Credit Characteristics, Credit Engagement, and Financial Well-Being

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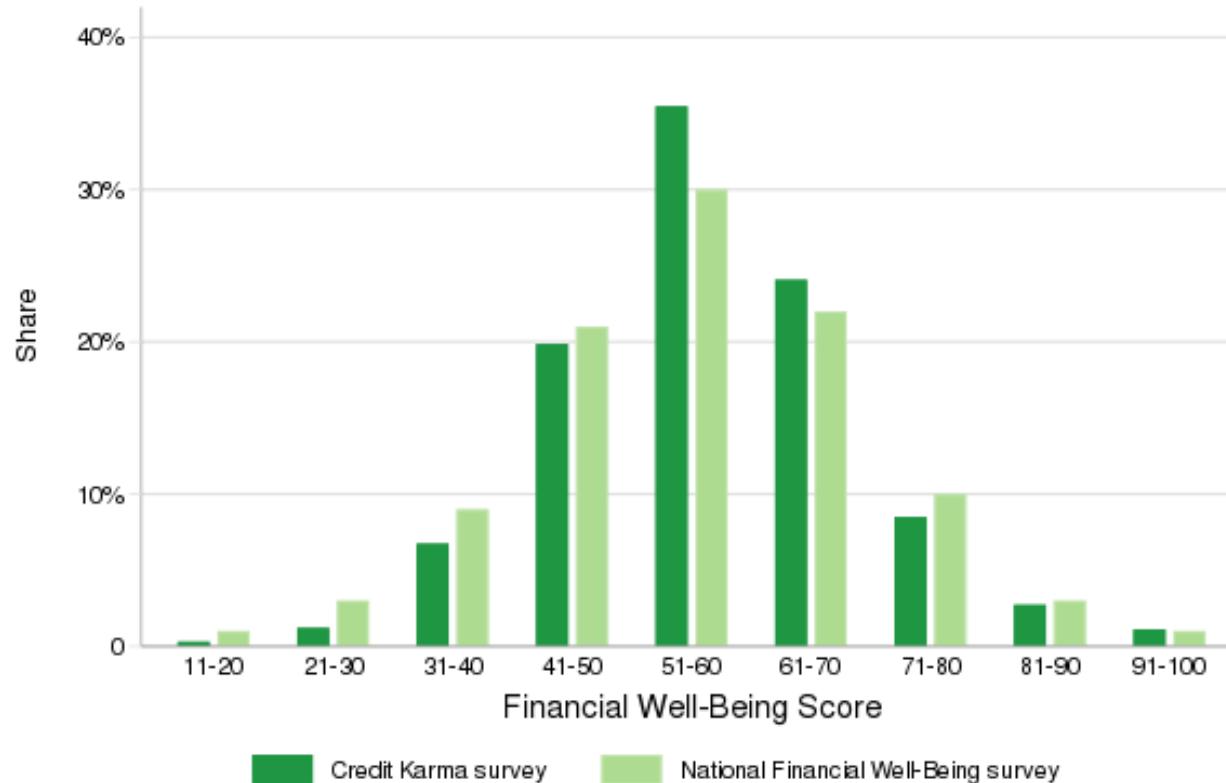
Credit Karma research pilot

- Collaboration between CFPB
  - Office of Innovation
  - Office of Research
  - Office of Financial Education/CEE, and
- Credit Karma – a consumer technology company with a large membership base of more than 90 million Americans
  - provides free access to credit scores, reports, and monitoring through web and mobile interfaces
  - provides members context into their financial profile and access to free tools, including the Credit Score Simulator, loan calculators, and a direct-dispute process to challenge erroneous credit-report entries
  - offers product recommendations tailored to fit members' profiles through partnerships with financial institutions

