



Innovation Growth Lab Global Conference 2017

by **nesta** 

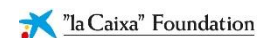
13-14 June 2017
Barcelona

 @IGLGlobal | #IGL2017

 IGL2017 | IGL2017

In partnership with:

Ewing Marion
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Innovation Growth Lab Global Conference 2017

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13-14 June 2017
Barcelona

RCTs in innovation, entrepreneurship
and economic growth:
Scope and application

Policy & Practice Learning Lab
Session B1



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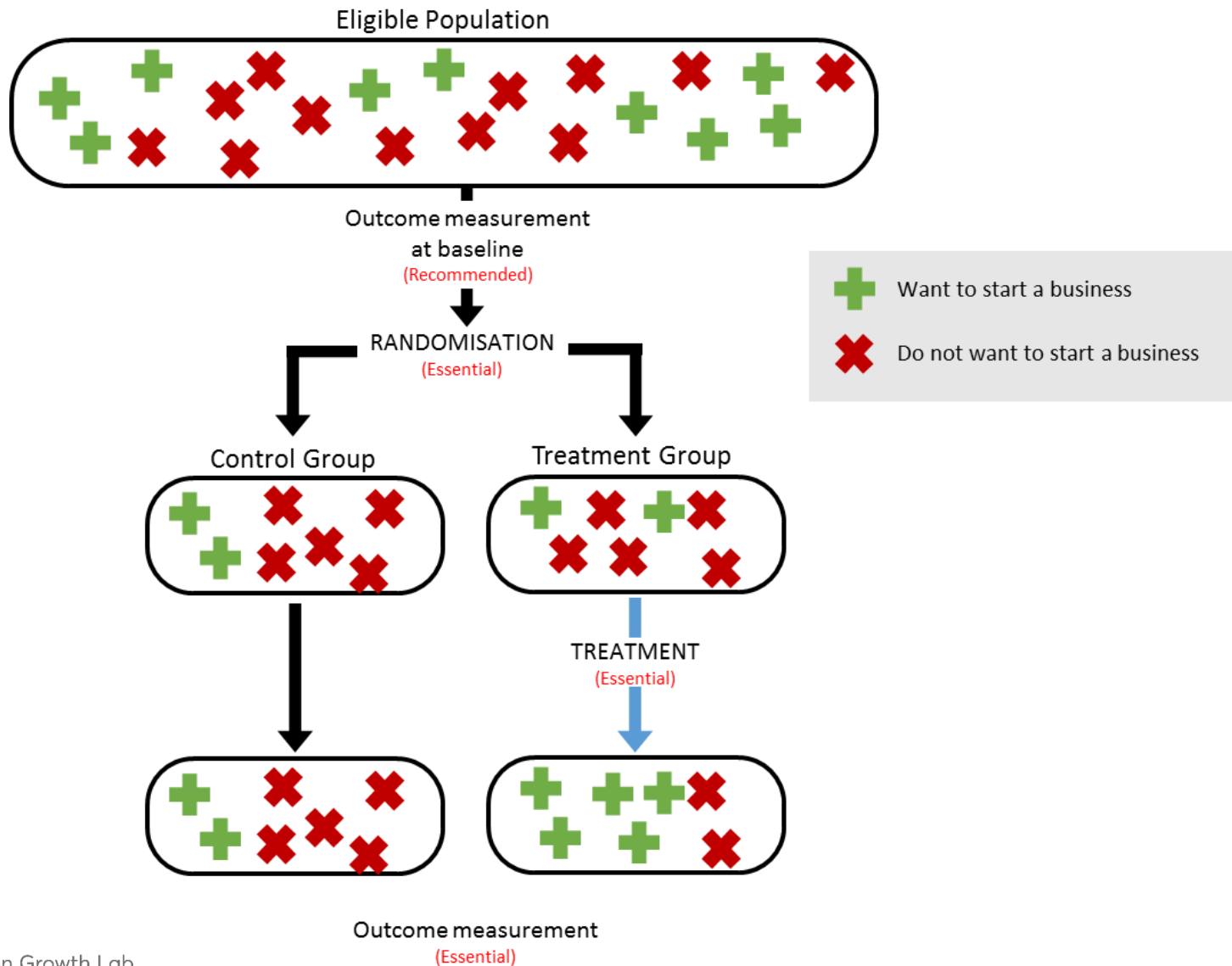
Aims of the workshop

