At school

d. At a library

e. At someone else's home

f. At an Internet café or store with Wi-Fi

g. Other

[SP, **IF Q17 = A AND Q1 = A**]

19. **Online banking** involves checking your account balance and recent transactions, transferring money, paying bills, or conducting other related transactions with your bank or credit card company using the Internet.

    Have you used online banking on a desktop, laptop, or tablet (e.g., iPad) computer in the past 12 months?

    a. Yes

    b. No

Screener Question on Mobile Phone Usage

[DISPLAY]

In this section we would like to ask you about your use of mobile phones (cell phones). You may be able to use your mobile phone to check bank account balances, transfer funds, pay bills, or carry out other financial transactions. Mobile phones are also being used to make payments to stores, for parking, for transportation (transit and taxis), or to another person. Mobile phones can also help you shop by comparing prices or looking up product reviews while you are in the store.

[SP, PROMPT, TERMINATE IF SKIPPED]

20. Do you own or have regular access to a mobile phone (cell phone)?

    a. Yes ◗ **[MOBILE = "YES"]**

    b. No ◗ **[MOBILE = "NO"]**

DOV: MOBILE

1: "YES"

2: "NO"

[SP]

[MOBILE = "YES"]

21. A smartphone is a mobile phone with features that may enable it to access the web, send e-mails, download applications, and interact with computers. Smartphones include the iPhone, BlackBerrys, as well as Android and Windows Mobile-powered devices.

    Is your mobile phone a smartphone?

a. Yes
b. No

[SP]

[IF Q21 = A; shown on the same screen as Q23 and Q24]

22. Which type of smartphone do you have?
    a. Android
    b. BlackBberry
    c. iPhone
    d. Windows Mobile
    e. Other
    f. Don't know

[SP]

[IF Q21 = A; shown on the same screen as Q22]

[SP]

23. Do you password protect your smartphone? Please include using a PIN, drawing a pattern, facial recognition, and other methods of securing your phone.
    a. Yes
    b. No

[IF Q21 = A; shown on the same screen as Q22]

24. When was the last time that you used the Internet on your mobile phone?
    a. In the past 7 days
    b. In the past 30 days
    c. In the past 90 days
    d. In the past 12 months
    e. More than 12 months ago
    f. Never

Mobile Banking Users

[MOBILE = "YES"]

[DISPLAY]

Mobile banking uses a mobile phone to access your bank account, credit card account, or other financial account. This can be done either by accessing your

bank's web page through the web browser on your mobile phone, via text messaging, or by using an application downloaded to your mobile phone.

[SP, **MOBILE = "YES"**]

25. Have you used mobile banking in the past 12 months?
    a. Yes ➧ **[MOBILEBANK = "YES"]**
    b. No ➧ **[MOBILEBANK = "NO"]**

DOV: MOBILEBANK

1: "YES"

2: "NO"

[SP]

[IF MOBILE = "NO"]

26. Do you plan to use mobile banking in the next 12 months?
    a. Definitely will use
    b. Probably will use
    c. Probably will not use
    d. Definitely will not use

[SP]

[IF Q26 = C OR Q26 = D]

27. Do you think you will ever use mobile banking?
    a. Definitely will use
    b. Probably will use
    c. Probably will not use
    d. Definitely will not use

[SP, **MOBILE = "Yes" AND Q1 = A]**

27b. Does your bank charge a service fee for the use of mobile banking?
    a. Yes
    b. No
    c. Don't know

[IF Q27b=A, NUMBER BOX; RANGE: 0-99]

27c. Please enter the amount of the monthly fee your bank charges for the use of mobile banking. $ ____

[MP]

[IF MOBILEBANK = "Yes"]

28. Using your mobile phone, have you done any of the following in the past 12 months?
    a. Downloaded your bank's mobile banking application on your mobile phone
    b. Checked an account balance or checked recent transactions
    c. Made a bill payment using your bank's online banking website or banking application
    d. Received a text message alert from your bank
    e. Transferred money between two accounts
    f. Deposited a check to your account electronically using your mobile phone camera
    g. Located the closest in-network ATM for your bank
    h. Received a fraud alert
    i. Other banking-related activities (please specify):**[TXT]**_____

IF MOBILEBANK= "Yes"; NUMBER BOX; RANGE: 0-999; shown on the same screen as Q28]

29. In a typical month, how many times do you personally use mobile banking? If never please enter "0". _____ times

[SP]

[IF MOBILEBANK= "Yes"; shown on the same screen as Q28]

30. Overall, how satisfied are you with your mobile banking experiences?
    a. Very satisfied
    b. Satisfied
    c. Dissatisfied
    d. Very dissatisfied

[SP]

[IF MOBILEBANK= "Yes"]

31. When did you start using mobile banking?
    a. In the last 6 months
    b. 6 to 12 months ago
    c. 1 to 2 years ago
    d. More than 2 years ago
    e. I don't remember

[SP]

[IF MOBILEBANK= "Yes"; shown on the same screen as Q31]

32. When did you start using mobile banking?
    a. I got a smartphone
    b. My bank started offering the service
    c. There is no bank branch near my home
    d. I became comfortable with the security of mobile banking
    e. I liked the convenience of mobile banking
    f. To receive fraud alerts or check my account for fraudulent transactions
    g. Other (please specify):**[TXT]**_____

Mobile Payments Users

[MOBILE = "YES"]

[DISPLAY]

Mobile payments are purchases, bill payments, charitable donations, payments to another person, or any other payments made using a mobile phone. You can do this either by accessing a web page through the web browser on your mobile device, by sending a text message (SMS), or by using a downloadable application on your mobile device. The amount of the payment may be applied to your phone bill (for example, Red Cross text message donation), charged to your credit card, deducted from a prepaid account, or withdrawn directly from your bank account.

[SP, **MOBILE = "YES"**]

33. Have you made a mobile payment in the past 12 months?
    a. Yes ◗ **[MOBILEPAY = "YES"]**
    b. No ◗ **[MOBILEPAY = "NO"]**

DOV: MOBILEPAY

1: "YES"

2: "NO"

[MP]

[IF MOBILEPAY = "YES"]

34. Using your mobile phone, have you done any of the following in the past 12 months?
    a. Transferred money directly to another person's bank, credit card, or Paypal account (i.e., friend, relative, babysitter)

b. Received money from another person using my mobile phone
c. Waved or tapped my mobile phone at the cash register to pay for a purchase
d. Used a mobile app to pay for a purchase (i.e., Pay with Square, Dwolla)
e. Scanned a barcode or QR code using your mobile phone to make a mobile payment (i.e., Starbucks app)
f. Used your mobile phone's web browser to make a mobile payment (including paying bills online)
g. Used a text message to make a mobile payment (including charitable donation by text message)
h. Made an online purchase (including purchases from iTunes or Google Play)
i. None of the above (please specify what type of mobile payment you did make):**[TXT]**_____ **[Exclusive]**

[MP]

[IF MOBILEPAY = "YES"]

35. Do you make your mobile payments: using a debit card, credit card, or pre-paid card; using a direct withdrawal from your bank account; by adding the charge to your phone bill; or through a service such as Google Wallet, Dwolla, or Pay with Square? (Select all that apply)
    a. Credit card
    b. Debit card
    c. Prepaid card
    d. Bank account
    e. Charged to your phone bill
    f. Dwolla
    g. Google Wallet
    h. Pay with Square
    i. Other (please specify):**[TXT]**_____

[IF MOBILEPAY = **"yes"**; NUMBER BOX; RANGE: 0-99; shown on the same screen as Q35]

36. In a typical month, how many times do you use your mobile phone to make payments? If never please enter "0". _____times

[SP]

[IF MOBILEPAY = "YES"; shown on the same screen as Q36]

37. Overall, how satisfied are you with your mobile payment experiences?
    a. Very satisfied

b. Satisfied

c. Dissatisfied

d. Very dissatisfied

[SP]

[IF MOBILEPAY= "Yes"]

38. When did you start using mobile payments?

a. In the last 6 months

b. 6 to 12 months ago

c. 1 to 2 years ago

d. More than 2 years ago

e. I don't remember

[SP]

[IF MOBILEPAY= "Yes"; shown on the same screen as Q38]

39. What was the main reason why you started using mobile payments when you did?

a. I got a smartphone

b. The ability to make mobile payments became available

c. I became comfortable with the security of mobile payments

d. I liked the convenience of mobile payments

e. A store I visit started offering the service

f. Other (please specify):**[TXT]**_____

Non-Mobile Banking Users

[IF MOBILEBANK="NO"]

[DISPLAY]

We would like to ask you about some of your reasons for not using mobile banking.

