IGL 2019
Global Conference

The place to inspire the innovation policies of the future

21-23 May 2019, Berlin, Germany
How to select who to fund: Improving selection processes to allocate public funding

Teo Firpo, Senior Researcher, Nesta (UK)
Goals for today
Agenda

– Funding ‘customer journey’
– Challenge
– Ways to experiment
– Designing an experiment
Agenda

- Funding ‘customer journey’
- Challenge
- Ways to experiment
- Designing an experiment
Context: what type of funding?

- R&D and science funding
- Selecting startups and businesses to support
- VCs and accelerators
- Grants for SMEs
Illustrative customer journey

What programme features do businesses value? (marketing trials focused on different features)

Can we encourage more/better applications? (eg nudging trials)

How best to provide applicants support to prepare applications?

Announce and promote funding call

Support applicants and receive applications

Assess proposals and select which to fund

Agree terms and finalise agreement

Funding drawdown

Next phase

Insufficient applications

Wrong projects selected

Projects/firms delayed or fail

Can the selection processes be improved? (eg behavioural biases)

Does providing written feedback adds value? (eg startup chile)

What will be done with applicants turned down?

Is there a need for additional support for funding recipients?

How to increase the commercialisation and/or application of the knowledge produced
Themes:

1. Getting the right applications
2. Assessing and selecting applicants
3. Measuring impact of the funding
4. Supporting applicants or funded projects
Getting the right applications

- Quality of applications
- Reach
- Diversity
POSSIBLE CHANGES:

1. Change the **language** that you use to communicate the call

2. Changing the **channels** you use to communicate the call

3. **Emphasising different aspects** of the call (do applicants care just about the funding? Flexibility? Prestige?)

4. Changing the applications **questions** or **supporting** applicants
Assessing and selecting applications

- How much information to ask
- What information to ask
- Who does the selection
- How many steps/people/etc
Table 50: Summary table: Organisation of peer review of and criteria used in Single project funding, 2017

<table>
<thead>
<tr>
<th>Country</th>
<th>Agency</th>
<th>DE</th>
<th>AT</th>
<th>CH</th>
<th>NL</th>
<th>UK</th>
<th>US</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reviewers</td>
<td>External and internal (1. and/or 2. stage of review)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>First-stage external reviewers only academics/researchers</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>First-stage external reviewers predominantly national</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>First-stage external reviewers national and international</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Second stage external reviewers predominantly international</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Second stage reviewers elected/determined by scientific community</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Second stage reviewers chosen by agency</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Review Process</td>
<td>First stage predominantly mail review</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>First stage predominantly panel review</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Second stage involves discussion of proposals among “review boards” (external researchers different to first stage-researchers discuss proposals)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Rights of Applicants</td>
<td>Applicants can suggest reviewer(s)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Applicants can refuse specific reviewers</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Applicants have no influence on reviewer selection</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Applicants can provide feedback to/appel against reviewers’ comments</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Review Criteria</td>
<td>Number of criteria</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Explicit weights for criteria</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Yes</td>
<td>Yes</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Special criteria for first time applicants</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Impact or applicability/utilisation of research is a criterion</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Source: Janger, Schmidt, & Strauss (2019)
Source: Graves, Barnett, & Clarke (2011)
“The challenge and opportunity of designing and executing field experiments for innovation systems”, Karim Lakhani keynote at IGL2018
“The challenge and opportunity of designing and executing field experiments for innovation systems”, Karim Lakhani keynote at IGL2018
POSSIBLE CHANGES:

1. Making process **shorter** or **breaking** it into steps

2. Changing the types of **questions**

3. Changing **who** assesses and who selects the applications

4. Changing the applications questions or **supporting** applicants

5. Using new methods and tools (data, algorithm, etc)
Measuring the impact of the funding

Effect of assessment/selection on outcomes

Different kinds of impact

Causal evidence
POSSIBLE CHANGES

1. Changing the assessment / selection process

2. Changing the type of funding

3. Funding more or fewer proposals

4. Changing the amounts of funding

5. Supporting funded projects
Supporting applicants or grantees

- Supporting (certain kinds of) applicants
- Supporting funded projects
- Providing feedback
POSSIBLE CHANGES:

1. Providing more feedback based on information already gathered

2. Collecting more data to share with applicants

3. Piloting support structures for applicants

4. Providing support to funded projects: training, mentoring, etc
Agenda

– Funding ‘customer journey’
– Challenge
– Ways to experiment
– Designing an experiment
Break out into table groups

4-5 people per table
Themes:

1. Getting the right applications
1. Assessing and selecting applicants
1. Measuring impact of the funding
1. Supporting applicants or funded projects
Introduction

Write down the most interesting / important challenge
2 minutes
Discussion

Agree on one challenge

8 minutes
Agenda

– Funding ‘customer journey’
– Challenge
– Ways to experiment
– Designing an experiment
How can you experiment?
Ways to experiment

1. Data
2. Messaging trials (AB testing)
3. RCTs
4. ‘Shadow’ experiments
1. Data
Data

Correlations
Simulations
Text analysis
Look at ‘near misses’
Disruption: \( D = p_i - p_j = \frac{n_i - n_j}{n_i + n_j + n_k} \)


Julian Kolev, Yuly Fuentes-Medel, Fiona Murray

NBER Working Paper No. 25759
Issued in April 2019
NBER Program(s): Productivity, Innovation, and Entrepreneurship

Source
Panel A—Average scores

Panel B—Adjusted Scores

Source: Gonzalez-Uribe & Reyes (2019)
RCT
2. Messaging trials (AB testing)
<table>
<thead>
<tr>
<th>Control</th>
<th>Thousands of businesses are benefiting from professional advice. Now Growth Vouchers cover half the cost of getting professional advice for your business. Click here to apply.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>Growth Vouchers is a government scheme that covers up to half the cost of getting professional advice for your business. <strong>The vouchers are only available for this financial year so don’t miss out.</strong> Click here to apply.</td>
</tr>
<tr>
<td>Chosen</td>
<td>You have been chosen to receive information about Growth Vouchers as we think you may be eligible for this scheme. Growth Vouchers cover half the cost of getting professional advice. Click here to apply.</td>
</tr>
<tr>
<td>Social</td>
<td><strong>Thousands of businesses are applying for Growth Vouchers.</strong> It’s a government scheme that covers up to half the cost of getting professional advice for your business. Click here to apply.</td>
</tr>
<tr>
<td>Money</td>
<td><strong>Growth Vouchers offer up to £2,000 from government to cover half the cost of getting professional advice for your business.</strong> Click here to apply.</td>
</tr>
</tbody>
</table>
Proportion of recipients clicking to apply for the Growth Vouchers scheme, Stage 1

<table>
<thead>
<tr>
<th></th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>1.56%</td>
</tr>
<tr>
<td>£2,000 Offer</td>
<td>1.69%</td>
</tr>
<tr>
<td>Others applying</td>
<td>1.72%</td>
</tr>
<tr>
<td>Time limited</td>
<td>1.88%</td>
</tr>
<tr>
<td>Chosen</td>
<td>2.37%</td>
</tr>
</tbody>
</table>
Control vs. treatment job posting in Gee (2018)'s experiment
Context: Message to social entrepreneurs after EoI

Messages:

1. Cash reward

1. Support

1. “Social”

Source: Ganguli, Le Coq & Huysentruyt (2018)
Feedback to applicants

3. Randomised experiments

Iacovone et al in Mexico.

McKenzie and Sansone (2017) on Machine Learning vs judges vs formulas
Funding by ‘triage’

- All Applicants
- Assessment Process
- Best Applicants
- Marginal Applicants
- Applicants would not fund
- 100% Selection
  - Pick by lottery
  - Not Funded
  - Treatment (funded)
  - Control (not funded)

For more on this, see Avin (2018)
4. ‘Shadow’ experiments
Application #123

Assessment Process A

Outcome A

Assessment Process B

Outcome B
Shadow experiments

Application #123

Funded

Funded?
How certain are evaluators of their scores?

47% of reviewers changed their score (0% in the control group)

Source: Teplitskiy et al (forthcoming)
Agenda

– Funding ‘customer journey’
– Challenge
– Ways to experiment
– Designing an experiment
Developing ideas to test

15 minutes
Group ideas

10 minutes
Thank you

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