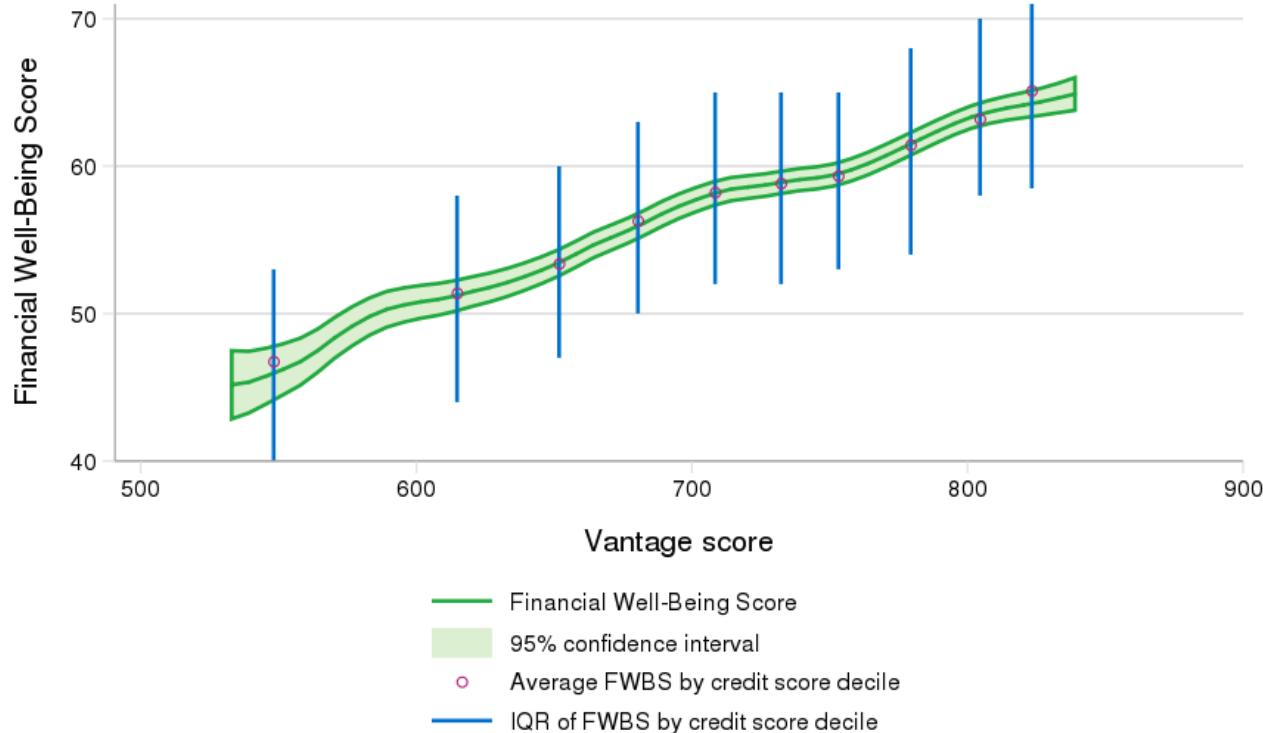cfpb Consumer Financial Protection Bureau

Research design

- CFPB's Financial Well-Being Scale administered to a sample of 3,000 Credit Karma users in 2017

- Objective: correlate **subjective** Financial Well-Being score with **objective** credit record and engagement measures

- Credit Karma provided CFPB with de-identified information:

  - FWB survey responses and basic demographics (age, geography)

  - Credit record variables (252 variables)

  - Engagement with CK platform and educational tools (75 variables)