[MP]

[IF MOBILEBANK= "NO" and MOBILE= "YES"]

40. You indicated that you do not currently use mobile banking. What are the main reasons why you have decided not to use mobile banking?

a. I'm concerned about the security of mobile banking

b. My banking needs are being met without mobile banking

c. I don't see any reason to use mobile banking
d. The cost of data access on my wireless plan is too high
e. It is too difficult to see on my mobile phone's screen
f. I don't have a smartphone or my phone can't be used for mobile banking
g. My bank charges a fee for using mobile banking
h. I don't do the banking in my household
i. I don't trust the technology to properly process my banking transactions
j. I don't have a banking account with which to use mobile banking
k. It's difficult or time consuming to set up mobile banking
l. Other (please specify):**[TXT]**_____

[SP]

[IF Q40 = A]

41. You mentioned that security was one of your top concerns with mobile banking; what security aspect are you most concerned with?
    a. Hackers gaining access to my phone remotely
    b. Someone intercepting my calls or data
    c. Losing my phone or having my phone stolen
    d. Malware or viruses being installed on my phone
    e. Companies misusing my personal information
    f. All of the above
    g. Other (please specify):**[TXT]**_____

[MP]

[IF MOBILEBANK= "NO"]

42. Assuming that any concerns you have about mobile banking were addressed, which of the following activities would you be interested in doing with your mobile phone?
    a. Download your bank's mobile banking application on your mobile phone
    b. Check an account balance or check recent transactions
    c. Make a bill payment using your bank's online banking website or banking application
    d. Receive text message alerts from your bank
    e. Deposit a check electronically using your mobile phone camera
    f. Transfer money between two accounts
    g. Other banking-related activities (please specify):**[TXT]**_____
    h. None, I don't want to use mobile banking **[Exclusive]**

Non-Mobile Payments Users

[IF MOBILEPAY = "NO"]

[**DISPLAY**; shown on the same page as Q43]

We would like to ask you about some of your reasons for not using mobile payments

[MP]

[IF MOBILEPAY = "NO" AND MOBILE = "YES"]

43. You indicated that you do not use mobile payments. What are the main reasons why you have decided not to use mobile payments?
    a. I'm concerned about the security of mobile payments
    b. It's easier to pay with another method like cash or a credit card
    c. I don't see any benefit from using mobile payments
    d. I don't know of any stores that let you pay with your mobile phone
    e. The places I shop don't accept mobile payments
    f. I don't have the necessary feature on my phone
    g. The cost of data access on my wireless plan is too high
    h. I don't trust the technology to properly process my payments
    i. It's difficult or time consuming to set up mobile payments
    j. I don't need to make any payments or someone else pays the bills
    k. I don't really understand all the different mobile payment options
    l. Other (please specify):**[TXT]**_____

[SP]

[IF Q43 = A]

44. You mentioned that security was one of your top concerns with mobile payments; what security aspect are you most concerned with?
    a. Hackers gaining access to my phone remotely
    b. Someone intercepting my payment information or other data
    c. Losing my phone or having my phone stolen
    d. Malware or viruses being installed on my phone
    e. Companies misusing my personal information
    f. All of the above
    g. Other (please specify):**[TXT]**_____

[MP]

[IF MOBILEPAY = "NO"]

45. Assuming that the reason(s) why you do not currently use mobile payments was addressed, which of the following activities would you be interested in doing with your mobile phone?

    a. Making payments directly to another person (i.e., friend, relative, babysitter)

    b. Waving or tapping my mobile phone at the cash register to pay for a purchase

    c. Using a mobile app to pay for purchases

    d. Paying bills online

    e. Transferring money to friends or family in another country

    f. Using your mobile phone as a "virtual wallet" to replace all the cards you currently carry in your wallet

    g. Buying goods or services online

    h. Accepting payments from another person

    i. Receiving/using coupons on your phone

    j. Receiving specials and discount offers based on your location (i.e., you walk into a store and a coupon appears on your mobile phone for a product sold there)

    k. Other payment-related activities (please specify): **[TXT]**_____

    l. None, I don't want to use mobile payments **[Exclusive]**

Mobile Financial Services Security Questions

[MOBILE = "YES" FOR QUESTIONS 46 THROUGH 52]

[DISPLAY, SHOW IT ON THE SAME SCREEN WITH Q46 TO Q49]

Please rate the level of security of each of the following four methods for mobile banking from Very Safe to Very Unsafe.

[SP]

46. Mobile banking using SMS (text messaging) to send and receive alerts or check balances.

    a. Very safe

    b. Somewhat safe

    c. Somewhat unsafe

    d. Very unsafe

    e. Don't know

[SP; **shown on the same screen as Q46**]

47. Mobile banking using a mobile browser similar to the way you access the Internet on your PC.
    a. Very safe
    b. Somewhat safe
    c. Somewhat unsafe
    d. Very unsafe
    e. Don't know

[SP]

48. Mobile banking using an application downloaded from your phone's mobile app store.
    a. Very safe
    b. Somewhat safe
    c. Somewhat unsafe
    d. Very unsafe
    e. Don't know

[SP; **shown on the same screen as Q48**]

49. How would you currently rate the overall security of mobile banking for protecting your personal information?
    a. Very safe
    b. Somewhat safe
    c. Somewhat unsafe
    d. Very unsafe
    e. Don't know

[MP]

50. Would you like to use your mobile phone for any of the following purposes, assuming they were made available to you?
    a. Buy things at the point of sale
    b. Track your finances on a daily basis
    c. Organize, track, and store gift cards, loyalty, and reward points
    d. Compare prices when shopping
    e. As a ticket for buses, trains, or subways
    f. As a key to enter your house
    g. Purchase tickets to events
    h. As a membership card (such as museums, gym, etc.)
    i. To receive and manage discount offers and coupons

j. To receive offers and promotions based on where you are (i.e., you walk into a store and a coupon appears on your mobile phone for a product sold there)

k. As a form of photo identification

l. None of the above **[Exclusive]**

[IF MOBILE = "YES"]

[DISPLAY; shown on the same screen as Q51 and Q52]

For the following two questions please rate how much you agree with the statement on a scale from strongly agree to strongly disagree.

[SP; **shown on the same screen as Q52**]

[SP]

51. I am willing to allow my mobile phone to provide my location to companies so that they can offer me discounts, promotions, or services based on where I am.

    a. Strongly agree

    b. Agree

    c. Disagree

    d. Strongly disagree

[SP; **shown on the same screen as Q51**]

52. I am willing to allow my mobile phone to provide personal information such as my sex, age, friends, and shopping history to companies so that they can offer me discounts, promotions, or services based on this information.

    a. Strongly agree

    b. Agree

    c. Disagree

    d. Strongly disagree

Shopping Behavior Questions

[ASKED OF EVERYONE]

[DISPLAY]

In this section we would like to ask you about your shopping habits.

[SP]

[IF MOBILE = "YES" AND Q21 = A]

53. Have you ever used your mobile phone to comparison shop over the Internet while at a retail store?

a. Yes

b. No

[SP]

[IF MOBILE = "YES" AND Q21 = A; shown on the same screen as Q53]

54. Have you ever used a barcode scanning application on your mobile phone while shopping at a retail store to find the best price for an item?

a. Yes

b. No

[SP]

[IF MOBILE = "YES" AND Q21 = A; shown on the same screen as Q53]

55. Have you ever scanned a QR code (similar to a barcode) in a newspaper, magazine, or billboard advertisement to obtain information about a product on your mobile phone?

a. Yes

b. No

[SP]

[IF Q53 = A OR Q54 = A]

56. Has using your mobile phone to compare prices while you were shopping at a retail store ever changed where you made your purchase?

a. Yes

b. No

[SP]

[IF MOBILE = "YES" AND Q21 = A]

57. Have you ever used your mobile phone to browse product reviews or get product information while shopping at a retail store? This could be done by, for example, Googling the product on your mobile browser or scanning a QR code.

a. Yes

b. No

[SP]

[IF Q57 = A]

58. Has reading product reviews on your mobile phone while shopping at a retail store ever changed which item you ended up purchasing?

a. Yes

b. No

[SP]

[IF MOBILEBANK = "YES"]

59. In the past 12 months, have you used your mobile phone to check your account balance or available credit before making a large purchase?

    a. Yes

    b. No

[SP]

[IF Q59 = A]

60. Thinking of the most recent time that you used your mobile phone to check your account balance or available credit before making a large purchase did you decide not to buy that particular item because of the amount of money left in your account or the amount of your available credit?

    a. Yes

    b. No

Payments Choice

[MOBILE = "YES"]

[DISPLAY]

In this section we would like to ask about your thoughts on some of the new mobile financial service technologies.

[SP]

[MOBILE = "YES"]

61. New **mobile** "contactless" payments are becoming available from some banks, credit card companies, merchants, and transit operators. These let consumers "tap" or wave their mobile phone at a terminal instead of swiping a card, or use a special application—sometimes involving scanning a barcode—on their mobile phone to make the payment.

