

## Pilot Study <sup>[1]</sup>

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A pilot study is a standard scientific tool for 'soft' research, allowing scientists to conduct a preliminary analysis before committing to a full-blown study or experiment.

A small chemistry experiment in a college laboratory, for example, costs very little, and mistakes or validity <sup>[3]</sup> problems easily rectified. At the other end of the scale, a medical experiment taking samples from thousands of people from across the world is expensive, often running into the millions of dollars.

Finding out that there was a problem with the equipment or with the statistics <sup>[4]</sup> used is unacceptable, and there will be dire consequences.

A field research <sup>[5]</sup> project in the Amazon Basin costs a lot of time and money, so finding out that the electronics used do not function in the humid and warm conditions is too late.

To test the feasibility, equipment and methods, researchers will often use a pilot study <sup>[6]</sup>, a small-scale rehearsal of the larger research design. Generally, the pilot study technique specifically refers to a smaller scale version of the experiment, although equipment tests are an increasingly important part of this sub-group of experiments.

For example, the medical researchers may conduct a smaller survey <sup>[7]</sup> upon a hundred people, to check that the protocols are fine.

The Amazon Researchers may perform an experiment, in similar conditions, sending a small team either to the Amazon to test the procedures, or by using something like the tropical bio-dome at the Eden Project.

Pilot studies are also excellent for training inexperienced researchers, allowing them to make mistakes without fear of losing their job or failing the assignment.

Logistical and financial estimates can be extrapolated from the pilot study, and the research question <sup>[8]</sup>, and the project can be streamlined to reduce wastage of resources and time.

Pilots can be an important part of attracting grants <sup>[9]</sup> for research as the results <sup>[10]</sup> can be placed before the funding body.

Generally, most funding bodies see research <sup>[11]</sup> as an investment, so are not going to dole out money unless they are certain that there is a chance of a financial return.

Unfortunately, there are seldom paper reporting the preliminary pilot study, especially if

problems were reported, is often stigmatized and sidelined. This is unfair, and punishes researchers for being methodical, so these attitudes are under a period of re-evaluation.

Discouraging researchers from reporting methodological errors [12], as found in pilot studies, means that later researchers may make the same mistakes.

The other major problem is deciding whether the results from the pilot study can be included in the final results and analysis, a procedure that varies wildly between disciplines.

Pilots are rapidly becoming an essential pre-cursor to many research projects, especially when universities are constantly striving to reduce costs. Whilst there are weaknesses, they are extremely useful for driving procedures in an age increasingly dominated by technology, much of it untested under field conditions.

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