Risk Perception, Risk Tolerance and Consumer Adoption of Mobile Banking Services

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Disclaimer

• The views expressed here do not necessarily reflect those of the Federal Reserve Board or Federal Reserve System
Motivation

- Mobile phones are ubiquitous and have the ability to affect consumer financial behavior
- The primary barrier to consumer adoption of mobile banking technology is perceived lack of security (Javelin Strategy & Research 2011)

- To empower consumers in decision making process
- To foster the financial inclusion of underserved populations
Research Question

• What is the potential for mobile banking to extend access to unbanked and underbanked individuals?

• How do consumers’ perception of the security risks of mobile banking, as well as their own personal level of risk tolerance, affect adoption of mobile banking?
Background: Mobile Phone Usage

• Less than 15% of Americans 18 years and older are without a mobile phone
  ▫ 91% of underbanked and 63% of unbanked have a mobile phone

• Almost 45% of the population uses a smartphone device
  ▫ 56.9% of underbanked and 26.3% of unbanked

• Over 80% of American smartphone owners access the Internet at least once a week
Background: Mobile Banking Usage

- Mobile banking has been adopted by 1 in 5 mobile phone users and 2 in 5 smartphone users.
- Advantages of mobile banking: accessibility, convenience, and personalization.
- Mobile bankers have significantly more interaction with their financial institution (Mintel 2012).
- May facilitate inclusion of unbanked and underbanked in mainstream financial system (Gross et al. 2012).
Security Concerns

• Recent data show that the primary barrier to consumer adoption of mobile banking technology is a perceived lack of security (Gross, Hogarth, and Schmeiser 2012)
• Personal information and finances at stake
• Primary concerns: hackers, call or data interception, and exposure of bank account information
Method: *Survey Data*

- Survey conducted by the Federal Reserve Board to assess consumers’ use of mobile banking
- Administered by Knowledge Networks to their online probability based sample
  - US residents ages 18 and older
  - Administered December 22, 2011 to January 9, 2012
  - Total of 2,290 respondents
  - Total of 85 questions
Method: *Dependent Variable*

- **Mobile banking usage**
  - **Definition of mobile banking:**
    - “Using 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 phone.”
  - “Have you used mobile banking in the past 12 months?”
    - Asked of the 1,994 respondents who owned a mobile phone
Method: *Independent Variables*

- Perception of Security Risk
  - “How would you currently rate the overall security of mobile banking for protecting your personal information?”
  - Very safe, Somewhat safe, Somewhat unsafe, Very unsafe, and Don’t Know
  - Coded into 3 categories: Safe, Unsafe, and Don’t Know
Method: *Independent Variables*

- **Individual Risk Aversion – 2 measures**
  - **Self-reported willingness to bear investment risk**
    - “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?”
      - Take substantial financial risks expecting to earn substantial returns
      - Take above average financial risks expecting to earn above average returns
      - Take average financial risks expecting to earn average returns
      - Not willing to take any financial risks
  - **Estimate of risk aversion level based on responses about financial gamble over a lifetime**
    - Risk tolerance value derived using the procedure outlined in Kimball, Shapiro, and Sahm (*2008*)
Method: Empirical Model

- Logit Model for mobile banking usage that controls for:
  - vector of indicators for the individual’s perception of the security risks
  - the individual level measures of risk aversion
  - vector of demographic characteristics including race, education, household income, marital status, gender, age, and employment status
- Estimated separately for all mobile phone users and smartphone only users
Key Findings

Controlling for demographic and other characteristics:

• Having a smartphone doubles the probability of using mobile banking
• Non-Hispanic Blacks and Hispanics are about 50% and 25% more likely to use mobile banking
• Younger people adopt mobile banking at much higher rates
  ▫ 18-29 year olds are twice as likely to adopt mobile banking as those 60 years and over
Key Findings

- People who perceive mobile banking as unsafe or don’t know how safe are about 90% less likely to use mobile banking

- Using both measures of risk aversion, people with a higher risk tolerance are much more likely to adopt mobile banking
  - More than a 50% higher adoption rates for the most risk tolerant people relative to the least risk tolerant people
Conclusions

- Those who believe that mobile banking is secure and protects their personal information are significantly more likely to adopt mobile banking technology than those who do not.

- More risk averse consumers, independent of their perception of the risk of mobile banking, are significantly less likely to adopt mobile banking technology.
Conclusions

• Assuming security concerns can be addressed, it appears to be significant scope to use mobile banking to expand access
  ▫ Unbanked and underbanked have ready access to mobile phones and even smartphones
  ▫ Expanded use of online/mobile banking may allow banks to provide lower cost accounts to underserved consumers and address reasons for being unbanked
Thank You

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