    If you were offered the option of using this service, how likely would you be to use it?

    a. I already use it

    b. Very likely

    c. Likely

    d. Unlikely

    e. Very unlikely

[SP]

[MOBILE = "YES"; shown on the same screen as Q61]

62. How likely do you think it is that mobile contactless payments will become a major form of payment in the next five years?
    a. Very likely
    b. Likely
    c. Unlikely
    d. Very unlikely
    e. Don't know

Financial Management (Saving, Budgeting) Questions

[ASKED OF EVERYONE]

[DISPLAY, SHOW IT ON THE SAME SCREEN WITH Q64 TO Q67]

In order to help us to understand your role in the financial activities of your household, please rank how much responsibility you have for the following financial tasks.

[SP]

63. Maintaining the household budget and managing household income
    a. None or almost none
    b. Some
    c. Shared equally with other household members
    d. Most
    e. All or almost all

[SP]

64. Paying monthly bills (rent or mortgage, utilities, cell phone, etc.)
    a. None or almost none
    b. Some
    c. Shared equally with other household members
    d. Most
    e. All or almost all

[10 POINT SCALE: 1 TO 10]

65. Think about your overall personal financial situation. On a scale from 1 to 10 where 1 is "Extremely Dissatisfied" and 10 is "Extremely Satisfied," how satisfied are you with your finances?

[SP]

66. Have you set aside emergency or rainy day funds that would cover your expenses for 3 months, in case of sickness, job loss, economic downturn, or other emergencies?

    a. Yes
    b. No

[SP]

67. How often do you use a spending plan or budget for your expenses?

    a. Never
    b. Rarely
    c. Sometimes
    d. Often
    e. Always

[SP]

68. Do you or anyone in your household use a program or website to track your household finances (for example, Quicken, Mint.com, Excel, or a website provided by your bank)?

    a. Yes
    b. No

[SP, IF MOBILE= "YES"]

69. Do you use your mobile phone to track purchases and expenses?

    a. Yes
    b. No

[MP, IF Q69= A]

70. What method(s) do you use to track purchases and expenses on your mobile phone?

    a. A mobile application for expense tracking
    b. A spreadsheet
    c. Online (using the web browser to access a website)
    d. Send text messages
    e. Take notes in a notepad or word processor
    f. Other (please specify):**[TXT]**_____

[IF Q69= A; NUMBER BOX; RANGE: 0-999; shown on the same screen as Q70]

71. In a typical month, how often do you use your mobile phone to track purchases and expenses? (If never please enter "0.") _____times

[MP, IF Q28= D]

72. You previously mentioned that you receive text alerts from your bank. What kind of text alerts do you receive?
    a. Low-balance alerts
    b. Payment due alerts
    c. Saving reminders
    d. Fraud alerts
    e. Other (please specify): **[TXT]**_____

[MP, IF Q72= A]

73. Thinking of the most recent low-balance alert you received by text message, which of the following actions did you take after receiving the alert?
    a. Transferred money into the account with the low balance
    b. Deposited money into the account with the low balance
    c. Reduced my spending
    d. None of the above **[Exclusive]**

[SP, IF Q72= B]

74. Has receiving payment due alerts improved your ability to pay your bills on time?
    a. Yes, by a lot
    b. Yes, by a little
    c. No

[SP, IF Q1 = A]

75. Do you have any regular payments that you receive, such as your paycheck, Social Security benefits, or unemployment insurance benefits, directly deposited into your bank account?
    a. Yes
    b. No

[SP, IF Q1 = A; shown on the same screen as Q75]

76. Do you have any regular payments, such as your rent/mortgage, credit card payment, or utility bill payment, automatically withdrawn from your bank account?
    a. Yes
    b. No

Financial Literacy Questions

[ASKED OF EVERYONE]

[SP]

77. Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account?

    a. More than today
    b. Exactly the same
    c. Less than today
    d. Don't know

[SP; shown on the same screen as Q77]

78. Considering a long time period (for example, 10 or 20 years), which asset normally gives the highest return?

    a. Savings accounts
    b. U.S. government bonds
    c. Stocks
    d. Don't know

[SP; shown on the same screen as Q77]

79. If an investor who only owns two stocks right now decides to instead spread their money among many different assets (i.e., more stocks, add bonds, add real estate), their risk of losing money on their entire portfolio will:

    a. Increase
    b. Decrease
    c. Stay the same
    d. Don't know

[SP]

80. Do you think that the following statement is true or false? "If you were to invest $1,000 in a stock mutual fund for a year, it would be possible to have less than $1,000 when you withdraw your money."

    a. True
    b. False
    c. Don't know

[SP; **shown on the same screen as Q80**]

81. Suppose you owe $1,000 on a loan and the interest rate you are charged is 10% per year compounded annually. If you didn't make any payments on this loan,

at this interest rate, how many years would it take for the amount you owe to double?

a. Less than 5 years
b. Between 5 to 10 years
c. 10 years or more
d. Don't know

[MP]

82. Imagine that your car breaks down and requires $400 worth of repairs in order to drive again. **Based on your current financial situation,** how would you pay for this expense? If you would use more than one method to cover this expense, please select all that apply.

a. Put it on my credit card
b. With the money currently in my checking account or with cash
c. By taking money out of my savings
d. Using money from a bank loan or line of credit
e. Use overdraft on my bank account
f. By borrowing from a friend or family member
g. Using a payday loan or deposit advance
h. By pawning something
i. By selling something
j. I wouldn't be able to pay for the repairs right now
k. Other (please specify):**[TXT]**_____

Risk-Aversion Questions

[ASKED OF EVERYONE]

[SP]

83. Which of the following statements comes closest to describing the amount of financial risk that you are willing to take when you save or make investments?

a. Take substantial financial risks expecting to earn substantial returns
b. Take above-average financial risks expecting to earn above-average returns
c. Take average financial risks expecting to earn average returns
d. Not willing to take any financial risks

[SP]

84. Suppose that you are the only income earner in the family. Your doctor recommends that you move because of allergies, and you have to choose between two possible jobs. The first would guarantee your current total family income for life. The second is possibly better paying, but the income is also less cer-

tain. There is a 50-50 chance the second job would double your total lifetime income and a 50-50 chance that it would cut it by a third. Which job would you take—the first job or the second job?

a. First job

b. Second job

[SP]

[IF Q84 = A]

85. Suppose the chances were 50-50 that the second job would double your lifetime income and 50-50 that it would cut it by 20 percent. Would you take the first job or the second job?

a. First job

b. Second job

[SP]

[IF Q84 = B]

86. Suppose the chances were 50-50 that the second job would double your lifetime income, and 50-50 that it would cut it in half. Would you take the first job or the second job?

a. First job

b. Second job

[SP]

[IF Q86 = B]

87. Suppose the chances were 50-50 that the second job would double your lifetime income and 50-50 that it would cut it by 75 percent. Would you take the first job or the second job?

a. First job

b. Second job

[SP]

[IF Q85 = A]

88. Suppose the chances were 50-50 that the second job would double your lifetime income and 50-50 that it would cut it by 10 percent. Would you take the first job or the second job?

a. First job

b. Second job

Appendix 3: Consumer Responses to Survey Questionnaire

Table C.1. Respondent or spouse have a checking, savings, or money market account?
Percent, except as noted

Q1	
Yes	89.6
No	9.5
Refused to answer	1
Number of respondents	**2,600**

Table C.2. Respondent or spouse ever had a checking, savings, or money market account?
Percent, except as noted

Q2	
Yes	42
No	53.6
Refused to answer	4.3
Number of respondents	**163**

Table C.3. The most important reason why respondent doesn't have any bank account
Percent, except as noted

Q3	
I don't write enough checks to make it worthwhile	16.4
The minimum balance is too high	2.3
I don't like dealing with banks	10.7
The fees and service charges are too high	5.8
Cannot manage/balance an account	4.3
Credit problems	4.5
Don't have enough money	17.1
Don't need or want an account	22.7
Other	6.8
Refused to answer	9.3
Number of respondents	**163**

Table C.4. Has respondent ever used payday loans, paycheck advance, or deposit advance services?
Percent, except as noted

Q4	
Yes	9.5
No	90
Refused to answer	.5
Number of respondents	**2,600**

Table C.5. Times in the last 12 months that respondent used payday loan or payday advance services?
Percent, except as noted

Q5	
0	36.2
1	21.8
2	9
3	6.8
4	4.6
5	4.4
6	4.2
7	0.7
8	1.7
9	1
10	1.4
12	0.8
15	0.4
20	2.4
26	0.4
Refused to answer	4.3
Number of respondents	**195**

Table C.6. How was the most recent payday loan or payday advance spent?

