

Security and consumer adoption

- Experience affects opinion
- Opinions affect adoption

- But it's complicated—and incentives are important, for all participants



- **Consumer Experience**
- 5% of respondents reported a debit card lost or stolen; 5% reported a credit card lost or stolen.
- In each case about half reported fraudulent charges
- Most with fraudulent charges incurred no financial liability (99% for credit cards; 85% for debit cards)
- One-quarter of consumers reported that they or someone they knew well had been a victim of identity theft during the previous 12 months.

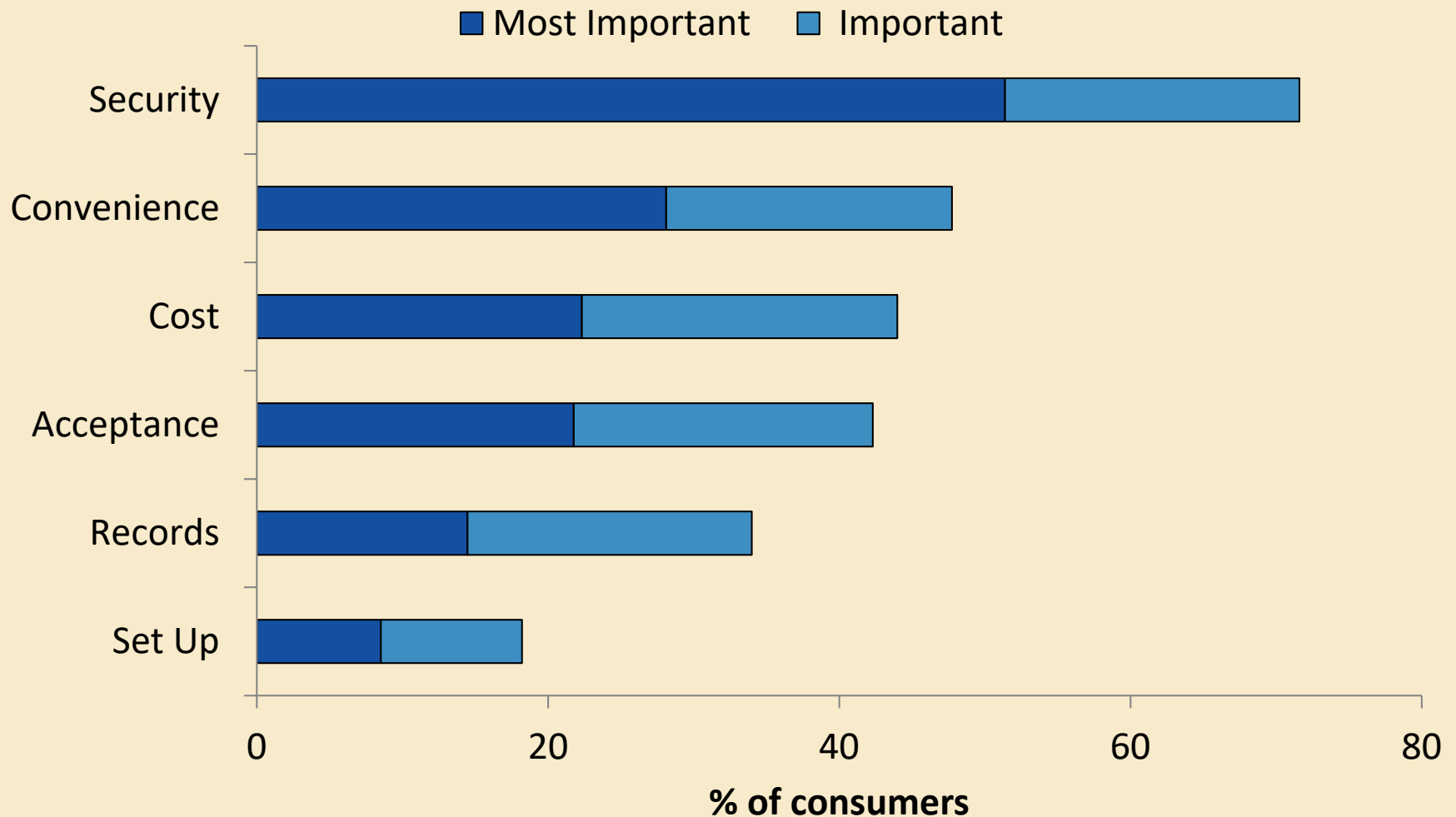
(based on Boston Fed survey 2015-17)



- Consumer attitudes towards payments platforms
- Credit cards get highest ranking for acceptance, convenience payments records, and security; worst ranking in terms of perceived costs.
- Cash gets highest ranking for setup and cost, scores poorly for security.
- Prepaid cards score similar to cash for security
- Debit cards score lower than credit cards.



- Importance of payment characteristics (2012)



- Security assessment
- In surveys, consumers claim security is the most important feature of a payment system
- While it affects usage, effects are not as strong as effects of cost or convenience assessment
- Some evidence that experience of identity theft affects payment behavior. Neighbors' experience of identity theft affects perceptions of security but limited effect on behavior.



- New technologies
- US has been slow to adopt mobile payments, but growth finally is apparent
- In 2017, one-third of all consumers made a mobile payment, compared with just one-fourth in 2015.
- Mobile apps adoption (ApplePay, Android Pay, Samsung Pay) grew from 40.4 percent in 2015 to 52.1 percent in 2017.

Perception remains that Mobile payments are “very risky”

- Other changes
- In 2017, 92.3 percent of U.S. consumers had a bank account and three-quarters of consumers used online banking; half used mobile banking.
 - However, most common use of mobile banking is to check account balances.
- In 2017, 44.9 percent of consumers had a nonbank payment account; the most common was PayPal. Paypal payments can be funded with credit or debit card, or with bank account; notably more than 20% of users pay with money stored with Paypal.



If perceptions have little force, perhaps it's due to incentives

- If risk of loss is mild, no incentive to avoid risky platforms or risky behaviors
- Applies to all participants



- Incentives, Security and Payments Platforms
- Interaction between end users, intermediaries, competing system operators, (and bad guys)
- Incentives affect each
- Spillovers of damage $^{-y+2}$ and spillovers of protective actions crucial to understanding behavior



- Example: “Eggs In One Basket”
- How many separate accounts do you hold?
 - On the one hand, each entails its own fixed costs (including security procedures)
 - On the other hand, damage from security breaches will be limited.
- How do your security precautions change with size or vulnerability of account?



- Effects on the broader system
- How do intermediaries and system providers' incentives differ from those of end users?
- Threat diversion vs threat reduction
- Threats tied to aggregate account holdings vs threats tied to frequency of use
- Users' incentives to employ outside technology (password managers, unsecured access channels, alternative systems)



• References on consumer payment activity

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