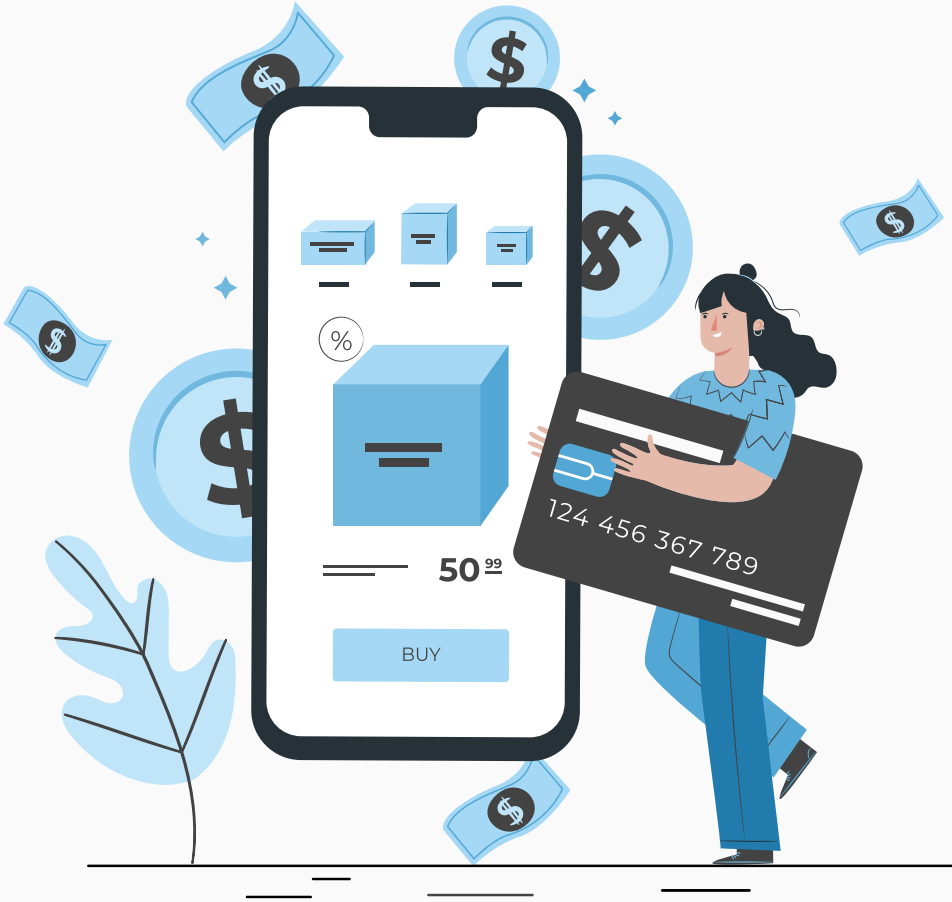
DIGITAL ADDICTION

AUTHORS: ALLCOTT, GENTZKOW, & SONG



TEAM INTRODUCTION

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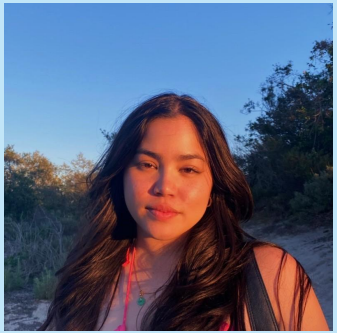

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AGENDA

- BACKGROUND & MOTIVATION
- IN-DEPTH EXAMINATION
- FLAWS & FURTHER RESEARCH
- RECAP & DISCUSSION

ADDICTION

Per ASAM, addiction is a “treatable, chronic medical disease involving complex interactions among brain circuits, genetics, the environment and an individual’s life experience.”

One of the key concepts developed on within this paper is addiction.

The problem is this is a very vague an inactionable definition.

ADDICTION

Paper authors Hunt Allcott, Matthew Gentzkow, and Lena Song defined addiction as the combination of 2 factors:

Habit Formation:
Today's consumption increases tomorrow's demand.

Self-control Problems:
People with self-control consume more or less today than they would have chosen for themselves in advance.

DIGITAL ADDICTION

Extending from addiction to digital addiction.

