Consumer Strategies and Mobile Apps:
How do Consumers Use and Outsmart Algorithmic Platforms?

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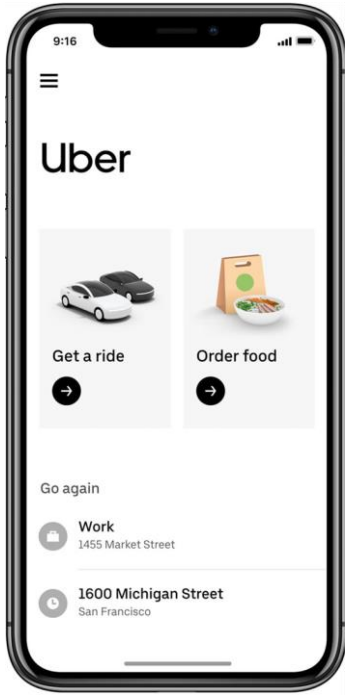
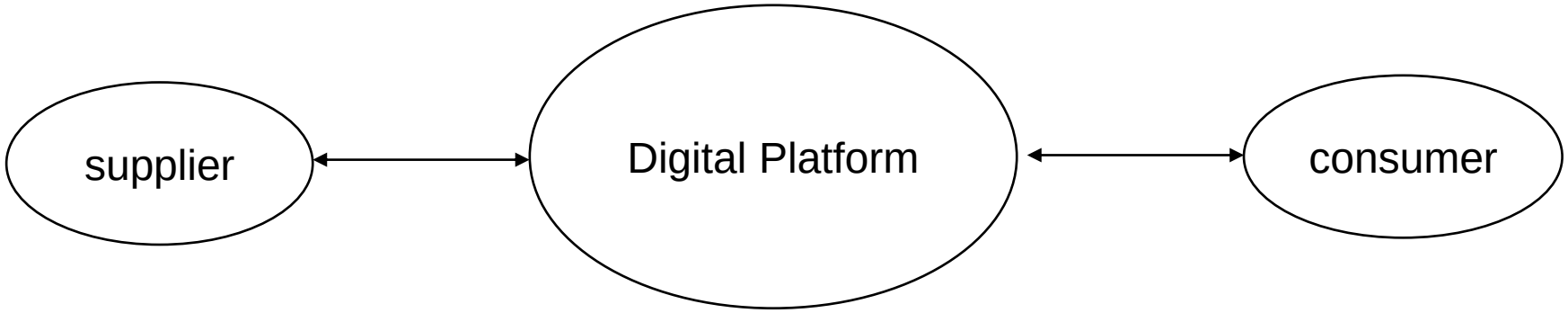
Background

Many influential mobile apps can be considered as “digital transaction platforms.”



Background

- Digital transaction platforms are matchmakers between suppliers and consumers. These firms employ algorithmic systems and explicit rules that encourage user adoption, reliance and rule compliance.



Sources : Rosenblatt and Stark 2016

Background

Platforms can control the ecosystem through several means:

- Algorithmic (matching, pricing, automatic penalties)
- Semi/non-algorithmic (managerial techniques, interface design)
- Formal (rules)
- Informal (etiquette, norms)

When faced with these means of control, consumers can still assert their own interests. They can innovate ways of using the platform creatively.

Sources : Jarrahi et al 2019; Rosenblatt and Stark 2016; Wood et al 2019

Background

However, most of current research focus on the strategies of the platform service-providers or workers.

We know less about the strategies employed by consumers on digital platforms.

The Research Question

How do consumers try to maximise their interests when using algorithmic mobile apps?

What strategies do consumers employ to that end?

Method

In-depth semi-structured interviews

- 30 commuters in Manila: 22 (maximum variation sampling), 8 pilot (snowball sampling)
- **Maximum variation** sampling gives a comprehensive view of the phenomenon, and highlights important patterns that persist across heterogeneous respondents (Patton, 2002).
  - Home location
  - Place of work/study
  - Conventional demographic markers

Method

- Good variability
  - All aforementioned variables, especially location

- Coding Nvivo
  - First cycle: Detailed eclectic coding
  - Second cycle: Focused coding

Method

Direct observation and participation

- 10 months in Manila, 200+ trips, 1000+ km

Immersion in the Facebook groups of ride-hailing drivers and users.