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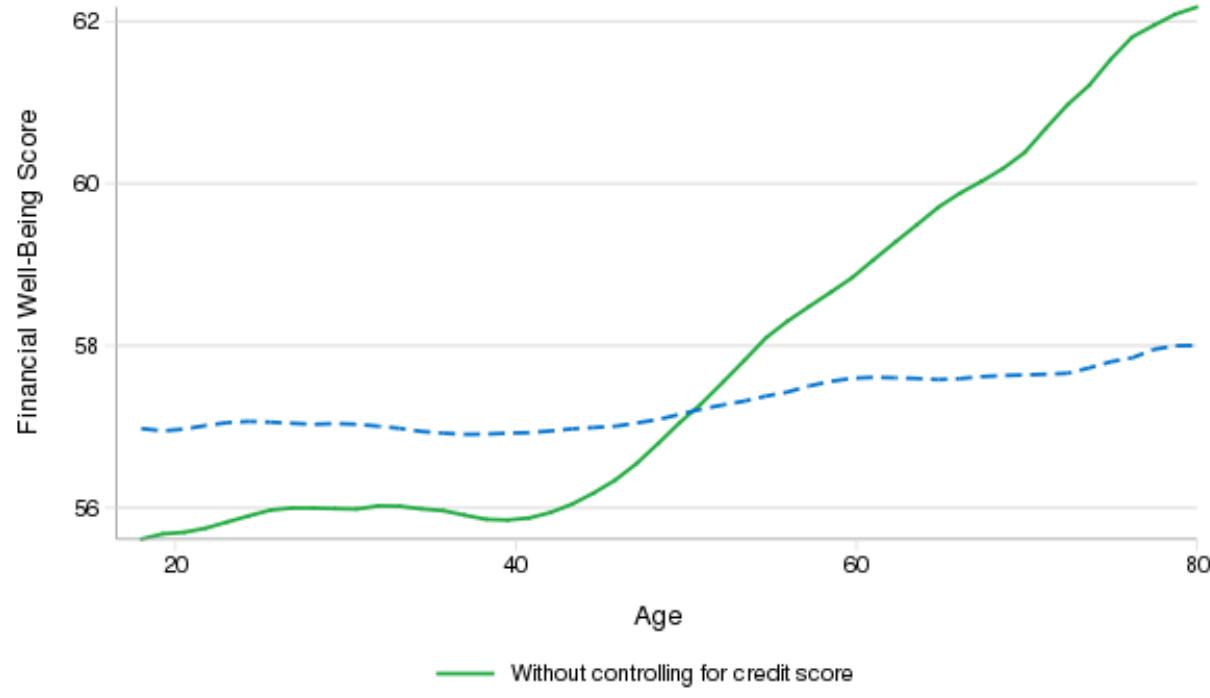# Financial Well-Being score distribution

Financial Well-Being score and credit score

Note: FWB Score is plotted as a local polynomial function of credit score with 95% confidence intervals and with average and IQR plotted by credit score deciles. Bottom 3 percent of credit score values are excluded due to noise in data.

Credit score explains 19.7% of variation in FWB score

Financial Well-Being score and age

Note: FWB Score is plotted as a local polynomial function of age, without and with controlling for credit score.

