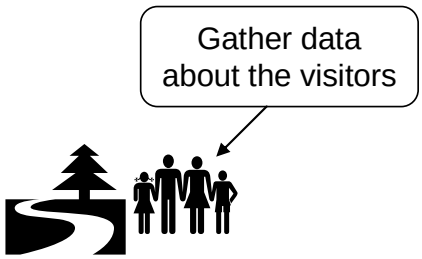
Appendix 1: A quick guide to 3 ‘types’ of study design

This section offers a crude introduction to various elements of study design. It must be noted that the 3 ‘types’ of design outlined here are not mutually exclusive and that this is NOT an exhaustive list. The aim is to illustrate the differences between different approaches to design.

Observational Design

In an observational design, the study might simply look at a project or intervention after it has happened and ask questions of it. If the project was, for example, designed to encourage children to use a woodland trail, the study might count the number of children using the trail, enabling an answer to the question ‘do children use this trail?’. Alternatively, the study might compare the project site with another in which the project or intervention has not happened and look for differences in how many children use the trail. It might be possible to try and match the compared sites on other characteristics, to get as ‘fair’ a comparison as possible and to try to rule out other reasons for any observed differences.



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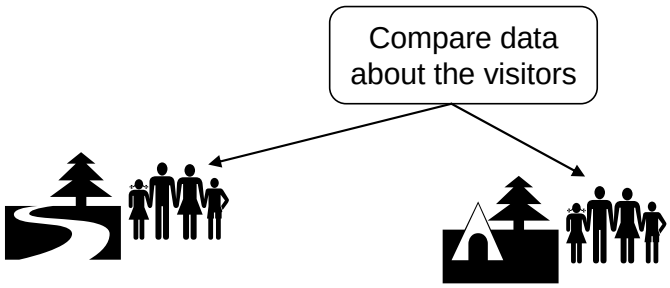


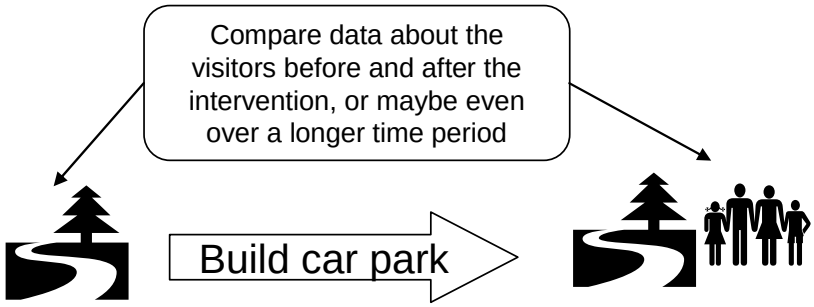
The advantage of this kind of study is that it is usually fairly fast, requiring data collection or analysis of secondary data at one point in time only. The addition of one or more comparison sites can add strength to the persuasiveness of the study. However, this kind of design cannot tell us whether there were always children using the trail at the project site or not – that is, it cannot *attribute* the outcome to the project or

intervention. There might well be other factors affecting what is observed at the site – nothing to do with the project at all.

Observational designs can be useful for exploring differences though, especially if a number of sites are compared. Comparing just two sites to ask whether broadleaf woods attract more walkers than evergreen woods is unlikely to produce a useful answer. Comparing visitor numbers at all evergreen woods in a region, with all broadleaf woods in the region, might provide a clear and reliable answer. Observational designs can be useful for seeing patterns of difference between numerous sites or projects.

The Longitudinal design (before and after)

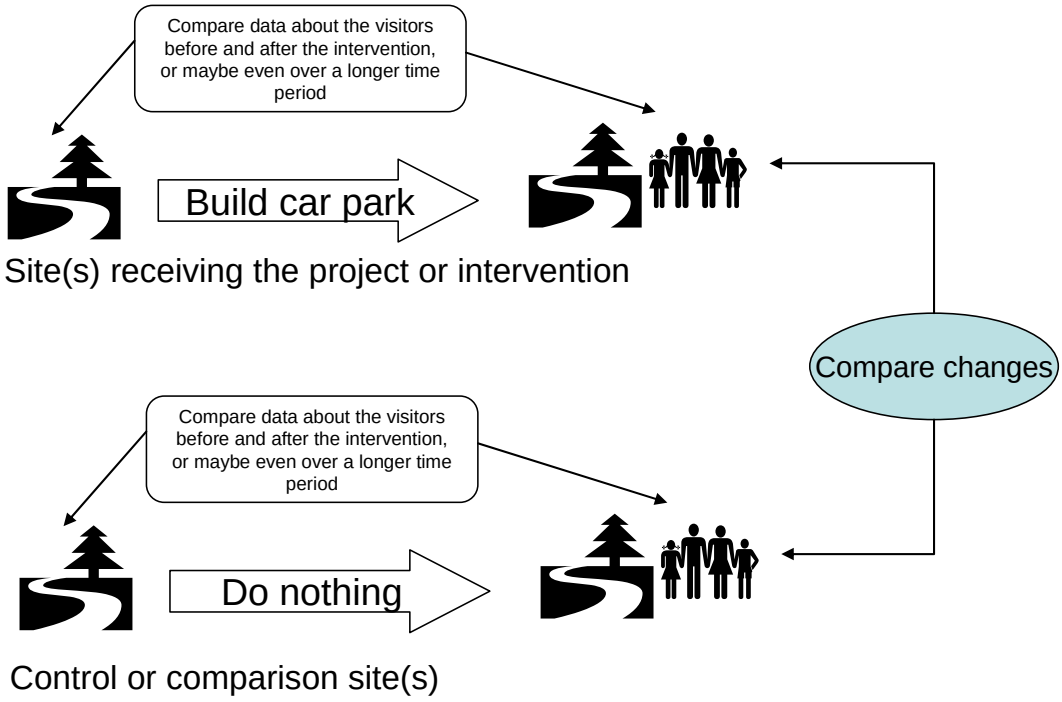
In the longitudinal design, time is used to try and identify the impact of a project or intervention. In the example, visitor numbers before and after the construction of a car park are compared. If it is possible to extend the information through time (i.e. observe trends in visitor numbers long before and after the project or intervention), a much greater reliance on the results can be made. Otherwise, it could argued be that the rise in visitor numbers was simply part of a longer term trend and would have occurred anyway. Furthermore, if the rise is not sustained in time, it might be argued that it was due to some other extraneous factor.



The longitudinal design has the advantage of being able to demonstrate that a change in outcome did accompany the project or intervention, but it cannot offer certainty that the change in outcome was *caused* by the project or intervention. Perhaps these changes were happening everywhere else anyway. A good example of this is the fall in heart disease rates in Scotland. Rates are coming down rapidly in most communities in Scotland. A project observing these rates in a community which received new woodland might assume that the fall was due to the woodland. This problem is why the controlled trial or comparison design is sometimes required.

Controlled trial or comparison design

In this design, elements from the others are combined to make a comparison of changes over time in site(s) receiving the project or intervention, with similar sites which do not receive the intervention (the control or comparison site). By comparing both changes over time within each site, and comparing any changes between the sites, it becomes possible to be more certain that a change in outcome is really due to the project or intervention.


Compare data about the visitors before and after the intervention, or maybe even over a longer time period
Build car park
Site(s) receiving the project or intervention
Compare changes
Compare data about the visitors before and after the intervention, or maybe even over a longer time period
Do nothing
Control or comparison site(s)

END