

THE NEW GOLD STANDARD IN DEVELOPMENT ECONOMICS?

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Development economics has changed a lot during the last two decades or so, mostly due to the extensive use of 'randomised control trials' (RCT). 'Randomistas' are proponents of RCTs to assess long-run economic productivity and living standards in poor countries. Three randomistas, Abhijit Banerjee, Esther Duflo and Michael Kremer, were awarded the 2019 Nobel prize in Economics for their RCT-based studies on poverty worldwide.

The concept of RCT is quite old; instances of RCTs can be traced back in the 16th century. However, the statistical foundation of RCT was developed by British statistician Sir Ronald Fisher, about 100 years ago, mostly in the context of design of experiments.

In my experience I have seen the proportion of events by the same treatment varying between 10% to 35% in different clinical trials. Is it due to unknown distribution of treatment effects, and/or other external effects such as hospital care, hospital location, etc? Thus, for an unbiased evaluation of the treatment, its performance needs to be compared with some 'control', which maybe 'no treatment' at all or an 'existing treatment' other than the treatment under study.

The next task is to allocate the patients among two treatments/interventions at hand. Patients might prefer some treatment to the other. Prior knowledge of the treatments to be applied to them might induce a 'selection bias' due to unequal proportions of patients opting out from the study. 'Randomisation' is a procedure used to prevent this by allocating patients using a random mechanism — neither the patient nor the doctor would know the allocation.

'Control' and 'randomisation' together constitute an RCT. In 1995, statisticians Marvin Zelen and Lee-Jen Wei illustrated a clinical trial to evaluate the hypothesis that the antiretroviral therapy AZT reduces the risk of maternal-to-infant HIV transmission. A standard randomisation scheme was used resulting in 238 pregnant women receiving AZT and 238 receiving standard therapy (placebo). It is observed that 60 newborns were HIV-positive in the placebo-group and 20 newborns were HIV-positive in the AZT-group. Thus, the failure rate of the placebo was 60/238, whereas that of AZT was only 20/238, indicating that AZT was much more effective than the placebo. Drawing such an inference, despite heterogeneity among the patients, was possible only due to randomisation. Randomisation makes different treatment groups comparable and also helps to estimate the error associated in the inference.

The early applications of RCTs were mostly within the agricultural field. Sir Ronald Fisher himself was very reluctant to apply statistics to social sciences, due to their 'non-experimental' nature. RCT got its importance in clinical trials since the 1960s, so much so that any clinical trials now-a-days without RCT were being considered almost useless.

Social scientists slowly found RCT to be interesting, doable, and effective. But, in the process, the nature of social science slowly converted from 'non-experimental' to 'experimental'. Numerous interesting applications of RCTs took place in social policy-making during the 1960-90s, and the 'randomistas' took control of development economics since the mid-1990s. About 1,000 RCTs were conducted by Prof. Kremer, Prof. Banerjee and Prof. Duflo and their colleagues in 83 countries such as India, Kenya and Indonesia. These were to study various dimensions of poverty, including microfinance, access to credit, behaviour, health care,

immunisation programmes, and gender inequality. While Prof. Banerjee thinks RCTs “are the simplest and best way of assessing the impact of a program”, Prof. Duflo refers to RCTs as the “tool of choice”.

There has been tremendous international attention on Finland’s Basic Income experiment (2017-18), where 2,000 unemployed Finns between ages 25-58 were randomly selected across the country, and were paid €560 a month instead of basic unemployment benefits. Results from the first year data didn’t have any significant effect on the subjects’ employment, in comparison with the control group comprising individuals who were not selected for the experimental group. Essentially this was also an RCT.

Critics of RCTs in economic experiments think that in order to conduct RCTs, the broader problem is being sliced into smaller ones, and any dilution of the scientific method leaves the conclusions questionable. Economists such as Martin Ravallion, Dani Rodrik, William Easterly, and Angus Deaton are very critical of using RCTs in economic experiments.

Randomisation in clinical trials has an additional impetus — it ensures that allocation to any particular treatment remains unknown to both patient and doctor. Such kind of ‘blinding’ is central to the philosophy of clinical trials and it helps to reduce certain kinds of bias in the trial. It is believed that the ‘outcome’ or the ‘treatment-response’ might be influenced if the patient and/or the physician are aware of the treatment given to the patient. However, such kind of ‘blinding’ is almost impossible to implement in economic experiments as participants would definitely know if they get any financial aid or training. Thus, randomisation must have a much less impact there. Often, economists miss such an important point.

However, unless randomisation is done, most of the standard statistical analyses and inference procedures become meaningless. Earlier social experiments lacked randomisation and that might be one reason that statisticians such as Sir Ronald Fisher were unwilling to employ statistics in social experiments. Thus, “RCT or no RCT” may not be just a policy decision to economics; it is the question of shifting the paradigm. The “tool” comes with lot of implicit baggage. With randomisation dominating development economics, implicitly, economic experiments are becoming more and more statistical. This is one philosophical aspect which economists need to settle.

Apparently, for the time being, many would concur with Harvard economist Lant Pritchett who criticises RCTs on a number of counts but still agrees that it “is superior to other evaluation methods”. The debate would continue, while the randomistas continue to gain momentum at the moment.

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