Context

1. Very high population density

City	Population	Population Density
Manila (2015)	13 Million	21,000/km^2
London (2018)	9 million	5,500/km^2

Sources: Philippine Statistics Authority 2015, Home Office Statistics (2018)

Context

2. Inadequate Transport Infrastructure

- Manila has the worst traffic congestion in the world, per Waze
- Average commuting time: 1.5 – 3 hours per way

Sources: Azhar 2019; Biong 2019; Lopez 2019; Santos 2019

Manila, Philippines

Findings and Analysis

A Vignette

On commuting to school:

“There are so many of us… When the bus is approaching, people are already racing against each other toward the bus. I have to fight with the others to get in.

It's like I'm in *The Walking Dead*.”

- Rey, 20, university student

A Vignette

1.5 hours for

6 kilometers

Other means?

Taxi?

A Vignette

“It was past midnight… We had a baby with us, my sister's baby, but several taxi drivers kept on refusing us… They said they wouldn't get passengers in our area.

Then, my sister asked "How much?" They said PHP 500 (GBP 7.5)”

…We just waited for a bus… and got home 3 hours later.

- Rey, 20

* Higher than the daily minimum wage of PHP 481.

A Vignette

Since using ride-hailing platforms:

- He has avoided the Walking Dead

But:

- He does not understand the surge pricing system
- The surge price can be a financial burden
- He skips meals in school to afford Uber and Grab, enduring around 10 hours without a meal.

A Vignette

“I give up my allowance as an ‘offering’ for Uber.”

- Rey, 20, university student

Findings

1. Optimisation

RHP users attempt to discover the range of benefits from RHP under different conditions.

- How best to monitor and use promo codes
- Making arrangements with workmates to share costs
- Use of app features
- Placing markers a few meters away from landmarks

Findings

2. Mitigation

A type of discovery focused on disadvantages, persistent problems and probable risks, allowing users to pre-emptively mitigate these drawbacks.

- Communicating with drivers in advance
- Carrying multiple phones
- Using stock excuses
- Avoiding surge
- Defensive placement of pins

Findings

3. Boundary Hunting

Users test the shifting boundaries between what is prohibited, yet permissible, and the absolutely forbidden. Users then push the boundary ever slightly to their advantage.

- Inappropriate use of promo codes and discount privileges
- Baiting drivers into driving them beyond the app’s distance limits

Findings

3. Boundary Hunting

- Manipulating drivers to agree to more than 4 people booking 4-seater sedans; people with lots of luggage booking regular sedans vs SUV options.
  - “I have kids with me!”
  - “Other drivers agreed to this. Why can’t you?

Making drivers wait beyond the time allowed, exploiting the driver’s weak bargaining position. After all, drivers spend time and fuel to get to the pick-up point.

Findings

4. Straddling

Interviewees also experimented on practices that straddle both old and new, leading to synergistic use of these rival systems to accommodate different priorities.

- Discovery of public transport and platform combinations that value speed and cost
- And ones that value comfort and avoidance of surge pricing, etc

Findings

5. Heuristic Formation

After experimentation, interviewees arrived at stable mental templates for fast decision-making.

- PT vs RHP?
- Grab vs Uber vs GoJek vs Others?
- Regular Sedan vs Premium vs bike vs SUV?
- Which strategy to use for which situation?

Analysis

Platform Playbook: A typology

- The work surfaces 5 main types of consumer strategies against algorithmic control, with 18 sub-types.
- To my knowledge, in agreement with expert reviewers, this is the most exhaustive typology its kind.

Type	Definition
1. Optimisation	Figuring out how to maximise the benefits of using the algorithmic platform, including the leveraging of loopholes without directly violating platform rules.
Variation Discovery	Experimentation aimed at identifying how various platform features and real-life usage suit a user needs and contexts.
Perk Seeking	Searching for consumer perks across platforms, especially to take advantage of demand-side subsidies.
Cost Sharing	Sharing the cost of platform solutions with other consumers, which may sometimes involve re-organisation of routines to tap social networks who can share costs.
Proximity Exploitation	This is a type of algorithmic loophole exploitation, made possible when the algorithm allocates very specific output values to strictly defined input parameters, such that an input proximate yet sufficiently different to these parameters yield a very different output. Proximity exploitation refers to consumers choosing these proximate input parameters so that they gain similar service outcomes for far less cost, or some other advantage.
Pattern Exploitation	Finding patterns in the operation of the algorithm, and instead of manipulating input parameters (like in proximity exploitation), users adjust their behaviours so that they can synchronise their activities with the algorithm's patterns in ways that yield net benefits.

Ramizo, G. (2021). A Typology of Consumer Strategies against Algorithmic Control in Digital Platforms

Type	Definition
2. Mitigation	Identifying problems in using algorithmic platforms into daily life, and developing practices to offset these risks.
Pre-emptive communication	Directly communicating with human service providers to avoid mistakes in service delivery.
Personal compensation	Adjusting personal routines and habits to alleviate problems arising from platform use, provided that users gain net benefits despite the sacrifices made.
Multi-homing	Using multiple platforms to mitigate risks of dependence on a single platform.