Percent, except as noted

Q6	
Paying utility bills (phone, power, gas)	36.6
Paying rent or mortgage	20.4
Paying for an emergency expense, such as repairs to your home or car, or a medical bill	24.1
Deposited into a bank account to avoid overdraft change(s)	17.2
Paying miscellaneous bills	30.1
Buying food, groceries, or other living expenses	34.2
Other	6
Refused to answer	12.6
Number of respondents	**195**

Table C.7. Main reason for using a payday loan rather than a bank loan or credit card?

Percent, except as noted

Q7	
The location of the payday lender was more convenient	10.2
The payday loan was much quicker to get than a bank loan or credit card	18.5
It was easier to get a payday loan than to qualify for a bank loan or credit card	20.9
Banks don't make loans for small amounts of money	6.2
It felt more comfortable to work with the payday lender than to use a bank	1.7
I didn't want the loan to show up on my credit report	2.5
I didn't think I would qualify for a bank loan or credit card	22
Other	6.6
Refused to answer	11.3
Number of respondents	**195**

Table C.8. Does respondent have any of the following types of prepaid cards?

Percent, except as noted

Q8	
Gift card	39.9
General purpose prepaid card	14.1
Payroll card	2.2
Government card	6.2
None of the above	50.4
Refused to answer	0.5
Number of respondents	**2,600**

Table C.9. Are any of respondent's general purpose prepaid cards or payroll cards reloadable?

Percent, except as noted

Q9	
Yes	57.5
No	25.8
Don't know	16.7
Number of respondents	**396**

Table C.10. In the past 12 months, did respondent add money to reload any prepaid cards?

Percent, except as noted

Q10	
Yes	57
No	43
Number of respondents	**199**

Table C.11. When was the last time that respondent personally reloaded that prepaid card?

Percent, except as noted

Q11	
In the past 7 days	15.5
In the past 30 days	35
In the past 90 days	27.1
In the past 12 months	14.3
More than 12 months ago	6.7
Never	1.3
Number of respondents	**110**

Table C.12. Which financial products or services has respondent used in the past 12 months?

Percent, except as noted

Q12	
Debit card or check card	69.3
Paper check or money order	65.5
Major credit card (VISA, MasterCard, American Express, Discover)	61.9
Store-branded credit card good only at the store that issued the card	27.5
General purpose prepaid card that you can add funds to	10.8
Auto title loan	3.5
Check cashing services	3
Payday loans	2.8
Pawn shop loan	1.9
None of the above	7.1
Refused to answer	0.7
Number of respondents	**2,600**

Table C.13. Has respondent visited a bank branch and spoken with a bank employee in the past 12 months?

Percent, except as noted

Q13	
Yes	84.5
No	15
Refused to answer	0.5
Number of respondents	**2,419**

Table C.14. Has respondent used an ATM for any banking transactions in the past 12 months?

Percent, except as noted

Q14	
Yes	73.5
No	25.8
Refused to answer	0.7
Number of respondents	**2,419**

Table C.15. Has respondent used telephone banking in the past 12 months?

Percent, except as noted

Q15	
Yes	34.1
No	65.2
Refused to answer	0.8
Number of respondents	**2,419**

Table C.16. The three main ways respondent or spouse interact with their financial institution?

Percent, except as noted

Q16	
ATM/cash machine	72
In person	75.9
Mail	13.9
Phone - talking	18.7
Phone - using touchtone service or voice recognition	11.2
Computer/Internet/online service/e-mail	59.3
Mobile phone application, web browser, or SMS/text message	12.5
Family member, friend, or neighbor does the banking for me	4.7
Other	1.5
Number of respondents	**2,419**

Table C.17. Does respondent have regular access to the Internet?

Percent, except as noted

Q17	
Yes	88
No	10.9
Refused to answer	1.2
Number of respondents	**2,600**

Table C.18. Where does respondent use the Internet the most often?

Percent, except as noted

Q18	
At home	77.7
At work	16
At school	1.3
At a library	3
At someone else's home	0.7
At an Internet café or store with Wi-Fi	0.2
Other	0.6
Refused to answer	0.4
Number of respondents	**2,357**

Table C.19. Has respondent used online banking on a desktop, laptop, or tablet computer in the past 12 months?

Percent, except as noted

Q19	
Yes	74.1
No	25.7
Refused to answer	0.2
Number of respondents	**2,233**

Table C.20. Does respondent own or have regular access to a mobile phone (cell phone)?

Percent, except as noted

Q20	
Yes	86.7
No	13.3
Number of respondents	**2,600**

Table C.21. Is respondent's mobile phone a smartphone?

Percent, except as noted

Q21	
Yes	51.9
No	47
Refused to answer	1
Number of respondents	**2,291**

Table C.22. Which type of smartphone does respondent have?

Percent, except as noted

Q22	
Android	48.2
BlackBerry	5.4
iPhone	34.8
Windows Mobile	2.2
Other	5.4
Don't know	3.2
Refused to answer	0.8
Number of respondents	**1,149**

Table C.23. Does respondent password protect their smartphone?

Percent, except as noted

Q23	
Yes	54.2
No	45.3
Refused to answer	0.5
Number of respondents	**1,149**

Table C.24. When was the last time that respondent accessed the Internet on mobile phone?

Percent, except as noted

Q24	
In the past 7 days	86.5
In the past 30 days	5.1
In the past 90 days	1.6
In the past 12 months	0.9
More than 12 months ago	0.4
Never	5.1
Refused to answer	0.4
Number of respondents	**1,149**

Table C.25. Has respondent used mobile banking in the past 12 months?

Percent, except as noted

Q25	
Yes	27.7
No	71.6
Refused to answer	0.6
Number of respondents	**2,291**

Table C.26. Does respondent plan to use mobile banking in the next 12 months?

Percent, except as noted

Q26	
Definitely will use	0.8
Probably will use	9.6
Probably will not use	36.4
Definitely will not use	52.9
Refused to answer	0.2
Number of respondents	**1,709**

Table C.27. Does respondent think he/she will ever use mobile banking?

Percent, except as noted

Q27	
Definitely will use	0.2
Probably will use	14
Probably will not use	46.5
Definitely will not use	38.8
Refused to answer	0.6
Number of respondents	**1,543**

Table C.27.b Does respondent's bank charge a service fee for the use of mobile banking?

Percent, except as noted

Q27b	
Yes	1.3
No	35.6
Don't know	62.2
Refused to answer	0.8
Number of respondents	**2,180**

Table C.27.c Monthly fee respondent's bank charges for use of mobile banking?

Percent, except as noted

Q27c	
0	23.2
1	11.3
2	2.7
3	4.8
5	2.5
10	2.6
12	11.4
15	20.5
18	1.3
20	8
30	3.5
50	1.2
Refused to answer	7.1
Number of respondents	**25**

Table C.28. Using a mobile phone, respondents have done the following in the past 12 months

Percent, except as noted

Q28	
Downloaded your bank's mobile banking application on your mobile phone	48.9
Checked an account balance or checked recent transactions	86.6
Made a bill payment using your bank's online banking website or banking application	27.2
Received a text message alert from your bank	28.5
Transferred money between two accounts	53
Deposited a check to your account electronically using your mobile phone camera	20.5
Located the closest in-network ATM for your bank	23.6
Received a fraud alert	4.4
Other banking related activities	1.1
Refused to answer	4.6
Number of respondents	**571**

Table C.29. In a typical month, how many times does respondent personally use mobile banking?

Percent, except as noted

Q29	
1	5.8
2	11.5
3	14.4
4	7.9
5	7.6
6	11.3
7	2.1
8	0.4
9	3.6
10	0.5
12	13.5
14	0.7
15	0.1
16	3.7
17	0.3
20	0.1
25	7.5
30	1.2
31	3.8
40	0.2
45	1.1
50	0.1
60	0.3
100	0.2
Refused to answer	2.3
Number of respondents	**571**

Table C.30. Overall, how satisfied is respondent with mobile banking experiences?

Percent, except as noted

Q30	
Very satisfied	51.8
Satisfied	43.6
Dissatisfied	1
Very dissatisfied	0.3
Refused to answer	3.3
Number of respondents	**571**

Table C.31. When did respondent start using mobile banking?

Percent, except as noted

Q31	
In the last 6 months	18.2
6 to 12 months ago	16.6
1 to 2 years ago	33.4
More than 2 years ago	24.8
I don't remember	6
Refused to answer	1
Number of respondents	**571**

Table C.32. The main reason why respondent started using mobile banking?

Percent, except as noted

Q32	
I got a smartphone	37.1
My bank started offering the service	19.2
There is no bank branch near my home	2.5
I became comfortable with the security of mobile banking	3.1
I liked the convenience of mobile banking	30
To receive fraud alerts or check my account for fraudulent transactions	1.9
Other	4.1
Refused to answer	2
Number of respondents	**571**

Table C.33. Has respondent made a mobile payment in the past 12 months?

