

# Algorithmic decision-making in Employment

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# Brief introduction / key concepts

- Algorithmic decision making in employment has seen incremental growth across all business processes. (Bughin et al, 2018)
- The 'gig economy' refers to markets in short-term, on-demand, occasional, and typically task-based labour. (Tan et al, 2021)

# Motivation

- Why we chose the Gig economy for this topic? (Explain how it might be easier to relate to students, since X% of freelancers are students in EU .. or .. the visibility thanks to new platforms like Uber/Amazon Turk... etc)

Empirical Studies

# Microtargeting control: Explicating algorithmic control and nudges in platform-mediated cab driving in India.

- Algorithmic control is advanced form of direct and indirect control – track and monitor driver behavior continuously
- Algorithmic control is used to notify deviances in real time, implement the requisite training, and disciplinary action
- Nudge is an integral part of algorithmic control
- Information asymmetry between the platform and the drivers is leveraged to microtarget the workers

# APPLICANT PERCEPTIONS OF HIRING ALGORITHMS – UNIQUENESS AND DISCRIMINATION EXPERIENCES AS MODERATORS

- What is the state of the art?
- What was done, what were the results, limits.

# Research Design

# Research Design

- Hypothesis:
  - Food delivery drivers will be more satisfied with their work when transparent directives are coming from human
- Experimental two-factor design
  - IV1: Decision-making agent (Algorithm - Human)
  - IV2: Matching mechanism's transparency (Transparent - Opaque)
  - DV: Driver's satisfaction for work
- Mixed design
  - Participants: 100 Lieferando drivers in Aachen (Convenience sampling)
  - Participants are randomly divided to form two fifty-participants groups
  - Between- element: Each group is assigned to different mode of IV1
  - Within- element: Within each group, participants get different type of directions (IV2) each week



# Research design structure

		Group 1	Group 2
Subject of matching / Matching mechanism		Algorithm	Human
Week 1	Transparent	<ul style="list-style-type: none"><li>• Drivers receive directions by an algorithm</li><li>• Algorithm provides explanation of factors affected the decision</li></ul>	<ul style="list-style-type: none"><li>• Drivers receive directions by a human</li><li>• Human provides explanation of factors affected the decision</li></ul>
Week 2	Opaque	<ul style="list-style-type: none"><li>• Drivers receive directions by an algorithm</li><li>• Algorithm gives no explanation for each matching</li></ul>	<ul style="list-style-type: none"><li>• Drivers receive directions by a human</li><li>• Human gives no explanation for each matching</li></ul>

# Operationalization

- Two consecutive weeks are picked when the demand for food delivery is high (there is always enough orders for drivers)
- Drivers receive directions (matching an order) via push notification from an app (identical format for any scenario)
- Drivers answer questionnaire on satisfaction for work before and after each week of experiment
- Questionnaire example / Driver notification example (TBD)

# Advantages and Constraints

## Advantages

- Examine more specific element (transparency) of algorithmic decision that affects the driver's perception
- Can control external variables to ensure validity of the study

## Disadvantages

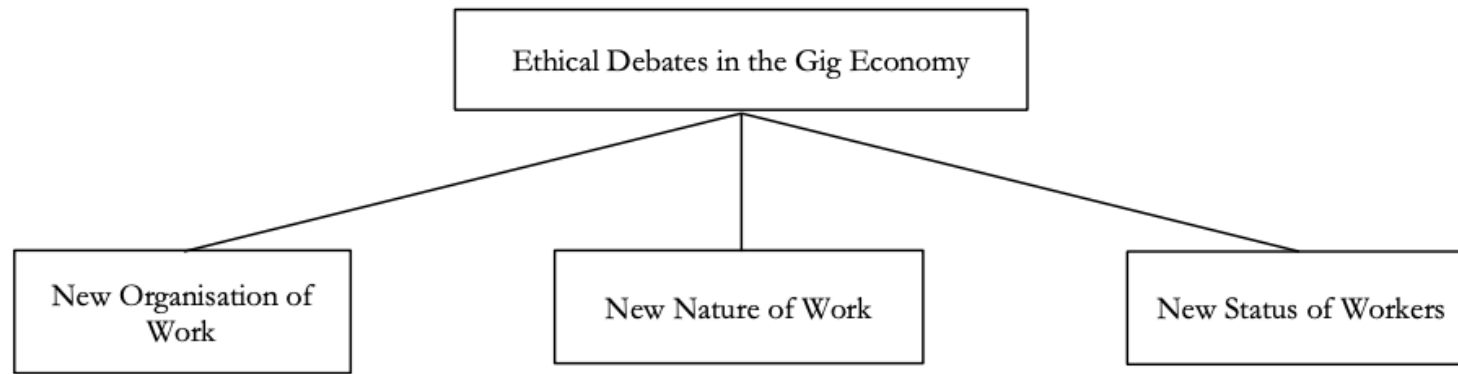
- Self-report has a limitation on its validity
- Time-related confounding variables can be found
- Instrumentation can happen on participant's self-report while answering the same questionnaire multiple times (total 4 times)

# Ethical Questions

# What are ethical questions that arise in this field and form these studies in particular?

- What different positions can we take on the topic/question from a moral perspective?
- From gig economy to open it algorithmic decision in employment

Figure 1: Main Categories of Ethical Debate and Key Concerns in the Gig Economy



# Discussion

# Prepare questions for group discussion

- And moderate group discussion
- Specific questions
- Slides for discussion ~ helping points
- Either based on the presentation or their own experiences
- If the algorithm is making all our decision, then what will be the value of work? ...
- If algorithm assigns work to gig-economy worker that it results in more money.. If something were to happen, because of over work -> who will take responsibility to the worker? Because he accept jobs... the company can take stance of using algorithm as a shield
- Decision-making in employment algorithmic.. Which to career pursue? When people are not sure about what they want to study? What's the meaning? Compare making decision by parents or the algorithm
- Whenever you apply the job, when the algorithm just looks at career, without any human inspection
- 'automated exploitation'
- Force a debate – making students to pick / assign them to either for/against the argument and come up with the argument

# References

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