Controlling for credit score makes age effect go away

Methodology

300+ initial variables

↓

Data mining algorithm
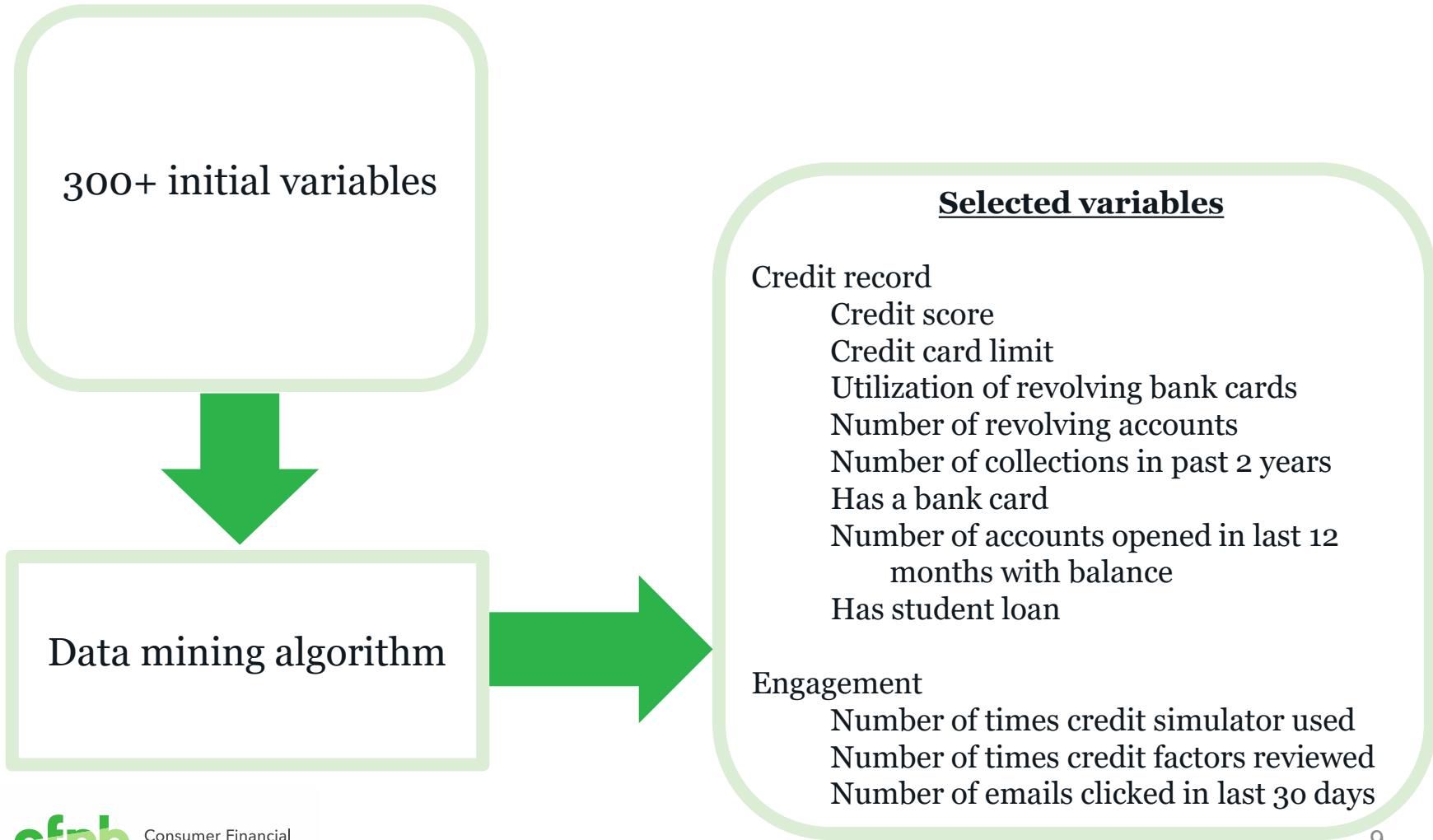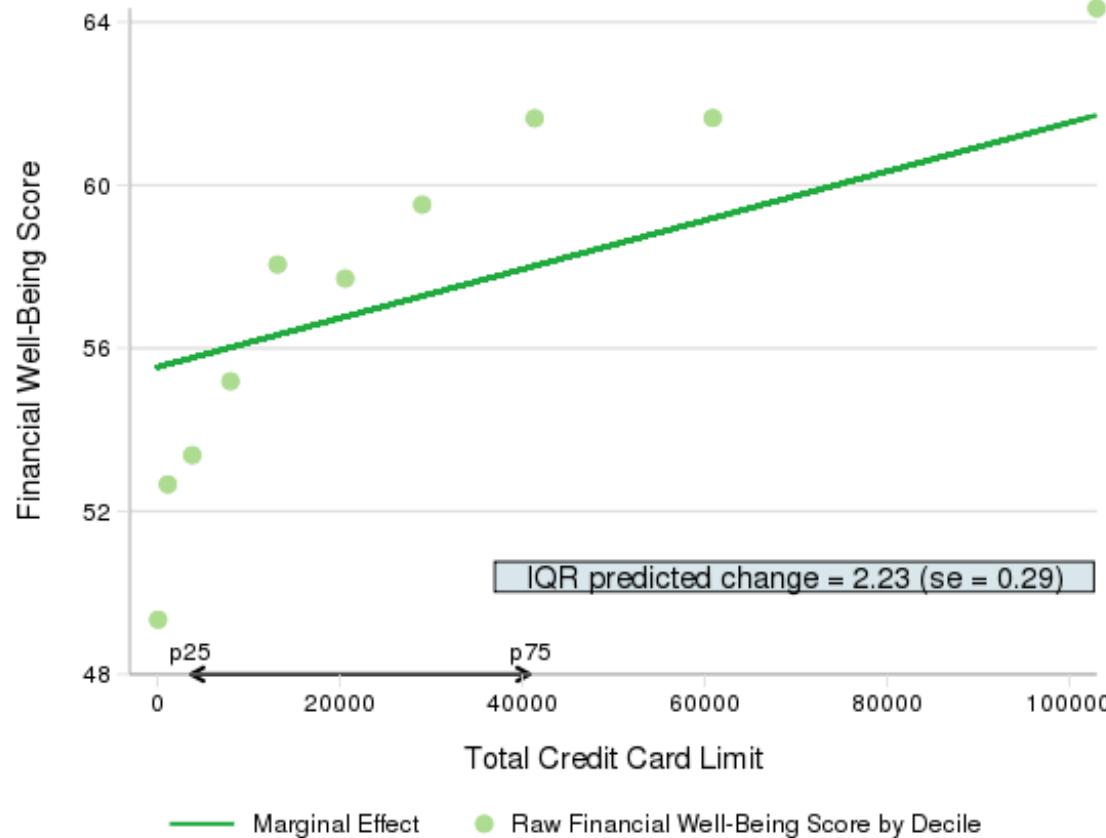
Algorithm: Supervised block-wise forward selection
- used in exploratory analysis
- focuses attention on variables that correlate strongly with FWB – not causal!
- uses thematic groupings of variables
- uses consideration sets, order independent within sets
- limits impact of outliers
- considers credit variables first, then engagement variables