- Outline key factors for successful RCT
- How to approach application
- Introduce new toolkit and existing IGL Guide

Workshop Structure

Workshop outline and what are trials	11:30 - 11:40
1) Can the trial teach you something valuable	11:40 - 12:00
2) Is the programme suitable for a trial	12:00 - 12:20
3) Is the trial technically feasible	12:20 - 12:40
4) Is there political will	12:40 - 12:55

What are trials?



Workshop Framework

1) Can you learn something interesting?

2) Is the programme suitable for trialling?

3) Is a trial technically feasible?

4) Is there political will to run a trial?



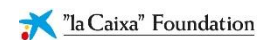
1) Can you learn something interesting?



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*For every programme there will be
at least one question that would be
best answered by a trial...*

*...but will you want to know the
answer?*



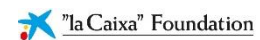
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There are multiple ways to experiment...

**Full impact
evaluation**

**Testing tweaks
to existing
programmes**

**Experimental
policy
development**



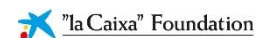
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How you might approach a trial?



Answer research question

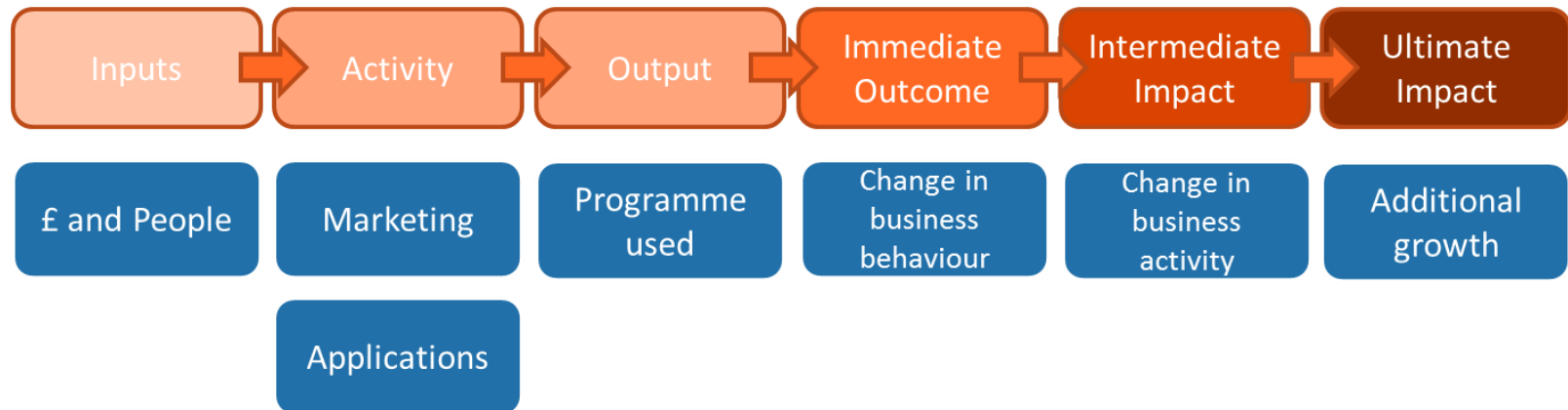


Ideas to improve delivery

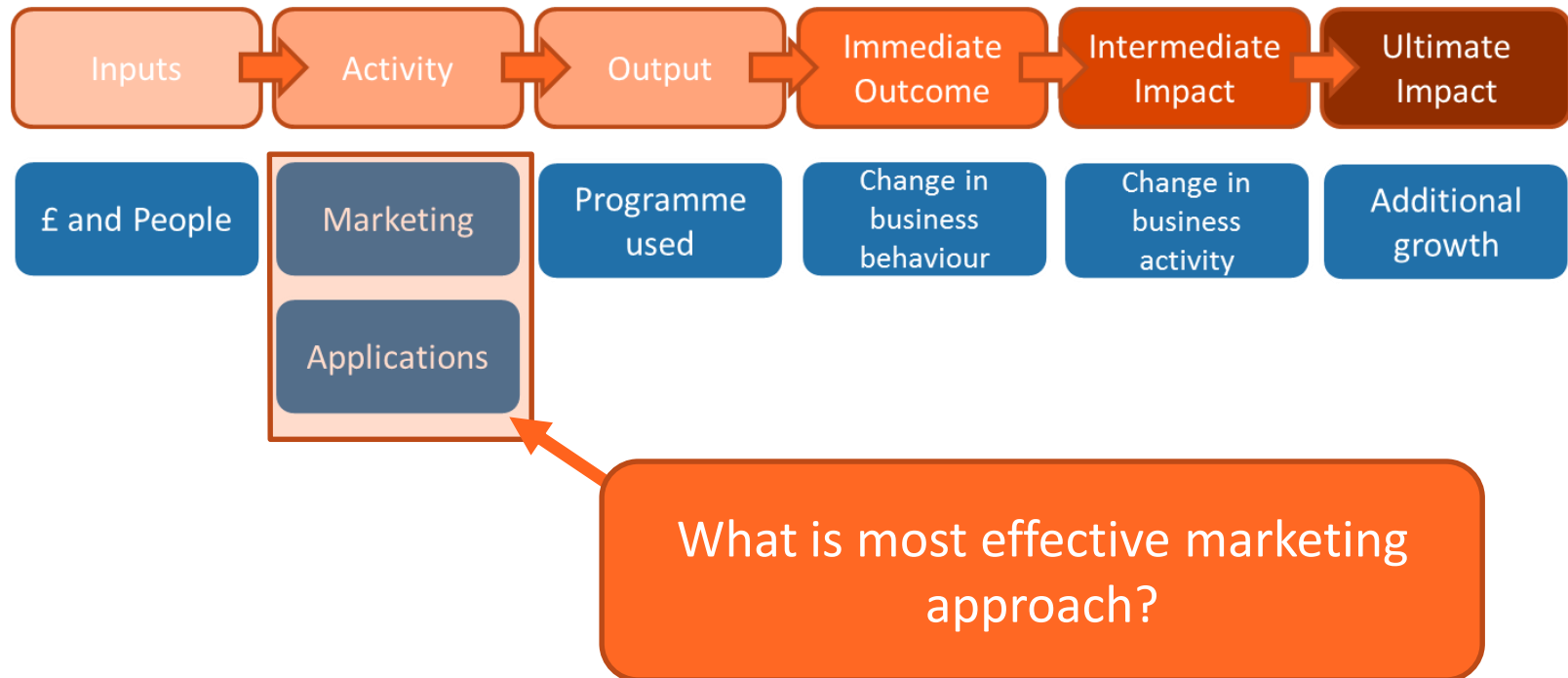


Test Impact

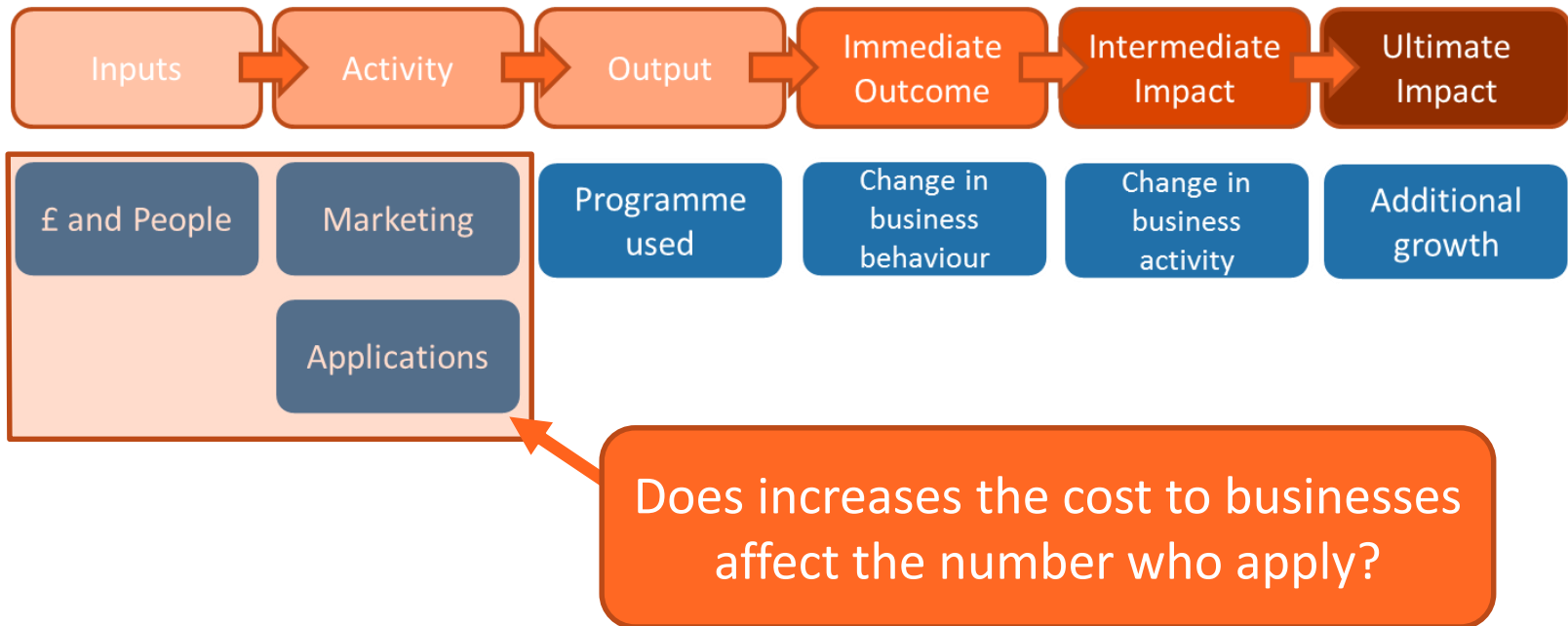
Multiple ways to use RCTs across a programme's logic model



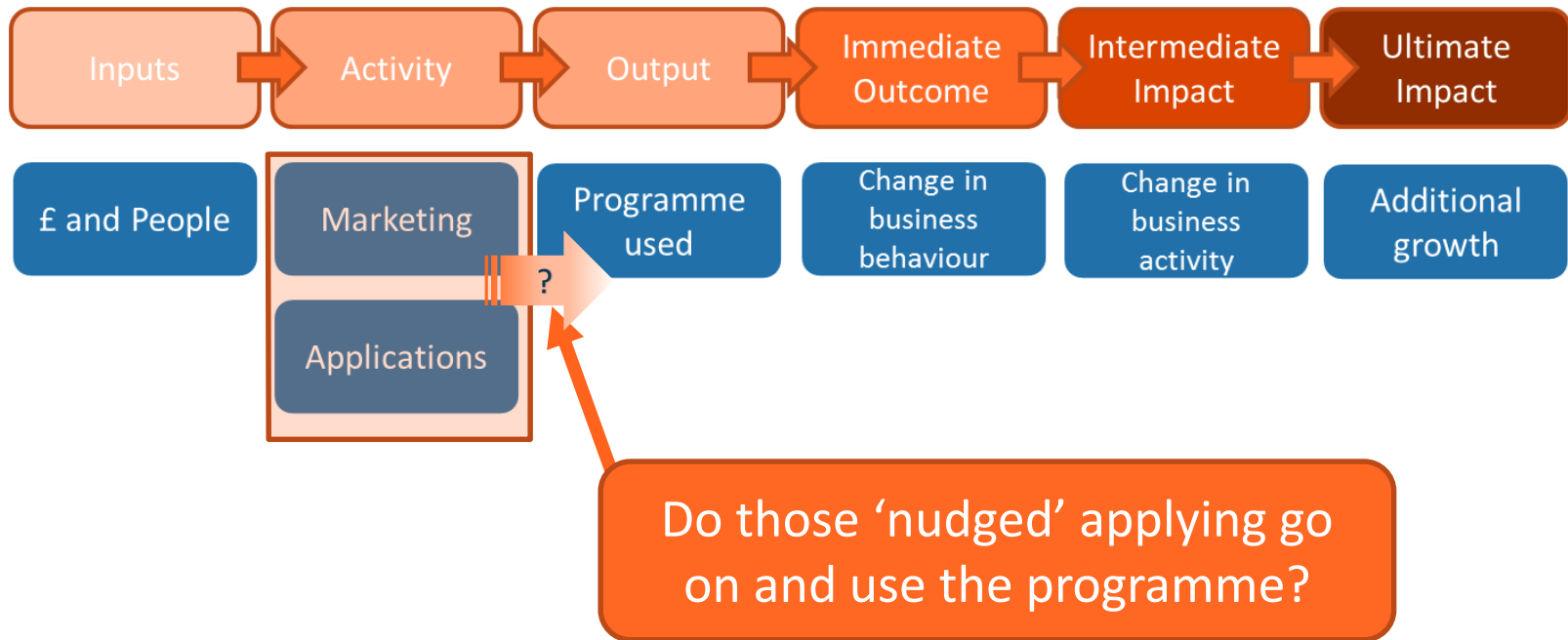
Experiments with a small 'span' can provide quick wins...



