Discussion of "Writing Quality and Soft Information in the GenAI Age: Evidence from Online Credit Markets"

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RICE | BUSINESS

ChatGPT Is Transforming Our Lives

Finance: Goldman Sachs CEO David Solomon says AI can write 95% of an IPO prospectus, 'last 5% now matters, rest is commodity'

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Life:

cooking suggestions, travel planning,
therapy, virtual friends

BEFORE CHATGPT

AFTER CHATGPT

What This Paper Does

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- Take Public **Data from Prosper.com** on Loan Applications & Outcomes
- Show **Textual Data** in Loan Application **Predicts** Whether Loan Funded
  - Extending Netzer, Lemaire & Herzenstein (2019, JMR)
- **Counterfactual** Replacing Loan Applicant's Textual Data With ChatGPT Version
  - ChatGPT Standardizes Text: ⬆ Writing Quality, ⬇ Information
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- Methodological Innovations
  - Combining 'old' (Heckman Correction) & 'new' (deep learning, multimodal transformer, LLMs) methods
  - **"Deep Heckman Correction"…**should we now call the old one, Shallow Heckman Correction?

Informative Signals

What Information Is Valuable?

Credit Scoring Model:

- Pr $(Y_{t+1} = 1) = f(X'_t \beta)$

- Look for features (x_t) that predict default (Y_{t+1})

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- Some features are deemed unfair and not allowed to be use (immutable characteristics)
  - Textual information seems fair game
  - **But maybe women write better than men? (disparate impact by gender not allowed, so standardization may be beneficial)**

- Technology that masks information, makes it harder to discriminate types

What Information Is Valuable?

- We may have a prior that advances in informational technology always help discriminating consumer types (i.e., extract more information from data)

- **Paper's innovation is highlighting that a technological advancement available to loan applicants (ChatGPT) reduces information available to lenders**

- **Connect to broader literature on masking information (& unintended effects)**

  e.g., Agan & Starr, 2018 QJE bans on employers asking for criminal histories;

  Bartik & Nelson, 2025 RESTAT bans on use of credit reports by employers;

  appendix of Gibbs, Guttman-Kenney, Lee, Nelson, van der Klaauw & Wang., JEL

  for cases in credit reporting

The Use of Textual Data

Data Comes from Prosper.com in 2007 to 2008

- 2006 to 2009 Prosper was an auction platform
  - Loan applicant would submit application with text
  - Lenders would consider the risk and decide whether to fund (how much, rate)
  - Applicant decides whether to accept offer

> Purpose of loan: This loan will be used to pay off an existing high interest loan and my student loan
> My financial situation: I am a good candidate for this loan because I do make my monthly payments on time, and all my accounts are current. My utility accounts are in good standing. I am not in a financial crisis, I am just trying to pave the way for an easier future
> Monthly net income: $1920
> Monthly expenses: $1550

- Since 2010, Prosper no longer works this way.
  - No auctions
  - Prosper now determines the risk and sets rates

Since 2010 (?), Prosper Doesn't Ask for Textual Information
- Loan Applicants Do Not Include Textual Information
- No Textual Information for Lenders/Investors to Use

Since 2010 (?), Prosper Doesn't Ask for Textual Information - Only Asks for Multiple Choice 'Loan Purpose'

2011

Since 2010 (?), Prosper Doesn't Ask for Textual Information - Only Asks for Multiple Choice 'Loan Purpose'   2023

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2025: I also asked ChatGPT.

"No, Prosper doesn't make you write 'why you want a loan'.

You simply pick a category to signal intended use of funds."

Suggestion: Paper Would Benefit From Demonstrating That This Is A **Real** Problem

- As far as I can tell, Prosper only ask for categories of loan purpose

- Are lenders using textual application data before/after ChatGPT?

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- Idea 1: Speak with Prosper.com
  - What have they done and why?
  - Incentives aligned between academics and platform to collaborate

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- Idea 2: Find other lenders that use textual data in loan applications.
  - Maybe it is not a thing in the U.S., but is important elsewhere?
  - One example I know of is tiny (and crazy) market for anonymous loans on reddit (Correira, Martins & Waikel (2024)

> Posted by [username] x hours ago
>
> [REQ] – ($350) (#St Louis, MO, USA), (Repay $400 by 4/22/2022), (PayPal, CashApp)
>
> Got overzealous with bills and thought I could be all caught up and boy I was very wrong. Thanks

Selection

Selection Into ChatGPT May Be Informative Signal Unobserved In Study

- ChatGPT counterfactual doesn't allow for **selection**

- **Is there Adverse or Advantageous Selection of borrowers into using ChatGPT?**

- **The type of consumer that selects into using ChatGPT may be more informative than the textual information itself**

  - **Sophisticated** consumers know how to use ChatGPT, and reveals their type
  - **Bad** consumers know they are bad but want to appear like good consumers

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- Detecting ChatGPT use by applicant may be more important to lenders than the text
  - Parallel to professors detecting student use of ChatGPT on exams

- Use of ChatGPT appears especially open to **fraud:**

- **Intentionally** ask ChatGPT how to reword to increase odds of loan being approved

- ChatGPT prompt **unintentionally** changes meaning

Thank You!

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