Survey-based vs. Incentivized Experimental Measures

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Overview

1 Advantages and Disadvantages
   - Controlling the Environment
   - Feasibility
   - "Faking"
   - Availability

2 Experimental Validation of Survey Methods
   - Falk et al. (2014)
   - Other Examples
Controlling the Environment

- Incentivized Experimental Measures:
  - observe choices in controlled environment

- Surveys:
  - we do not know how subjects interpret the questions
  - we do not have information on the environment subjects face/how they perceive their environment
  - we do not know what reference points/norms subjects use
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- Examples:
  - How willing are you to take risks in the context of car driving? (GSOEP, Dohmen et al., 2011)
  - I see myself as someone who is curious about many different things. (Big 5, Openness to Experience, John and Srivastava, 1999)
  - I have been obsessed with a certain idea or project for a short time but later lost interest. (Short Grit Scale, Duckworth and Quinn, 2009)
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Feasibility

- Incentivized Experimental Measures:
  - expensive
  - difficult to administer: experimenter time, payments, interactive games

- Surveys:
  - cheap
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“Faking”

- respondents might have an incentive to “fake” traits
  - impression management
  - self-deception

- how important these factors are might depend on
  - personal characteristics
  - context of the survey
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- **easy to see which qualities might be valuable**

- **Example: I see myself as someone who**
  - can be moody (*neuroticism*)
  - worries a lot (*neuroticism*)
  - can be somewhat careless (*conscientiousness*)
  - tends to be lazy (*conscientiousness*)

- somewhat less problematic with incentivized experiments because real stakes are involved
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Availability

- Preference parameters
  - time discounting
  - risk aversion
  - social preferences
- survey-based measures exist
- experiments exist
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- **Time preferences:**
  - Choice between sooner and later payments, Marshmallow task
  - ’How patient are you on a scale from 1 to 10?’ (GSOEP)

- **Risk preferences:**
  - Lottery choice tasks, Devil’s Task, Balloon Analogue Risk Task
  - ’How willing are you to take risks in general on a scale from 1 to 10?’ (GSOEP)

- **Reciprocity:**
  - Ultimatum game, Gift exchange game
  - ’If someone does me a favor, I am prepared to return it.’ (GSOEP)
  - ’If I suffer a serious wrong, I will take revenge as soon as possible, irrespective of the cost.’ (GSOEP)
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  - Big 5:
    - Conscientiousness
    - Openness to new experience
    - Neuroticism
    - Extraversion
    - Agreeableness
  - Curiosity
  - Grit

- Survey-based measures exist

- For many personality measures there are no analogous experiments
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- **Curiosity**
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  - Incentivized Grit Task measuring choice of task difficulty, perseverance after negative feedback, goal setting and skill accumulation (Alan et al., 2015)
  - Anagram Task (Gerhards and Gravert, 2015)
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Beliefs

- Importance of beliefs for skill accumulation:
  - beliefs about productivity of effort/investments
  - beliefs about malleability of skills
  - beliefs about malleability of personality

- Can beliefs be seen as a ’skill’?

- Use of hypothetical scenarios to elicit beliefs
Beliefs

the life-changing magic of tidying up
the Japanese art of decluttering and organizing

marie kondo
Beliefs
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Experimental Validation of Surveys - Falk et al. (2014)

- develops experimentally-validated survey modules of economic preferences:
  - risk preference
  - time preference
  - altruism
  - trust
  - positive reciprocity
  - negative reciprocity

- subjects participate in experiments and fill out surveys (N=409)

Experimental Validation

Incentivized experiments treated as “gold standard” and survey questions are selected so that they have the greatest predictive power for behavior in the experimental task.
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- two incentivized experiments for each preference (measurement error)

- experiments and surveys conducted one week apart (desire to be consistent)

- order reversed for half the subjects

- questions that best predict behavior in experiments
  - quantitative question: hypothetical version of experiment
  - qualitative question: subjective assessment of general orientation

- explained variance
  - test-retest: $R^2$ of 0.33-0.66
  - surveys: $R^2$ of 0.15-0.47
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Explained variance by preference and number of module items

- Altruism
- Risk
- Time
- Trust
- Negative Reciprocity
- Positive Reciprocity

Number of module items:
- one
- two
- three
- four
- five
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- Validation performed in
  - a non-representative sample
  - in one country

- Structure of correlations between experimental measures and survey measures could differ
  - across individuals with different characteristics (e.g. IQ, age, gender, wealth)
  - across cultural contexts

- Subjects with different characteristics/in different environments might interpret questions differently
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Experimental Validation of Surveys - Other Examples

- Dohmen et al. (2011):
  - representative sample in Germany (N=450)
  - experimentally elicited risk attitudes correlate with 'willingness to take risk in general'

- Vieider et al. (2013):
  - ca. 3000 subjects in 30 countries (non-representative)
  - experimentally elicited risk/uncertainty attitudes and correlate with 'willingness to take risk in general'
  - size of correlation varies enormously across countries (-0.13 to +0.42)

- Vischer et al. (2013):
  - representative sample in Germany (N=839)
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Avenues for Research

- design incentivized experimental measures of non-cognitive skills
- develop experimentally-validated surveys
- gain better understanding of how survey-based measures and experimental measures correlate
  - for people with different characteristics
  - for people in different cultures
- gain better understanding of which measure is measuring what and how to decide between which measure(s) we want to use
Thank you!