Percent, except as noted

Q33	
Yes	14.8
No	84.5
Refused to answer	0.7
Number of respondents	**2,291**

Table C.34. Using a mobile phone, respondent has done the following in the past 12 months

Percent, except as noted

Q34	
Transferred money directly to another person's bank, credit card or paypal account (i.e., friend, relative, babysitter)	29.6
Received money from another person using my mobile phone	15
Waved or tapped my mobile phone at the cash register to pay for a purchase	5.9
Used a mobile app to pay for a purchase (i.e., Pay with Square, Dwolla)	8.6
Scanned a barcode or QR code using your mobile phone to make a mobile payment (i.e., Starbucks app)	9.1
Used your mobile phone's web browser to make a mobile payment (including paying your bills online)	42.1
Used a text message to make a mobile payment (including charitable donation by text message)	8.1
Made an online purchase (including purchases from iTunes or Google Play)	34.6
None of the above	22.7
Refused to answer	2.8
Number of respondents	**308**

Table C.35. How does respondent make mobile payments?

Percent, except as noted

Q35	
Credit card	33.3
Debit card	45
Prepaid card	6.9
Bank account	39.7
Charged to your phone bill	5.3
Dwolla	0
Google Wallet	2.4
Pay with Square	1.9
Other	7.9
Refused to answer	6.7
Number of respondents	**308**

Table C.36. In a typical month, how many times does respondent use mobile phone to make payments?

Percent, except as noted

Q36	
0	21.2
1	19
2	20.3
3	10.4
4	7.7
5	5.5
6	1
7	2.5
8	2.1
10	1.7
12	0.3
13	0.6
14	0.1
15	0.2
16	0.3
20	2
Refused to answer	5.1
Number of respondents	**308**

Table C.37. Overall, how satisfied is respondent with mobile payment experiences?

Percent, except as noted

Q37	
Very satisfied	43.8
Satisfied	49.4
Dissatisfied	1.5
Refused to answer	5.3
Number of respondents	**308**

Table C.38. When did respondent start using mobile payments?

Percent, except as noted

Q38	
In the last 6 months	13.2
6 to 12 months ago	15.9
1 to 2 years ago	29.3
More than 2 years ago	18.1
I don't remember	18.9
Refused to answer	4.6
Number of respondents	**308**

Table C.39. What was the main reason why respondent started using mobile payments?

Percent, except as noted

Q39	
I got a smartphone	28.9
The ability to make mobile payments became available	13.9
I became comfortable with the security of mobile payments	10.1
I liked the convenience of mobile payments	33.5
A store I visit started offering the service	0.6
Other (please specify)	10.4
Refused to answer	2.5
Number of respondents	**308**

Table C.40. What are the main reasons why respondent has decided not to use mobile banking?

Percent, except as noted

Q40	
I'm concerned about the security of mobile banking	48.7
My banking needs are being met without mobile banking	53.9
I don't see any reason to use mobile banking	46.6
The cost of data access on my wireless plan is too high	10.9
It is too difficult to see on my mobile phone's screen	9.7
I don't have a smartphone or my phone can't be used for mobile banking	39.9
My bank charges a fee for using mobile banking	1.4
I don't do the banking in my household	4.8
I don't trust the technology to properly process my banking transactions	13.8
I don't have a banking account with which to use mobile banking	6.2
It's difficult or time consuming to set up mobile banking	5.1
Other	5.2
Refused to answer	0.2
Number of respondents	**1,709**

Table C.41. What security aspect is respondent most concerned with?

Percent, except as noted

Q41	
Hackers gaining access to my phone remotely	30.3
Someone intercepting my calls or data	8.9
Losing my phone or having my phone stolen	11.3
Malware or viruses being installed on my phone	1.9
Companies misusing my personal information	2.7
All of the above	44.2
Other	0.4
Refused to answer	0.3
Number of respondents	**832**

Table C.42. If addressed, which activities would respondent be interested in doing with mobile phone?

Percent, except as noted

Q42	
Download your bank's mobile banking application on your mobile phone	11.7
Check an account balance or check recent transactions	32.8
Make a bill payment using your bank's online banking website or banking application	16.7
Receive text message alerts from your bank	16.7
Deposit a check electronically using your mobile phone camera	17.2
Transfer money between two accounts	21.4
Other	0.3
None, I don't want to use mobile banking	56.2
Refused to answer	0.6
Number of respondents	**1,709**

Table C.43. What are the main reasons why respondent decided not to use mobile payments?

Percent, except as noted

Q43	
I'm concerned about the security of mobile payments	38.1
It's easier to pay with another method like cash or a credit card	35.5
I don't see any benefit from using mobile payments	35.1
I don't know of any stores that let you pay with your mobile phone	9.4
The places I shop don't accept mobile payments	3.9
I don't have the necessary feature on my phone	30.3
The cost of data access on my wireless plan is too high	9.6
I don't trust the technology to properly process my payments	16.4
It's difficult or time consuming to set up mobile payments	4.9
I don't need to make any payments or someone else pays the bills	10.1
I don't really understand all the different mobile payment options	13.6
Other	7.4
Refused to answer	1.8
Number of respondents	**1,973**

Table C.44. What security aspect is respondent most concerned with?

Percent, except as noted

Q44	
Hackers gaining access to my phone remotely	28.7
Someone intercepting my payment information or other data	11.5
Losing my phone or having my phone stolen	9.5
Malware or viruses being installed on my phone	1.5
Companies misusing my personal information	1.5
All of the above	46.3
Other	0.7
Refused to answer	0.2
Number of respondents	**767**

Table C.45. If addressed, which activities would respondent be interested in doing with mobile phone?

Percent, except as noted

Q45	
Making payments directly to another person (i.e., friend, relative, babysitter)	12.4
Waving or tapping my mobile phone at the cash register to pay for a purchase	12.7
Using a mobile app to pay for purchases	9.6
Paying bills online	19.4
Transferring money to friends or family in another country	4.4
Using your mobile phone as a "virtual wallet" to replace all the cards you currently carry in your wallet	12.1
Buying goods or services online	12.8
Accepting payments from another person	11
Receiving/using coupons on your phone	16.4
Receiving specials and discount offers based on your location (i.e., you walk into a store and a coupon appears on your mobile phone for a product sold there)	14.8
Other payment-related activities	0.4
None, I don't want to use mobile payments	60.1
Refused to answer	0.8
Number of respondents	**1,973**

Table C.46. Rate the security of SMS (text messaging) for mobile banking

Percent, except as noted

Q46	
Very safe	10.2
Somewhat safe	23.4
Somewhat unsafe	14
Very unsafe	10.9
Don't know	40.4
Refused to answer	1.1
Number of respondents	**2,291**

Table C.47. Rate the security of using a mobile browser for mobile banking

Percent, except as noted

Q47	
Very safe	9.8
Somewhat safe	27.8
Somewhat unsafe	15.1
Very unsafe	9.6
Don't know	36.4
Refused to answer	1.4
Number of respondents	**2,291**

Table C.48. Rate the security of using an application downloaded from phone's mobile app store for mobile banking

Percent, except as noted

Q48	
Very safe	9.4
Somewhat safe	25.3
Somewhat unsafe	13.2
Very unsafe	9.4
Don't know	41
Refused to answer	1.8
Number of respondents	**2,291**

Table C.49. Rate the overall security of mobile banking for protecting respondent's personal information?

Percent, except as noted

Q49	
Very safe	9.2
Somewhat safe	24.9
Somewhat unsafe	14.5
Very unsafe	11.5
Don't know	38.5
Refused to answer	1.4
Number of respondents	**2,291**

Table C.50. If available, would respondent use mobile phone for any of the following purposes?

Percent, except as noted

Q50	
Buy things at the point of sale	22.4
Track your finances on a daily basis	24.5
Organize, track and store gift cards, loyalty and reward points	20.6
Compare prices when shopping	39
As a ticket for buses, trains, or subways	17.2
As a key to enter your house	16.6
Purchase tickets to events	18.4
As a membership card (such as museums, gym, etc.)	23
To receive and manage discount offers and coupons	27.3
To receive offers and promotions based on where you are (i.e., you walk into a store and a coupon appears on your mobile phone for a product sold there)	26
As a form of photo identification	16.4
None of the above	41.3
Refused to answer	1.3
Number of respondents	**2,291**

Table C.51. Respondent is willing to allow mobile phone to provide location to companies so that they can offer discounts, promotions, or services based on location

Percent, except as noted

Q51	
Strongly agree	4.1
Agree	26.4
Disagree	27.8
Strongly disagree	40.3
Refused to answer	1.4
Number of respondents	**2,291**

Table C.52. Respondent is willing to allow mobile phone to provide personal information to companies so that they can offer discounts, promotions, or services based on this information

Percent, except as noted

Q52	
Strongly agree	2.5
Agree	14
Disagree	31.9
Strongly disagree	49.7
Refused to answer	1.8
Number of respondents	**2,291**

Table C.53. Has respondent used mobile phone to comparison shop over the Internet while at a store?