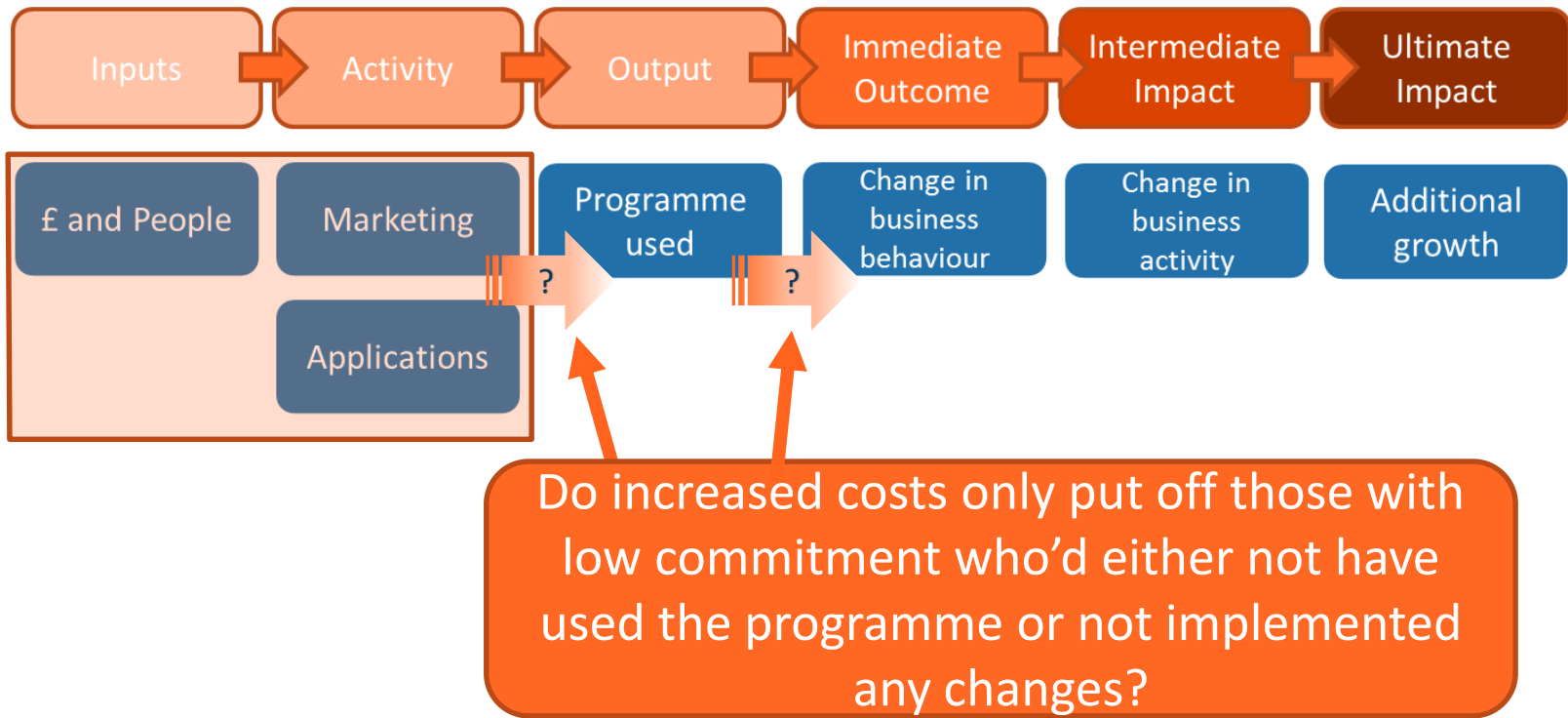
Experiments with a small 'span' can provide quick wins...