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Methodology

300+ initial variables

↓

Data mining algorithm

→

Selected variables

Credit record
    Credit score
    Credit card limit
    Utilization of revolving bank cards
    Number of revolving accounts
    Number of collections in past 2 years
    Has a bank card
    Number of accounts opened in last 12
        months with balance
    Has student loan

Engagement
    Number of times credit simulator used
    Number of times credit factors reviewed
    Number of emails clicked in last 30 days

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Credit card limit

IQR predicted change = 2.23 (se = 0.29)

Marginal Effect ● Raw Financial Well-Being Score by Decile

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Correlation of credit record variables

Selected variable	Conditional correlation	Interquartile effect
Credit score	+	4.99
Credit card limit	+	2.23
Utilization of bank card	-	1.97
Number of revolving accounts	-	1.83
Number of collections in past 2 years	-	1.45
Has a bank card	+	2.48*
Number of accounts opened w/ balance	+	0.80
Has student loan	-	0.98*

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Number of times credit simulator used

Correlation of engagement variables

Selected variable	Conditional correlation	Interquartile effect
Number of times credit simulator used	+	0.42
Number of times credit factors reviewed	+	0.50
Number of emails clicked in last 30 days	-	0.53

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Interpretation

- Intriguing and novel findings – guidance on where to look more deeply

- Cross-sectional correlations

  - Not necessarily causality!

  - Observed correlations could be explained by

    - Causality

    - Reverse causality

    - Omitted variable bias (e.g. propensity to plan)

- Very promising results for engagement, but to establish causality robustly, we need

  - Experiments

  - Panel data – examine dynamic stability and effect of any experiments/interventions

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