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# Designing a smartphone-based travel app to study the lives of digital platform workers in Chile

Adolfo Fuentes Ricardo González Valentina Salvatierra

Laboratory of Surveys and Social Analysis School of Communications and Journalism Universidad Adolfo Ibáñez

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### What is LEAS?

The laboratory aims to collect data on attitudes, behaviors and opinions of Chileans, through advanced technologies and methodologies, and to interpret them in the light of conceptual frameworks that allow us to account for the political, economic and social transformations of our country.

# Motivation: Surge in platform workers in Santiago, Chile



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<sup>(</sup>Bravo and Castillo 2021)

**24,5%** of households have used delivery platforms (i.e. Uber Eats) to order food/products in the last 24 months. Fuentes, González y Salvatierra (LEAS UAI)

# **Previous research? Methodological limitations**



### **Traditional Surveys**

Not much quantitative research in Chile. Fielbaum and Tirachini (2020): directly ask Uber and Cabify workers about weekly and daily working periods. Findings:

- Drivers value flexibility of this job, but most have routines that are somewhat fixed.
- (2) Long working periods are common, which represents a traffic safety risk.
- (3) Drivers are often exposed to dangerous situations on the streets.



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- (1) Depends on respondents' recall capacity after journey ends: overestimate duration, underestimate distance, and are not precise in reporting the start of each trip (Bricka et al.2009; Forrest y Pearson 2005; Kelly et al.2013; Stopher y Shen 2011; Wolf et al.2003).
- (2) Qualified as more tedious and less pleasant than using a smartphone app (Roddis et al 2019)

# Our solution: smartphone-based travel app



This data is complemented by **survey questions** on their subjective experience for each journey.

### **Two blocks of questions:**

- Profile survey at the beginning, collecting main demographics and attitudes towards their work and digital platforms.
- 1-3 questions after each journey, on characteristics of each journey (e.g. security).
- Questions are randomized to change every day.







# Our application: development process

The app will only work on Android, and will not be on the Play Store.

Signing in with email address

### Profile survey independent of the app

• Email address links data collected by the profile survey and the app.

### App collects:

- GPS locations every 20 seconds.
  - data are sent to a server where number of trips, distance and time are calculated
- Answers to questions asked at the end of each trip









# Our application: interface for brief survey

# questions





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# Measuring a journey

If a worker carries multiple packages, is that a single journey?

### Is every stop the end of a journey?

• What happens with traffic lights and traffic jams?

### Workers tap the beginning and the end of each journey

- It's "natural" to them
- Avoids the difficult programming of "stops".
- We can compare the precision of these self-reports with what is collected by the app
- Tapping the end triggers our questions



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### **Incentives and ethical concerns**



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### Incentives

- Why? Time demanding, requires participation with high frequency and over several days
- How? Different types available: before participation, conditional on response, unconditional, points system, lotteries
  - McCool et al. 2020: experiments on three incentive conditions in a travel app: 20 EUR after 7 days of data collection; 10 EUR after...;
    5 EUR at registration and 5 EUR at the end: response rates of 39.7%, 36.4% and 30.1% respectively.
- Gamification?

**Informed consent** 

**Why?** GPS location might be sensitive data for respondents

**How?** Explain what, how and why we are collecting these data at the beginning of the questionnaire, before completing the profile survey and downloading the app.

# Our application: What we wish to learn









- Characterize platform workers' working conditions with precision and granularity
- Working hours: schedule (AM/PM), days of the week, hours worked, length of journeys, etc.
- Subjective indicators related to the nature of the work:
  - Crime-related insecurity
  - Traffic safety risks
  - Relationship with customers and other delivery workers
  - o Job satisfaction

 $\rightarrow$  Incorporate **qualitative results** from Arturo Arriagada's research with Fairwork



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# Many thanks!

Adolfo Fuentes: A.I.Fuentes@sms.ed.ac.uk Ricardo González: ricardo.gonzalez.t@uai.cl Valentina Salvatierra: v.salvatierra@edu.uai.cl

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