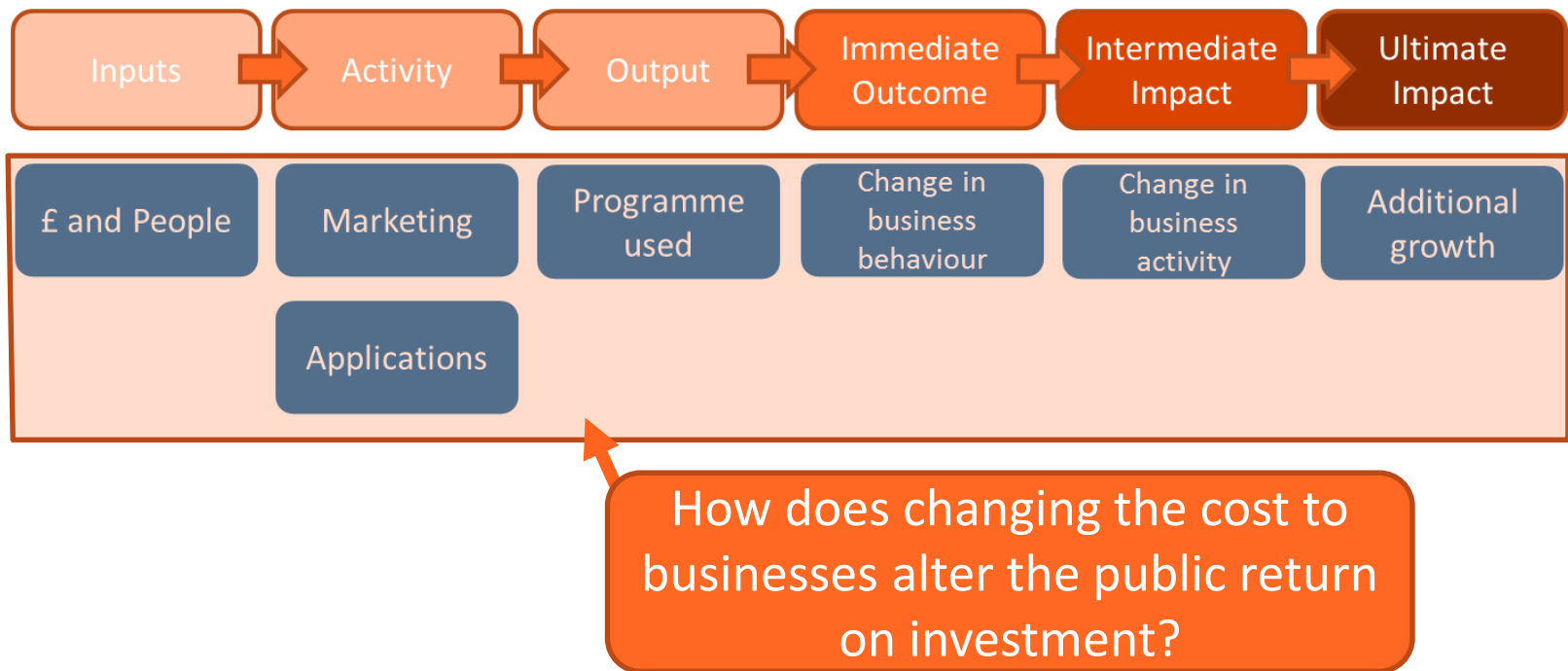
...but those with a wider span have more power



