

Digital Integration and Financial Fragility: The Causal Impact of Mobile Banking on Overdraft Behavior

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MOTIVATION

- **Increasing financial vulnerability.**

Greater financial complexity increases consumer vulnerability with economic and psychological consequences, while financial education shows limited effectiveness (Salisbury et al., 2023; Fernandes et al., 2014).

- **Mobile banking apps as a central but theoretically ambiguous decision interface**

Banking apps are central to daily financial management and may improve decisions, but app-specific features can also reduce deliberation and worsen outcomes (French et al., 2020; Hadar et al., 2013).

- **Limited causal evidence.**

Despite widespread adoption, causal evidence on how mobile banking app adoption affects short-term financial behaviors such as overdraft usage remains scarce.

METHODS

- **Data**

A longitudinal panel of 50,000 customers from a major Spanish retail bank covering 2015–2020. During this period, 35.6% adopted the mobile banking app. The dataset includes monthly information on financial outcomes, channel usage, and customer demographics.

- **Key Variables**

Dependent variables: overdraft incidence and overdraft amount

Independent variable: app adoption

Moderators: app usage intensity, type of operations (query vs economic), type of device (smartphone vs tablet), branch usage intensity, use of traditional channels, customer characteristics (prior experience with online banking, age, tenure, education)

- **Identification Strategy**

We implement Coarsened Exact Matching to ensure pre-adoption balance between adopters and non-adopters, combined with a staggered Difference-in-Differences design that exploits variation in adoption timing. Estimates are obtained using a doubly robust approach to strengthen causal identification.

OBJETIVOS (OBJECTIVES)

- To identify the causal effect of mobile banking app adoption on short-term financial behavior, measured through overdraft incidence and magnitude.
- Assess whether the causal effect of mobile banking app adoption varies systematically across three underlying mechanisms:



- Digital usage integration
- Device-related cognitive constraints
- Customer financial sophistication.

PRINCIPALES RESULTADOS (MAIN RESULTS)

- **1. Overall Effect**

Mobile banking app adoption increases overdraft usage:

- Higher probability of incurring overdraft
- Larger overdraft amounts

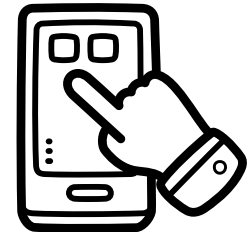
- **2. Heterogeneity in Effects**

Stronger effects when:

- Customers with high mobile app usage intensity
- Predominant smartphone use (vs. tablet)
- Customers with lower branch usage

Weaker effects among:

- Customers with longer relationship tenure
- More educated customers (in terms of incidence)
- Older customers
- Customers with higher branch usage



BIBLIOGRAFÍA PRINCIPAL (MAIN REFERENCES)

- Salisbury, L. C., Nenkov, G. Y., Blanchard, S. J., Hill, R. P., Brown, A. L., & Martin, K. D. (2023). Beyond Income: Dynamic Consumer Financial Vulnerability. *Journal of Marketing*.
- French, D., McKillop, D., & Stewart, E. (2021). Personal finance apps and low-income households. *Strategic Change*, 30(4), 367-375.
- Stango, Victor, and Jonathan Zinman. "Limited and varying consumer attention: Evidence from shocks to the salience of bank overdraft fees." *The Review of Financial Studies* 27.4 (2014): 990-1030.