Percent, except as noted

Q53	
Yes	41.6
No	57.8
Refused to answer	0.6
Number of respondents	**1,149**

Table C.54. Has respondent ever used a barcode scanning application on mobile phone while shopping at a retail store to find the best price for an item?

Percent, except as noted

Q54	
Yes	31.9
No	67.4
Refused to answer	0.7
Number of respondents	**1,149**

Table C.55. Has respondent ever scanned a QR code to obtain information about a product on mobile phone?

Percent, except as noted

Q55	
Yes	34.4
No	65
Refused to answer	0.5
Number of respondents	**1,149**

Table C.56. Has using a mobile phone to compare prices while shopping at a retail store ever changed where respondent made purchase?

Percent, except as noted

Q56	
Yes	64.2
No	35.8
Number of respondents	**554**

Table C.57. Has respondent ever used mobile phone to browse product reviews or get product information while shopping at a retail store?

Percent, except as noted

Q57	
Yes	43.9
No	54.8
Refused to answer	1.3
Number of respondents	**1,149**

Table C.58. Has reading product reviews on mobile phone while shopping at a retail store ever changed which item respondent ended up purchasing?

Percent, except as noted

Q58	
Yes	70.1
No	28.9
Refused to answer	1.1
Number of respondents	**484**

Table C.59. In the past 12 months, has respondent used mobile phone to check account balance or available credit before making a large purchase?

Percent, except as noted

Q59	
Yes	64.2
No	34.5
Refused to answer	1.3
Number of respondents	**571**

Table C.60. When respondent used mobile phone to check account balance or available credit before making a large purchase, did respondent decide not to buy that particular item?

Percent, except as noted

Q60	
Yes	52.8
No	46.5
Refused to answer	0.7
Number of respondents	**337**

Table C.61. How likely would respondent be to use mobile contactless payments?

Percent, except as noted

Q61	
I already use it	1.3
Very likely	7.6
Likely	19.4
Unlikely	26.5
Very unlikely	43.5
Refused to answer	1.7
Number of respondents	**2,291**

Table C.62. How likely does respondent think it is that mobile contactless payments will become a major form of payment in the next five years?

Percent, except as noted

Q62	
Very likely	15.2
Likely	35.1
Unlikely	13
Very unlikely	11.8
Don't know	23.5
Refused to answer	1.5
Number of respondents	**2,291**

Table C.63. How much responsibility does respondent have for maintaining the household budget and managing household income?

Percent, except as noted

Q63	
None or almost none	10.4
Some	11.5
Shared equally with other household members	26.7
Most	11.8
All or almost all	38.5
Refused to answer	1.1
Number of respondents	**2,600**

Table C.64. How much responsibility does respondent have for paying monthly bills?

Percent, except as noted

Q64	
None or almost none	15.1
Some	11
Shared equally with other household members	19.1
Most	10.2
All or almost all	42.9
Refused to answer	1.7
Number of respondents	**2,600**

Table C.65. Where 1 is "extremely dissatisfied" and 10 is "extremely satisfied," how satisfied is respondent with finances?

Percent, except as noted

Q65	
1	6.3
2	4.4
3	6.6
4	8.3
5	16.9
6	11.8
7	15.4
8	16.8
9	7.3
10	4.6
Refused to answer	1.6
Number of respondents	**2,600**

Table C.66. Has respondent set aside emergency or rainy day funds that would cover expenses for 3 months?

Percent, except as noted

Q66	
Yes	46.6
No	51.8
Refused to answer	1.6
Number of respondents	**2,600**

Table C.67. How often does respondent use a spending plan or budget for your expenses?

Percent, except as noted

Q67	
Never	12.2
Rarely	17
Sometimes	28.5
Often	22.3
Always	18.8
Refused to answer	1.2
Number of respondents	**2,600**

Table C.68. Does anyone in household use a program or website to track household finances?

Percent, except as noted

Q68	
Yes	21
No	77.5
Refused to answer	1.5
Number of respondents	**2,600**

Table C.69. Does respondent use mobile phone to track purchases and expenses?

Percent, except as noted

Q69	
Yes	9.8
No	88.8
Refused to answer	1.4
Number of respondents	**2,291**

Table C.70. Method(s) respondent uses to track purchases and expenses on mobile phone?

Percent, except as noted

Q70	
A mobile application for expense tracking	36.3
A spreadsheet	11.9
Online (using the web browser to access a website)	34.5
Send text messages	9.8
Take notes in a notepad or word processor	18.5
Other	10.3
Refused to answer	6.5
Number of respondents	**173**

Table C.71. In a typical month how often does respondent use mobile phone to track purchases and expenses?

Percent, except as noted

Q71	
0	9.4
1	8.3
2	12.3
3	10.9
4	6.8
5	7.2
6	2.6
7	0.9
8	3.9
9	0.3
10	9.1
12	0.3
14	0.3
15	3.7
20	5.2
30	2.6
31	0.5
45	0.9
50	0.7
Refused to answer	14.2
Number of respondents	**173**

Table C.72. What kind of text alerts does respondent receive?

Percent, except as noted

Q72	
Low-balance alerts	63.2
Payment due alerts	37.4
Saving reminders	8.1
Fraud alerts	39.1
Other	20.4
Refused to answer	1.5
Number of respondents	**168**

Table C.73. Most recently, which of the following actions did respondent take after receiving the alert?
Percent, except as noted

Q73	
Transferred money into the account with the low balance	53.7
Deposited money into the account with the low balance	23.5
Reduced my spending	35.7
None of the above	13.6
Number of respondents	**109**

Table C.74. Has receiving payment due alerts improved respondent's ability to pay bills on time?
Percent, except as noted

Q74	
Yes, by a lot	49.8
Yes, by a little	26.8
No	20.3
Refused to answer	3.1
Number of respondents	**64**

Table C.75. Does respondent have any regular payments that are directly deposited into bank account?
Percent, except as noted

Q75	
Yes	74.5
No	23.9
Refused to answer	1.6
Number of respondents	**2,419**

Table C.76. Does respondent have any regular payments automatically withdrawn from bank account?
Percent, except as noted

Q76	
Yes	52.9
No	45.9
Refused to answer	1.3
Number of respondents	**2,419**

Table C.77. Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account?
Percent, except as noted

Q77	
More than today	4
Exactly the same	8.5
Less than today	59.4
Don't know	26.5
Refused to answer	1.6
Number of respondents	**2,600**

Table C.78. Considering a long time period (for example, 10 or 20 years), which asset normally gives the highest return?
Percent, except as noted

Q78	
Savings accounts	4.2
U.S. government bonds	13.8
Stocks	42.8
Don't know	37.6
Refused to answer	1.5
Number of respondents	**2,600**

Table C.79. If an investor who only owns two stocks right now decides to instead spread their money among many different assets (i.e., more stocks, add bonds, add real estate), their risk of losing money on their entire portfolio will
Percent, except as noted

Q79	
Increase	11.8
Decrease	43.4
Stay the same	7.3
Don't know	35.8
Refused to answer	1.7
Number of respondents	**2,600**

Table C.80. If you were to invest $1,000 in a stock mutual fund for a year, it would be possible to have less than $1,000 when you withdraw your money.
Percent, except as noted

Q80	
True	61
False	8.9
Don't know	28.3
Refused to answer	1.8
Number of respondents	**2,600**

Table C.81. Suppose you owe $1,000 on a loan and the interest rate you are charged is 10% per year compounded annually. If you don't make any payments on this loan, at this interest rate, how many years would it take for the amount you owe to double?
Percent, except as noted

Q81	
Less than 5 years	14.3
Between 5 to 10 years	37
10 years or more	18.2
Don't know	28.8
Refused to answer	1.7
Number of respondents	**2,600**

Table C.82. Imagine that your car breaks down and requires $400 worth of repairs in order to drive again. Based on your current financial situation, how would you pay for this expense? If you would use more than one method to cover this expense, please select all that apply.
Percent, except as noted

Q82	
Put it on my credit card	36.2
With the money currently in my checking account or with cash	41.3
By taking money out of my savings	16.6
Using money from a bank loan or line of credit	2.3
Use overdraft on my bank account	1.8
By borrowing from a friend or family member	11.6
Using a payday loan or deposit advance	2.5
By pawning something	2
By selling something	4.2
I wouldn't be able to pay for the repairs right now	15.8
Other	3.4
Refused to answer	2.3
Number of respondents	**2,600**