Digital addiction is the compulsive and excessive use of digital and internet-enabled devices, such as the use of social media or online video gaming, and associated psychological and physical harms.[1]

OTHER TERMS

Model allows for projection bias: people choose as if they are inattentive to habit formation.

People who perceive habit formation will reduce consumption if price increases in the future, projection bias dampens this effect.

OTHER TERMS, CONT'D

Subjective Well-Being (SWB) measures how people experience and evaluate life – often used as a measure of happiness.

Three components:

- Affect
- Life satisfaction
- Eudaimonia (sense of meaning and purpose)

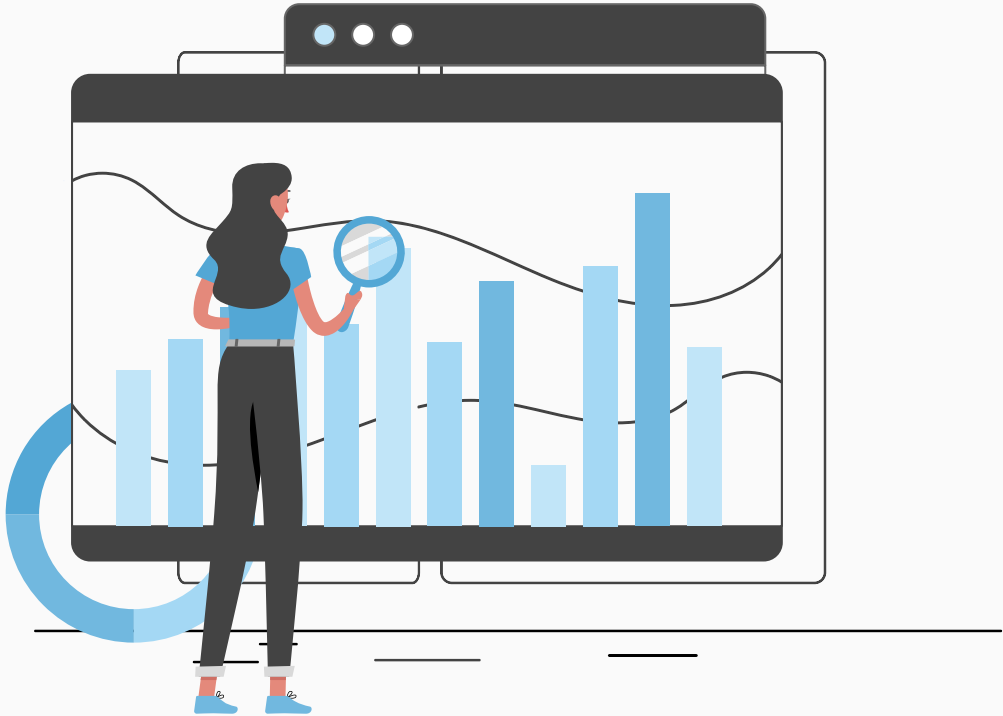
MOTIVATION

- Many researchers and others have theorized that smartphones, video games, and social media may be as harmful and addictive as cigarettes, alcohol, or gambling.
- Digital self-control is particularly interesting because it is one of the few domains where market forces have created commitment devices (app blockers, screen time) – results suggest additional unmet demand for these commitment devices.

MOTIVATION, CONT'D

- Should people take steps to limit the amount of time they spend on their smartphones?
- What is the best way to design digital self-control tools?
- How can companies align their products with consumer welfare?