...but those with a wider span have more power



...but those with a wider span have more power



Types of trial

	Rapid fire trials	Impact trials
Intervention	Usually low-cost modification in delivery	Change to existing or entirely new programme
Data	Largely administrative (eg email click rates or programme applications)	Administrative and survey (often complex to measure or emerging over time)
Outcomes	Limited to first order outcomes like take-up and usage of the product in question	Economic outcomes such as employment or output growth, as well as innovation activity, business capabilities or investment.

First exercise

Look at programme outlines on table:

1. Could this question be answered by doing a trial?
2. If yes, would this be a rapid-fire or impact trial?

7 Minutes

Trial	Tria I	Rapid/Impact
A lengthy application process for an R&D grant that requires businesses to provide information on their turnover, team structure, plans, etc.		
A local 'Science Park' bringing together actors from industry, private R&D and universities		
A training programme for budding entrepreneurs		
A Technology Transfer Office at a university trying to increase the number of research projects that turn into spin-offs		
A TV campaign to encourage young people to become entrepreneurs		

Trial	Tria I	Rapid/Impact
A lengthy application process for an R&D grant that requires businesses to provide information on their turnover, team structure, plans, etc.	Y	R
A local 'Science Park' bringing together actors from industry, private R&D and universities	No	
A training programme for budding entrepreneurs	Y	I
A Technology Transfer Office at a university trying to increase the number of research projects that turn into spin-offs	?	
A TV campaign to encourage young people to become entrepreneurs	No	



Is the programme suitable for trialling?



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Suitability

- A theory of change and/or a logic model
- Clear and excludable intervention
- Clear outcomes
- Identified participants
- Timely impacts
- Understanding the context

Second exercise – 7 minutes

Questions	Scenario 1	Y/N	Scenario 2	Y/N
Is the intervention excludable?	You decide that the training will be a website for entrepreneurs that has multiple resources, some of which are online modules for leadership skills, investment readiness		You decide the training will involve a tested curriculum spanning 12h over 4 weeks for entrepreneurs who have been selected to participate in an incubator	
Are the outcomes clear?	Increase in finance raised		Increase in business confidence	
Is the target population well defined and suitable?	Anyone who finds and then uses the website		September's cohort applicants to the incubator	

Is a trial technically feasible?



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Key questions

- Is randomisation feasible?
 - What is the appropriate level or unit of randomisation?
 - What is the appropriate method of randomisation?
 - How would we implement the randomisation?
- What is the necessary sample size to answer your question?
 - An experiment must be sensitive enough to detect outcome differences between the treatment and the comparison groups



Opportunities to randomise

- Access to the programme
- Timing of access to the programme
- Encouragement to take up the programme

Sufficiently powered study

- Sample must be ‘big enough’ so we could draw policy conclusions from a study in which the estimated effect size is sufficiently precise
- Sample should not be ‘too big’ where an effect of little **policy** importance is nevertheless statistically detectable.
- An undersized study can be a waste of resources since it may not produce useful results
- An oversized study uses more resources than necessary

Minimum Detectable Effect Size (MDES): the smallest true effect size that has a good chance of being found to be statistically significant

How to increase a study power?

Consider using:

- R^2
- A repeated measures design
- Unequal allocation ratio

Third exercise (in groups) – 8 minutes

Please discuss what programmes would be eligible for an impact trial in your organisation?

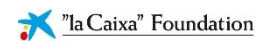
Is there political will to run a trial?