Table C.83. Which of the following statements comes closest to describing the amount of financial risk that you are willing to take when you save or make investments?
Percent, except as noted

Q83	
Take substantial financial risks expecting to earn substantial returns	3.8
Take above average financial risks expecting to earn above average returns	12.6
Take average financial risks expecting to earn average returns	37
Not willing to take any financial risks	44.3
Refused to answer	2.2
Number of respondents	**2,600**

Table C.84. Suppose that you are the only income earner in the family. Your doctor recommends that you move because of allergies, and you have to choose between two possible jobs. The first would guarantee your current total family income for life. The second is possibly better paying, but the income is also less certain. There is a 50-50 chance the second job would double your total lifetime income and a 50-50 chance that it would cut it by a third. Which job would you take—the first job or the second job?
Percent, except as noted

Q84	
First job	75.5
Second job	21.2
Refused to answer	3.3
Number of respondents	**2,600**

Table C.85. Suppose the chances were 50-50 that the second job would double your lifetime income and 50-50 that it would cut it by 20 percent. Would you take the first job or the second job?
Percent, except as noted

Q85	
First job	71.7
Second job	27.8
Refused to answer	0.5
Number of respondents	**2,004**

Table C.86. Suppose the chances were 50-50 that the second job would double your lifetime income, and 50-50 that it would cut it in half. Would you take the first job or the second job?

Percent, except as noted

Q86	
First job	44
Second job	55.2
Refused to answer	0.8
Number of respondents	**528**

Table C.87. Suppose the chances were 50-50 that the second job would double your lifetime income and 50-50 that it would cut it by 75 percent. Would you take the first job or the second job?

Percent, except as noted

Q87	
First job	62.6
Second job	36.3
Refused to answer	1.1
Number of respondents	**302**

Table C.88. Suppose the chances were 50-50 that the second job would double your lifetime income and 50-50 that it would cut it by 10 percent. Would you take the first job or the second job?

Percent, except as noted

Q88	
First job	60.3
Second job	38.6
Refused to answer	1.1
Number of respondents	**1,464**

Summary Statistics for Demographics

Table C.89. Summary statistics for demographics: Full sample

	Mean	Standard deviation
Age	46.8447	16.885
Male	0.4808	0.4997
Female	0.5192	0.4997
Ages 18–29	0.209	0.4066
Ages 30–44	0.258	0.4376
Ages 45–60	0.2756	0.4469
Ages over 60	0.2574	0.4373
Less than high school	0.1211	0.3263
High school degree	0.2982	0.4576
Some college	0.2895	0.4536
Bachelor's degree or higher	0.2912	0.4544
White, non-Hispanic	0.6698	0.4704
Black, non-Hispanic	0.1148	0.3188
Other and two or more races, non-Hispanic	0.0727	0.2597
Hispanic	0.1427	0.3498
Less than $25,000	0.2603	0.4389
$25,000–$39,999	0.2042	0.4032
$40,000–$74,999	0.1857	0.3889
$75,000–$99,999	0.1317	0.3382
Greater than $100,000	0.2181	0.4131
Married	0.4974	0.5001
Not married, widowed, divorced, or living with partner	0.5026	0.5001
Northeast	0.18	0.3842
Midwest	0.2176	0.4127
South	0.3703	0.483
West	0.2321	0.4222
Employed	0.5417	0.4984
Unemployed but in labor force	0.1117	0.315
Not in labor force: retired, disabled, or other	0.3467	0.476
Observations	2,600	

Table C.90. Summary statistics for demographics: Smartphone users

	Mean	Standard deviation
Age	40.1448	14.9043
Male	0.4866	0.5
Female	0.5134	0.5
Ages 18–29	0.3096	0.4625
Ages 30–44	0.3356	0.4724
Ages 45–60	0.2316	0.422
Ages over 60	0.1233	0.3289
Less than high school	0.0729	0.2601
High school degree	0.2459	0.4308
Some college	0.3144	0.4645
Bachelor's degree or higher	0.3668	0.4821
White, non-Hispanic	0.6535	0.476
Black, non-Hispanic	0.1113	0.3146
Other and two or more races, non-Hispanic	0.0774	0.2673
Hispanic	0.1578	0.3647
Less than $25,000	0.1752	0.3803
$25,000–$39,999	0.1637	0.3701
$40,000–$74,999	0.1938	0.3955
$75,000–$99,999	0.1485	0.3557
Greater than $100,000	0.3188	0.4662
Married	0.5274	0.4995
Not married, widowed, divorced, or living with partner	0.4726	0.4995
Northeast	0.188	0.3909
Midwest	0.1696	0.3755
South	0.3814	0.486
West	0.2609	0.4393
Employed	0.6948	0.4607
Unemployed but in labor force	0.1077	0.3102
Not in labor force: retired, disabled, or other	0.1974	0.3982
Observations	1,149	

Table C.91. Summary statistics for demographics: Feature phone users

	Mean	Standard deviation
Age	52.71	16.0989
Male	0.4574	0.4984
Female	0.5426	0.4984
Ages 18–29	0.1131	0.3169
Ages 30–44	0.1979	0.3986
Ages 45–60	0.3167	0.4654
Ages over 60	0.3723	0.4836
Less than high school	0.1266	0.3326
High school degree	0.3341	0.4719
Some college	0.2824	0.4504
Bachelor's degree or higher	0.2569	0.4371
White, non-Hispanic	0.7198	0.4493
Black, non-Hispanic	0.1019	0.3026
Other and two or more races, non-Hispanic	0.0631	0.2433
Hispanic	0.1152	0.3194
Less than $25,000	0.289	0.4535
$25,000–$39,999	0.2343	0.4237
$40,000–$74,999	0.1913	0.3935
$75,000–$99,999	0.1315	0.3381
Greater than $100,000	0.1539	0.361
Married	0.506	0.5002
Not married, widowed, divorced, or living with partner	0.494	0.5002
Northeast	0.1776	0.3823
Midwest	0.2532	0.4351
South	0.3655	0.4818
West	0.2037	0.4029
Employed	0.438	0.4964
Unemployed but in labor force	0.1046	0.3062
Not in labor force: retired, disabled, or other	0.4574	0.4984
Observations	1,126	

Table C.92. Summary statistics for demographics: All mobile phone users (feature and smartphone)

	Mean	Standard deviation
Age	46.2059	16.6981
Male	0.4715	0.4993
Female	0.5285	0.4993
Ages 18–29	0.2151	0.411
Ages 30–44	0.2691	0.4436
Ages 45–60	0.2717	0.4449
Ages over 60	0.2441	0.4296
Less than high school	0.1009	0.3012
High school degree	0.2875	0.4527
Some college	0.2983	0.4576
Bachelor's degree or higher	0.3133	0.4639
White, non-Hispanic	0.6828	0.4655
Black, non-Hispanic	0.1067	0.3087
Other and two or more races, non-Hispanic	0.0733	0.2607
Hispanic	0.1372	0.3442
Less than $25,000	0.2291	0.4204
$25,000–$39,999	0.1977	0.3984
$40,000–$74,999	0.1918	0.3938
$75,000–$99,999	0.1419	0.349
Greater than $100,000	0.2395	0.4269
Married	0.5182	0.4998
Not married, widowed, divorced, or living with partner	0.4818	0.4998
Northeast	0.1825	0.3864
Midwest	0.2094	0.407
South	0.3753	0.4843
West	0.2327	0.4227
Employed	0.573	0.4948
Unemployed but in labor force	0.1063	0.3083
Not in labor force: retired, disabled, or other	0.3207	0.4668
Observations	2,291	

Cross-Tabulations for Consumers' Use of Mobile Phones

Table C.93. Do you own or have regular access to a mobile phone (cell phone)?

Percent, except as noted

Age categories	Yes	No	Number of respondents
18–29	89.3	10.7	388
30–44	90.5	9.5	611
45–59	85.5	14.5	760
60+	82.2	17.8	841
Number of respondents	**2,291**	**309**	**2,600**

Table C.94. Is your mobile phone a smartphone?

Percent, except as noted

Age categories	Yes	No	Number of respondents
18–29	75.1	24.9	350
30–44	65.2	34.8	554
45–59	44.7	55.3	665
60+	26.8	73.2	706
Number of respondents	**1,149**	**1,126**	**2,275**

Table C.95. Do you own or have regular access to a mobile phone (cell phone)?

Percent, except as noted

Race/ethnicity	Yes	No	Number of respondents
White, non-Hispanic	88.4	11.6	2,005
Black, non-Hispanic	80.6	19.4	201
Other, non-Hispanic	86.4	13.6	95
Hispanic	83.4	16.6	227
2+ races, non-Hispanic	92.1	7.9	72

Table C.96. Is your mobile phone a smartphone?