IN-DEPTH PAPER EXAMINATION



SECTION OVERVIEW

BACKGROUND & MOTIVATION

EXPERIMENTAL DESIGN

RESULTS

CONCLUSIONS

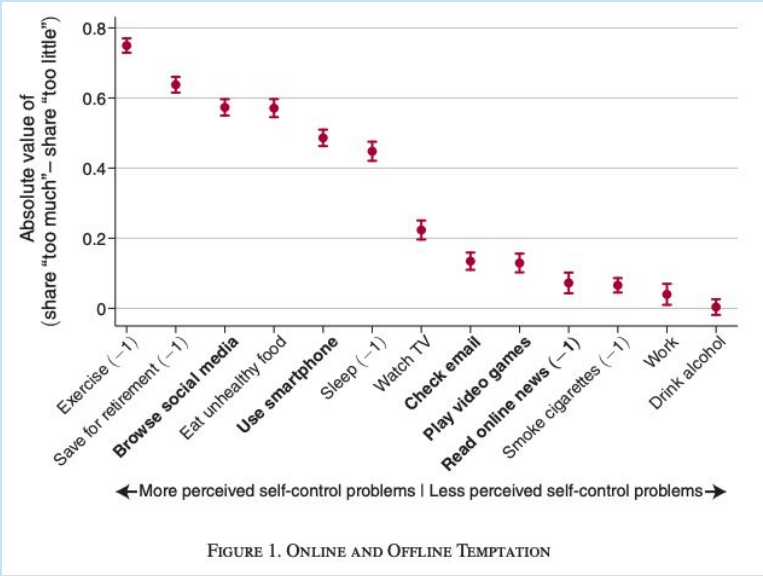


FIGURE 1. ONLINE AND OFFLINE TEMPTATION

~60% OF PEOPLE REPORT SPENDING "TOO MUCH" OR "TOO LITTLE" TIME ON SOCIAL MEDIA

HABIT FORMATION & SELF-CONTROL PROBLEMS

Habits: “As in Becker and Murphy (1988), habit formation means that today’s consumption increases tomorrow’s demand.”

Self-Control: “As in Laibson (1997) and others, self-control problems mean that people consume more today than they would have chosen for themselves in advance.”

EXPERIMENTAL DESIGN

- ~2000 American adults with Android smartphones were recruited with ads on Facebook & Instagram.
- Participants downloaded Phone Dashboard, software from the researchers that recorded screen time and could set time limits for apps.
- Participants took 4 surveys (baseline + 3 more) about smartphone use and asked them to estimate their smartphone use in the future. Surveys used multiple price lists and were incentivized.
- Products studied: Facebook, Instagram, Twitter, Snapchat, web browsers, and YouTube (FITSBY).

MULTIPLE-PRICE LIST EXAMPLE

Select one option per row	Option A	Option B
Selection 1	$1,000	Switch your Major
Selection 2	$500	Switch your Major
Selection 3	$250	Switch your Major
Selection 4	$100	Switch your Major
Selection 5	$20	Switch your Major

EXPERIMENTAL DESIGN

There were two Treatments:

1. Bonus Treatment: “The bonus treatment was a temporary subsidy of $2.50 per hour for reducing FITSBY use during the three weeks between surveys 3 and 4.”
2. Limit Treatment: “The limit treatment made available screen time limit functionality in Phone Dashboard. Participants in this group could set personalized daily time limits for each app on their phone, with changes effective the next day.”

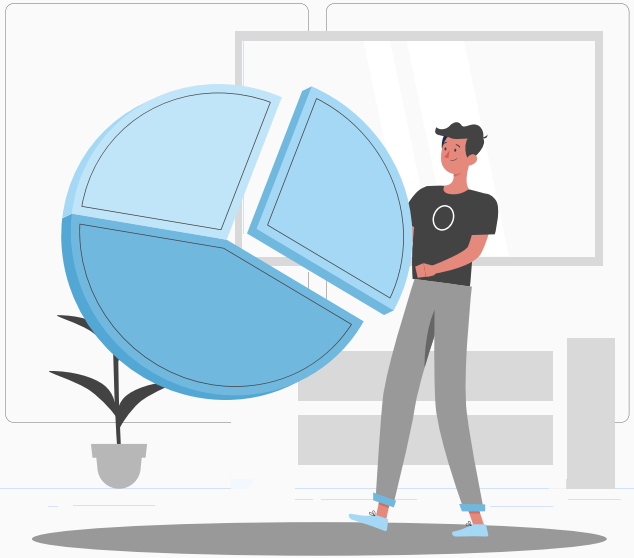
RESULTS: BONUS TREATMENT

- Participants in the bonus treatment reduced their average FITSBY use by 56 minutes per day when the $2.50 per hour incentive was active, a 39% reduction compared to the bonus control group.
- For the 3 weeks after the incentives were no longer offered, participants used FITSBY an average of 19 minutes less per day, and in the 3 weeks after that, 12 fewer minutes per day.

