

Discussion Topics: Field Experiments

Note: for the opinion based questions (e.g. 1,2 & 6) , the answers written are my own opinion, yours might differ, but you just have to be able to substantiate them with accurate arguments.

- (1) What constitutes a “good” field experiment? Please, either provide a rationale or give a specific example.

An ideal field experiment not only increases external validity, but does so in a manner in which internal validity is not sacrificed. In testing a theory, the conditions in the field should violate as little requirements of the theory as possible, while making use of the more natural setting to increase external validity; if needed proper data should be elicited to rule out other possible mechanisms. It should also be conducted such that we can add to what possibly can learn in a lab: hence its design should sort of address the criticisms of lab experiments: e.g. subject pool, context and stakes etc.

- (2) What constitutes a “bad” field experiment? Please, either provide a rationale or give a specific example.

Things which eliminate the rationale of using a field experiment: E.g

1. It does not control for noise from other covariates
2. No proper elicitation of people’s valuations.
3. Too much selection bias and no proper randomisation: Experimenter demand effects + spreading of information about experiment may lead to people selecting into particular treatments based on certain traits.
4. Not administratively sound in the sense that can follow up on people’s choices over time without much (selective) attrition.
5. Design does not control for spill-over effects: e.g. within village vs between village.

- (3) Why did field experiments emerge as a research methodology in experimental economics? Provide several reasons and discuss.

3 possible classes of criticisms: (basically they all address the same issue about external validity of lab experiments):

- **Environment:** Given that the environments which are present are very sterile (controlled), it may be unlikely that the effects which we find in these lab experiments can be extended to real life situations. E.g. will these artificially constructed games be relevant for real market behaviour?
 - IMO, this is especially critical of situations which recommend some form of policy based on some intervention done in the lab: given the controlled environment, it is unlikely that interventions will have similar effects: we can’t control for communication of beliefs and perceptions, anonymity etc. That is why lab experiments are more useful for testing theory: it’s advantage is that it can isolate various mechanisms. Whether these have economically big effects is another question and possibly can be examined stepwise by introducing various elements?

- **Context/Stakes:** the situation which people face are not realistic in a way similar to the above. The simplified games and stakes which are conducted will not extend to the cases which they are taken to represent. E.g. Gift exchange: job environment; Dictator game: Charity.
- **Subject Pool:** The subject pool is WEIRD: white, educated, industrialised, rich and democratic. This may mean that any positive results may not generalise to the entire population per se. Also the standard student pool being used may often lack the relevant experience in certain areas which might cause behaviour to vary (e.g. traders)

Given these criticisms, field experiments thus seek to examine similar hypotheses in a more realistic setting: in the actual real environment (especially where policies are possibly going to be enacted). Often, they involve real scenarios: savings decisions, risk sharing, migration faced by people whom are actually in these situations.

On the other hand, we often tend to lose control as compared to a laboratory experiment. Problems of selective compliance to treatments, communication, non-anonymity, social interactions often cloud the mechanisms by which things occur.

(4) Card et al. (2011) argue that, to date, the majority of studies which use field experiments are descriptive (do not test theoretical models). Why do you think this is the case?

On page 12(?) of the slides, it can be seen that most field experiments are descriptive. This means that they show the effects of a treatment on outcomes, but do little to test the theory/ mechanisms behind it. This is likely because, in a field setting, we give up control of the environment for the reality of the decision environment. This means that there are many different possible ways in which the outcome may occur, some may be known and hypothesised, some may not be known. It is nigh-on-impossible to experimentally control for various effects in the field like in the lab given this natural setting.

For example: If we want to know if informal risk sharing between individuals in villages is causally due to a mechanism of reputation building vs reciprocity, we might want to control for reputation building. But this may be impossible given that we want to keep the natural interaction structures of people in the village.

Often the best one can do is to show evidence which refutes some known mechanisms which you feel is not true, but cannot directly test it. Of course, this is also subject to whether one knew about these potential mechanisms in the first place and made an effort to collect the data which is needed to test these. Often one needs to have good knowledge of the local background in order to know about what data we need in the first place.

Furthermore, even if we know what data to collect, there are various other restrictions (ethical, funding, non-anonymity, administrative) which makes the collection of additional data more difficult.

Some studies have tried to structurally estimate parameters of utility without using a specific experimental design, but this often requires heroic assumptions and does not rule out other mechanisms (the estimated model itself is an assumption).

Nevertheless, there still seems to be quite a bit of room for theory in certain kinds of field experiments? Just not done that much: could be that it already takes a lot of effort to conduct the field experiment?

- (5) Why is the classification of field experiments proposed by Harrison and List (2004) often described as controversial?

Related to artefactual field experiments: people don't really consider them to be field experiments? Harrison and List claim that lab in field experiments or artefactual field experiments have somewhat of a field setting due to the change in subject base to a less artificial, student based one. Others claim that these are basically almost exactly the same as normal lab experiments. But, just a naming convention?