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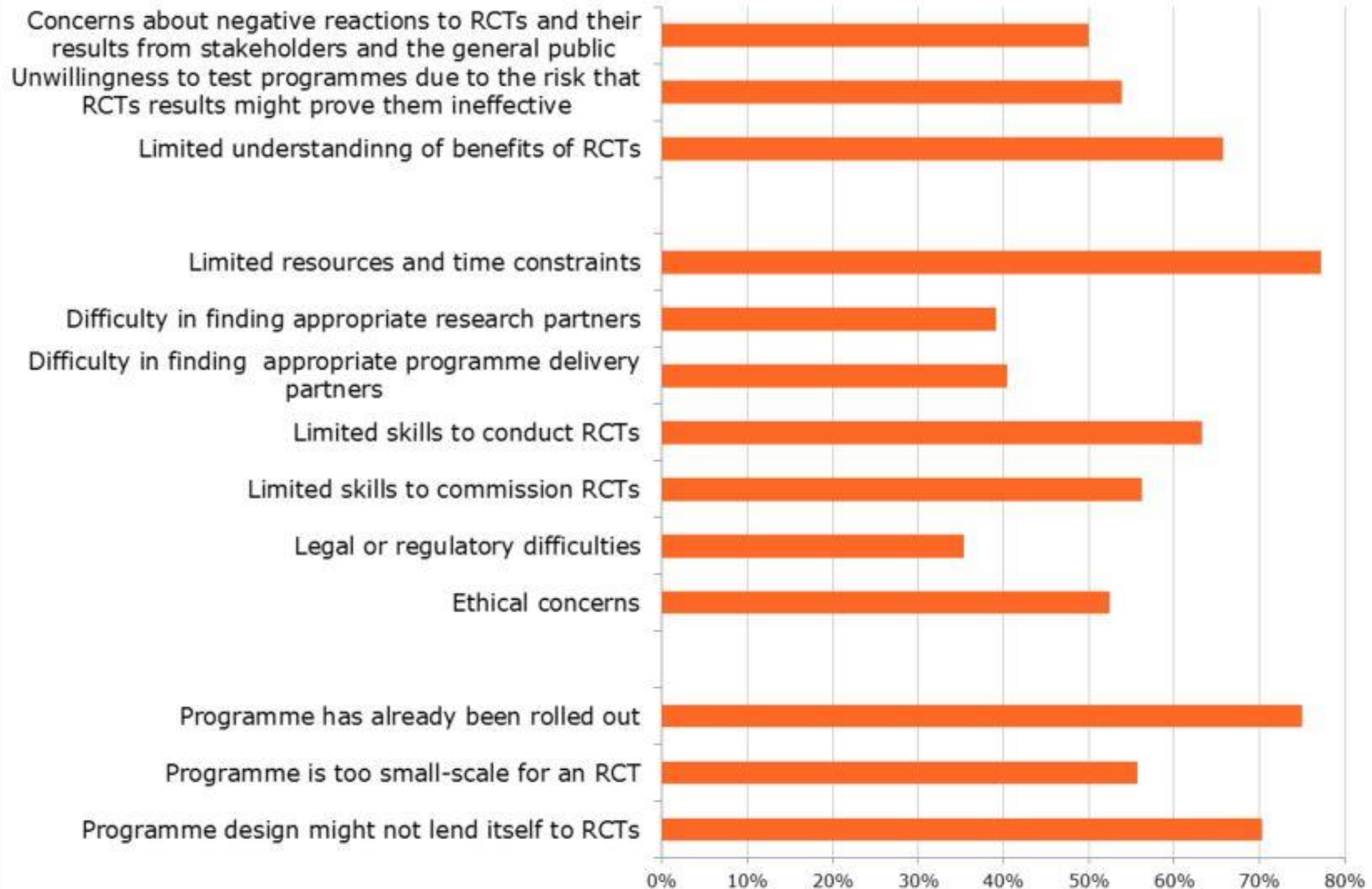


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Barriers to running RCTs

Percentage answering 'Important' or 'Very important'



Political will

- Narrative for change quality of evidence
- Start small
- Variation in treatment
 - Everyone can get some form of support
- Be ready to respond to opportunities

Questions



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innovation and growth policy



www.innovationgrowthlab.org

Notes: How to increase a study power?

Consider using:

- Coefficient of variation (R^2): the proportion of the variance in outcome that is explained not by the difference in interventions, but by differences in other **observable** characteristics
- A repeated measures design – can improve the study efficiency (depends on how correlated outcomes are for individuals over time)
- Unequal allocation ratio: the proportion of participants allocated to treatment or control – when limited resources, allocating more participants into the control group may increase study power