RESULTS: LIMIT TREATMENT

- Participants in the limit treatment reduced FITSBY use by 22 minutes per day over the 12 weeks of the experiment.
- 78% of them set the voluntary limits and continued using them throughout the experiment.

CONCLUSIONS

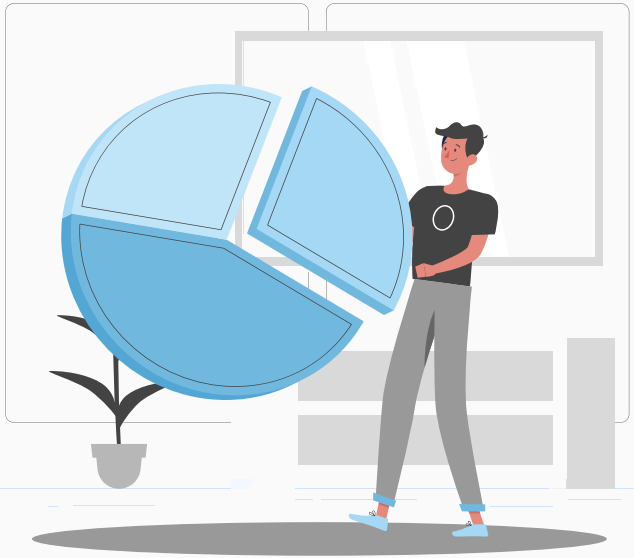


- The persistent effect of the bonus treatment after the payments stopped is good evidence that FITSBY use is generally habit forming.
- In the limit treatment, participants voluntarily imposed limits on themselves and used FITSBY less than their baseline, implying that FITSBY use does indeed involve self-control problems.

LIMITATIONS

- <u>Selection Bias</u> in participants:
  - Recruited with Facebook & Instagram ads.
  - Low attrition rate.
  - Only Android users.
- <u>Covid:</u> Does FITSBY use over quarantine represent how we behave now?

EXTENSIONS



- What underlying mechanisms generates the persistent bonus treatment effect?
- Why isn't there higher demand for commercial digital self control tools?
- Does the model broadly apply to use of social media in different situations?
  - Time of day, e.g. bed time might have drastically different utility functions.

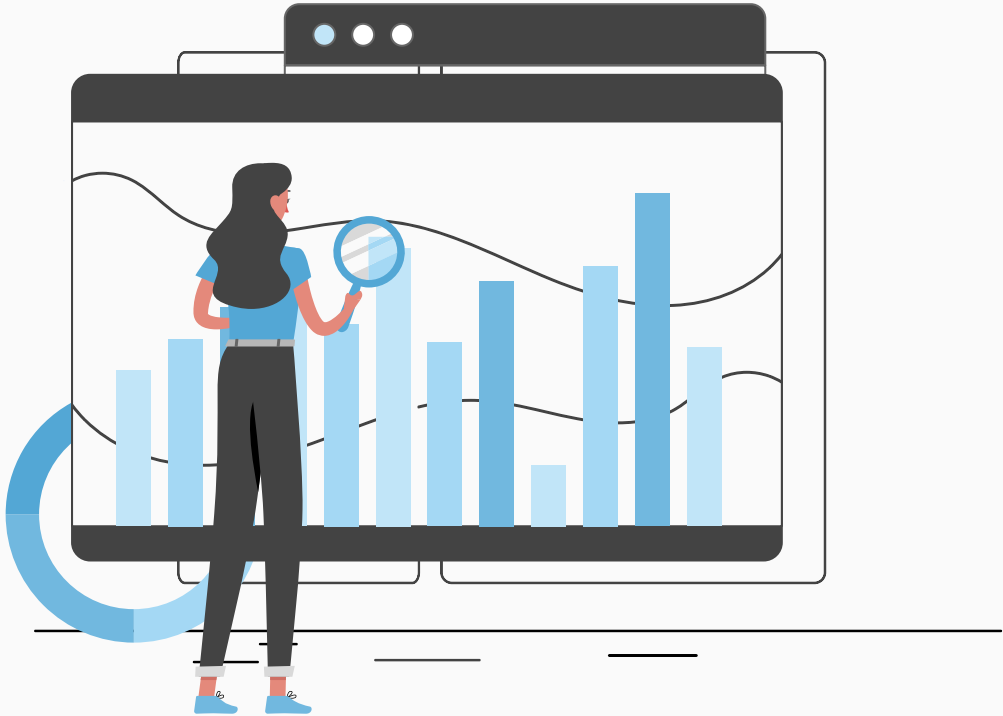
QUICK SUMMARY

- Formalized economic model of digital addiction.
- Conducted a randomized experiment with smartphone users focusing on popular apps (Facebook, Instagram, etc.).
- Examined the impact of habit formation and self-control problems in the context of FITSBY use.