- (6) How do natural field experiments differ from natural experiments? Provide examples.

In general, these differ in the procedure with which the study proceeds.

Natural field experiments are similar to lab experiments: one has a particular hypothesis for which a design is implemented in order to test it. Conclusions are then drawn from the generated data. So, theory and hypothesis generation come before the data generation process.

An example of a natural field experiment would be say the changing of the framing of tax letters to see the impacts on people's tax return behaviour. This would be natural to the extent that people do not know about the different framing treatments.

In natural experiments, the data has already been generated, one has no control over the process. Based on the data and specific events which occur¹, one then tries to examine hypotheses which can be tested. Notice that hypotheses are restricted in the latter case.

An example of a natural experiment would be examining the life outcomes of lottery winners to find out the effects of wealth. Note that while this may allow for causal reasoning, it still may not have external validity due to selection issues: here lottery applicants.

- (7) It has been suggested that natural experiments should be used only as compliments to laboratory experiments. Do you agree or disagree with this suggestion? Explain why.

For: given the little control in natural experiments, it would be difficult to test actual theory using them. It is thus better to try and mimic and external environment in a lab experiment with more control and to address external validity of the results: conduct natural experiments. Also, it may be hard to come by natural occurring data for specific things which we want to test.

Against: difficult to mimic a natural setting in a lab: people and context will always be different, so natural experiments will always serve a role separate from laboratory experiments. Can be useful for testing policy implications (rather than theory testing; these might be separate from any theory generated from lab experiments) which would be more relevant than lab results. Things which are more macro in nature like group-social interactions, political affiliations and effects of institutions may be better studied outside the lab.

¹ Arguments are made that these are exogeneous, or that these are instruments for particular variables of interest which may affect outcomes. Also see https://en.wikipedia.org/wiki/Instrumental_variables_estimation

- (8) Summarize differences between thought experiments, laboratory experiments, field experiments and natural experiments according to the following criteria: subject pool, information which subjects bring to the task, experimental commodity, task, stakes and decision architecture. (Criteria are from Harrison and List) Provide examples.

Note: for clearer answers, please refer to the relevant papers. These are just some stuff which I came up with off the top of my head.

	Thought	Lab/ Artefactual	Field	Natural
Subject pool	Self-defined (Usually a homogenous agent)	Student/ General	Non-standard	Non-standard
Information	Self-defined	Student related/Outside experience	Outside experience	Outside experience
Commodity	Self-defined (results in overall utility)	Abstract (in terms of experimental currency) Trade-offs between items are (partly) induced by the experimenter as parameters. E.g. cost of effort	Various (In kind, money, none). Trade-offs made are "natural".	Various (In kind, money, none). Trade-offs between items are "natural".
Task	Self-defined	Abstract framing	Realistic environment (e.g. responses to change in incentives in factory)	Exogeneous changes in environment, independent of experimenter control.
Stakes	Self-defined	Smaller stakes	Real stakes	Real stakes
Decision architecture	Self-defined	Imposed rules. Constrains on information, action sets. Participants are aware of the intervention.	Natural, no constraints except from say the environment. (controls not implementable?) Participants may or may not be aware of intervention.	Natural, no constraints except from say the environment.

Thought experiments: are sort of like predecessors of current experiments: E.g. St Petersburg paradox/ Ellsberg and Allais Paradox -> didn't really have a theory behind it. They were just general intuitions about what people would do under certain assumptions. No actual experiments were really conducted when first started, but subsequently verified by others.

- (9) Explain how different types of experiments can be distinguished from each other dependent on how much control an experimenter has. Provide examples.

Note: these classifications and descriptions are from Levitt and List 2009, so do take a look. Basically, the idea is that lab experiments, with the most control have the most constraints and the subsequent classifications are obtained by lifting certain constraints (step-wise). Lifting the constraints on e.g. subject pool and the contexts means that the experimenter has less freedom to specify them and thus opens himself to noise from the environment.

- **Lab experiments:** Invite students to the lab. Standard abstract experiments.
- **Artefactual Field experiments:** Invite people from the field to the lab. (Conducting trust games among the general population). Abstract experiments as well. (Haigh and List conducted an experiment comparing students' and traders' loss aversion using similar experiments.)
- **Framed Field experiments:** Similar to artefactual field context, but involve more field contexts in terms of stakes, environment, task etc. Participants know they are participating in an experiment. (Usually asked to imagine their decisions in particular real life scenarios? E.g. Inviting participants to some survey about a new bank product and asking them about their choices in each case?)
- **Natural field experiments:** Similar to Framed Field experiment, but they do not know that they are taking part in an experiment (E.g. there was a study where banks randomised credit card roll outs, government accelerated pay rise of random schools in Indonesia)
- **Natural experiment:** No control at all. Data has already been generated: usually dependent on random occurring things. (e.g. Effects of weather changes on mood)

Note also that in the first 3, participants usually have knowledge of being in an experiment and it might be important to consider the effects of that in itself.