Percent, except as noted

Race/ethnicity	Yes	No	Number of respondents
White, non-Hispanic	50	50	1,771
Black, non-Hispanic	54.7	45.3	167
Other, non-Hispanic	57.2	42.8	80
Hispanic	60.2	39.8	192
2+ races, non-Hispanic	58.8	41.2	65
Number of respondents	**1,149**	**1,126**	**2,275**

Table C.97. Do you own or have regular access to a mobile phone (cell phone)?

Percent, except as noted

Education	Yes	No	Number of respondents
Less than high school	72.2	27.8	199
High school	83.6	16.4	749
Some college	89.4	10.6	739
Bachelor's degree or higher	93.3	6.7	913
Number of respondents	**2,291**	**309**	**2,600**

Table C.98. Is your mobile phone a smartphone?

Percent, except as noted

Education	Yes	No	Number of respondents
Less than high school	38.9	61.1	140
High school	44.8	55.2	626
Some college	55.1	44.9	665
Bachelor's degree or higher	61.2	38.8	844
Number of respondents	**1,149**	**1,126**	**2,275**

Table C.99. Do you own or have regular access to a mobile phone (cell phone)?

Percent, except as noted

Income group	Yes	No	Number of respondents
Less than $25,000	76.3	23.7	510
$25,000–$39,999	84	16	496
$40,000–$74,999	89.6	10.4	502
$75,000–$99,999	93.4	6.6	379
Greater than $100,000	95.2	4.8	713
Number of respondents	**2,291**	**309**	**2,600**

Table C.100. Is your mobile phone a smartphone?

Percent, except as noted

Income group	Yes	No	Number of respondents
Less than $25,000	40.1	59.9	384
$25,000–$39,999	43.5	56.5	416
$40,000–$74,999	52.8	47.2	454
$75,000–$99,999	55.5	44.5	347
Greater than $100,000	69.6	30.4	674
Number of respondents	**1,149**	**1,126**	**2,275**

Cross-Tabulations for Consumers' Use of Mobile Banking and Mobile Payments

C. 101.a. Cross-tabulations for consumers' use of mobile banking by age, race, gender, education, and income: Full sample

Mobile banking

Use of mobile banking in the past 12 months by age

Age categories	Yes	No	Total
18–29	38.6	15.1	21.5
30–44	33.7	24.3	26.9
45–59	19.4	30.1	27.2
60+	8.3	30.6	24.4
Number of respondents	571	1,709	2,280

Use of mobile banking in the past 12 months by race

Race/ethnicity	Yes	No	Total
White, non-Hispanic	63	70.4	68.3
Black, non-Hispanic	12.1	10.1	10.7
Other, non-Hispanic	6.3	5.6	5.8
Hispanic	16.8	12.6	13.8
2+ races, non-Hispanic	1.7	1.3	1.4
Number of respondents	571	1,709	2,280

Use of mobile banking in the past 12 months by gender

Gender	Yes	No	Total
Female	51.2	53.5	52.8
Male	48.8	46.5	47.2
Number of respondents	571	1,709	2,280

Use of mobile banking in the past 12 months by education

Education	Yes	No	Total
Less than high school	5.6	11.6	9.9
High school	22.3	31.3	28.8
Some college	35	28	29.9
Bachelor's degree or higher	37.1	29.2	31.4
Number of respondents	571	1,709	2,280

Use of mobile banking in the past 12 months by income group

Income group	Yes	No	Total
Less than $25,000	16.7	25.5	23
$25,000–$39,999	18.9	20.1	19.7
$40,000–$74,999	20.3	18.8	19.2
$75,000–$99,999	15.7	13.4	14
Greater than $100,000	28.4	22.3	24
Number of respondents	571	1,709	2,280

C. 101.b. Cross-tabulations for consumers' use of mobile payments by age, race, gender, education, and income: Full sample

Mobile payments

Use of mobile payments in the past 12 months by age

Age categories	Yes	No	Total
18–29	38.1	18.7	21.6
30–44	32.3	26	27
45–59	15.9	29	27.1
60+	13.7	26.2	24.3
Number of respondents	308	1,973	2,281

Use of mobile payments in the past 12 months by race

Race/ethnicity	Yes	No	Total
White, non-Hispanic	62.3	69.5	68.5
Black, non-Hispanic	13.1	10.2	10.6
Other, non-Hispanic	7	5.6	5.8
Hispanic	16.3	13.3	13.7
2+ races, non-Hispanic	1.2	1.4	1.4
Number of respondents	308	1,973	2,281

Use of mobile payments in the past 12 months by gender

Gender	Yes	No	Total
Female	51.3	53.1	52.8
Male	48.7	46.9	47.2
Number of respondents	308	1,973	2,281

Use of mobile payments in the past 12 months by education

Education	Yes	No	Total
Less than high school	10.7	9.8	9.9
High school	24.1	29.6	28.8
Some college	35.6	28.7	29.8
Bachelor's degree or higher	29.6	31.8	31.5
Number of respondents	308	1,973	2,281

Use of mobile payments in the past 12 months by income group

Income group	Yes	No	Total
Less than $25,000	26	22.4	23
$25,000–$39,999	21.7	19.4	19.8
$40,000–$74,999	18.5	19.3	19.2
$75,000–$99,999	12.3	14.3	14
Greater than $100,000	21.5	24.5	24
Number of respondents	308	1,973	2,281

C. 102.a. Cross-tabulations for consumers' use of mobile banking by age, race, gender, education, and income: Smartphone users

Mobile banking

Use of mobile banking in the past 12 months by age by smartphone users

Age categories	Yes	No	Total
18-29	38.2	24.4	31
30-44	35.3	31.7	33.4
45-59	19.8	26.3	23.2
60+	6.7	17.6	12.4
Number of respondents	517	628	1,145

Use of mobile banking in the past 12 months by race by smartphone users

Race/ethnicity	Yes	No	Total
White, non-Hispanic	63.5	66.9	65.3
Black, non-Hispanic	13.2	9.3	11.2
Other, non-Hispanic	6	6.4	6.2
Hispanic	15.6	16	15.8
2+ races, non-Hispanic	1.7	1.4	1.6
Number of respondents	517	628	1,145

Use of mobile banking in the past 12 months by gender by smartphone users

Gender	Yes	No	Total
Female	51.8	50.9	51.3
Male	48.2	49.1	48.7
Number of respondents	517	628	1,145

Use of mobile banking in the past 12 months by education by smartphone users

Education	Yes	No	Total
Less than high school	4.2	10.1	7.3
High school	22.3	26.6	24.6
Some college	34.7	28.6	31.5
Bachelor's degree or higher	38.8	34.7	36.6
Number of respondents	517	628	1,145

Use of mobile banking in the past 12 months by income group by smartphone users

Income group	Yes	No	Total
Less than $25,000	15.8	19	17.5
$25000–$39,999	18.3	14.6	16.4
$40,000–$74,999	20.4	18.4	19.4
$75,000–$99,999	15.3	14.5	14.9
Greater than $100,000	30.2	33.4	31.9
Number of respondents	517	628	1,145

C. 102.b. Cross-tabulations for consumers' use of mobile payments by age, race, gender, education, and income: Smartphone users

Mobile payments

Use of mobile payments in the past 12 months by age by smartphone users

Age categories	Yes	No	Total
18-29	39.7	28.2	31
30-44	34.7	33.2	33.6
45-59	16.4	25.2	23.1
60+	9.3	13.3	12.4
Number of respondents	257	889	1,146

Use of mobile payments in the past 12 months by race by smartphone users

Race/ethnicity	Yes	No	Total
White, non-Hispanic	61.2	66.6	65.3
Black, non-Hispanic	15	10	11.2
Other, non-Hispanic	7.4	5.8	6.2
Hispanic	15.2	15.9	15.7
2+ races, non-Hispanic	1.3	1.7	1.6
Number of respondents	257	889	1,146

Use of mobile payments in the past 12 months by gender by smartphone users

Gender	Yes	No	Total
Female	50.4	51.5	51.3
Male	49.6	48.5	48.7
Number of respondents	257	889	1,146

Use of mobile payments in the past 12 months by education by smartphone users

Education	Yes	No	Total
Less than high school	8.2	7	7.3
High school	24.2	24.7	24.6
Some college	37.6	29.3	31.3
Bachelor's degree or higher	30	38.9	36.8
Number of respondents	257	889	1,146

Use of mobile payments in the past 12 months by income group by smartphone users

Income group	Yes	No	Total
Less than $25,000	24.1	15.4	17.5
$25000–$39,999	19.2	15.4	16.3
$40,000–$74,999	19.3	19.4	19.4
$75,000–$99,999	13.6	15.3	14.9
Greater than $100,000	23.8	34.6	32
Number of respondents	257	889	1,146

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