QUICK SUMMARY

- **Both treatments:**
  - **Significantly reduce smartphone addiction indices.**
  - **Align ideal and actual screen time.**
  - **Improve subjective well-being (SWB).**
- **Applied model to estimate long-term effects → eliminating self-control problems could reduce FITSBY use substantially.**

DISCUSSION QUESTIONS



QUESTION ZERO

BY A SHOW OF HANDS, HOW MANY OF YOU HAVE GONE ON YOUR PHONE IN CLASS?

QUESTION ONE

WHAT QUESTIONS OR THOUGHTS DO YOU HAVE TO THIS PAPER?

QUESTION TWO

DO YOU RELATE TO THE FINDINGS IN THIS PAPER?

QUESTION THREE

WHAT DO YOU THINK ABOUT THE PROPOSED MODEL?

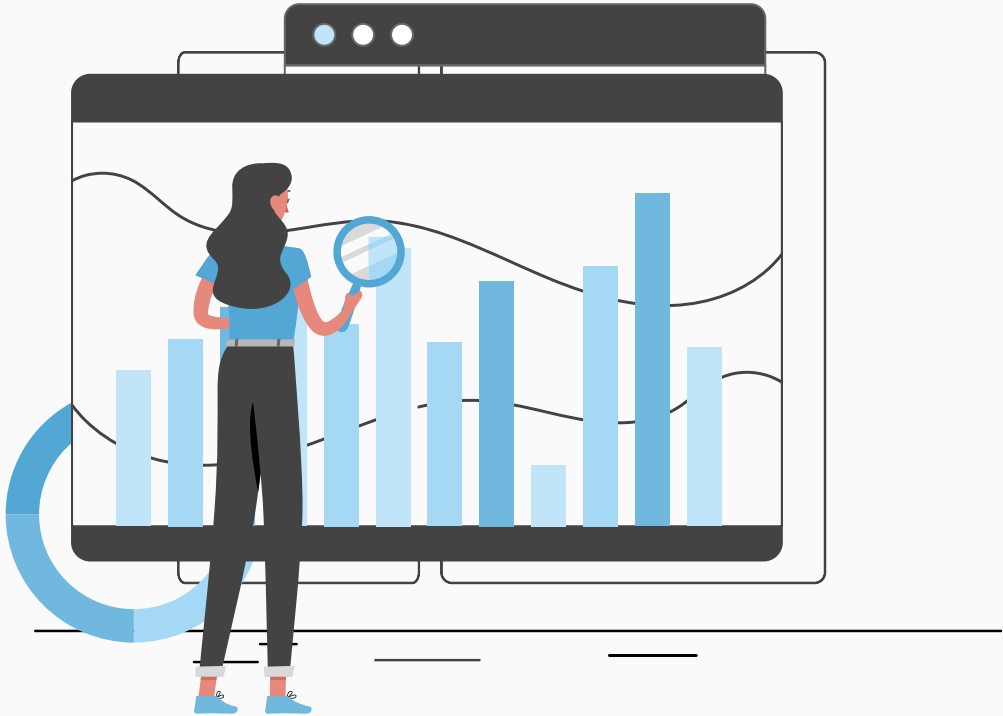
QUESTION FOUR

WHAT DO YOU THINK ABOUT THE FLAWS WE STATED? ARE THERE OTHERS?

QUESTION FIVE

WHAT DO YOU THINK ABOUT THE EXTENSIONS WE PRESENTED? ARE THERE OTHERS?

APPENDICES



APPENDIX

1. Defining Digital Addiction: Key Features from the Literature by Mohamed Basel Almourad, John McAleney, Tiffany Skinner, Megan Pleva, and Raian Ali