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Type	Definition
3. Boundary-hunting	Exploiting the limits of enforceable platform rules. Consumers defy rules when enforcement depends on mutual social compliance, or when algorithms are unlikely to detect the violation.
Perk Piggybacking	Appropriating perks that are intended for other users.
Platform disintermediation	Consumers pass over the platform and directly transact with the supply side without the platform's involvement.
Baiting	Once the supply side spends enough time and resources on transaction, consumers manipulate the supply side to grant concessions even if doing so violates platform rules.
Normative Manipulation	Manipulating the supply side to make concessions by citing goodwill and sympathy.
Precedent Exploitation	Consumers cite precedents that happened despite algorithmic control, to frame their demands as legitimate even if those violate platform rules.

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Type	Definition
4. Straddling	Conditionally using non-platform solutions due varying situations and purposes.
Contingent Straddling	Shifting between the platform and non-platform alternatives to leverage their different advantages in ways that address current needs.
Hedged Straddling	Straddling between platform and non- platform solutions to lessen their vulnerability to the platform's negative aspects.

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Type	Definition
5. Heuristic formation	Turning proven strategies into mental templates to enable fast decision-making.
Decision Trees	Creating conditional action sequences that are likely to achieve desired outcomes.
Thresholds	Designating specific conditions as triggers for making a decision.
Horizon Scanning	The continual attempts to detect changes in the platform, and for potential improvements in practical strategies.

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Analysis

Implications on platform actors

- **Consumers**
  - Some consumers strategies sacrifice their other personal interests, just to sustain use of digital platforms.
- **Suppliers (Workers)**
  - Many consumer strategies directly harm workers, by increasing operational costs, time delays, and occupational stress.

Analysis

Impacts on platform actors: platform firm, consumers, workers

- **Platform Firm**
  - On the surface, consumer strategies can decrease platform revenues.
  - However, once consumers settles on strategies that give them a “better deal,” they have greater incentives to integrate the platform into daily life.
  - Thus, consumer strategies ironically soften platform control while also hardening consumer reliance on the platform – which is a win for the platform’s long term goals.

Implications for Businesses

1. **Consumers' attempt to outsmart the platform is not necessarily bad for business.**

   - Giving consumers some latitude encourages platform reliance.
   - Consumers play loosely with platform rules, such as exploiting algorithmic loopholes and perk piggybacking. It may seem like such user attempts to weaken platform control and maximise benefits need to be stamped down by platform companies.
   - However, these user strategies allow them to integrate the platform into the fabric of daily life and circumvent financial and situational issues that hinder platform use.

Implications for Businesses

2. If the platform is not solving a need, consumers will develop creative strategies that undermine the platform's rules.

- This is a signal to intensify user understanding through user research.
- Greater understanding of users can also provide the platform firm with an advantage over the competition.
- High incidence of user experimentation on the platform also indicates the need to review whether algorithms are equitable and suited for the intended purpose.

Implications for Businesses

3. Consider each consumer strategy for their effects on the platform ecosystem's health.

- My research shows very specific ways that consumers attempt to game algorithms and outsmart the platform's intended way of operation. It makes sense to war-game the platform's response to each of those consumer strategies. Are systems robust enough? What is the impact on the ecosystem's health?
- Some consumer strategies disadvantages workers. If the platform firm does not mitigate these, platform workers can conceivably shift to competitors that are better at protecting them.

Implications for Policy Makers

1. When people use platforms to solve social problems, solutions can lead to self-sacrificial choices

- Insofar as platforms solutions address problems caused by broader infrastructural and institutional shortcomings, consumers have strong reasons to use digital platforms even if doing so disadvantages other areas of their lives.
- This suggests that digital platforms are market products for particular use cases; these are not replacements to quality public services.

Implications for Policy Makers

2. Consider the possibility of significant worker exploitation by consumers

- Boundary-hunting strategies by consumers can create difficulties and unfair situations for workers.
- Policy makers in charge of worker welfare should look at such sources of insidious worker exploitation in the digital economy.

Summary

The paper contributes through the following:

- Presents the most comprehensive typology of consumer strategies in algorithmic digital platforms.
- Explains how these consumer strategies impact consumers, workers, and the platform firm.
- The typology and implications can have business and policy implications.
- This research can also inform future studies into user strategies, algorithmic systems, and digital platforms.

Thank you for listening.

Questions? Comments?

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