

Quasi-Experimental Design

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Quasi-experimental design is a form of experimental research used extensively in the social sciences and psychology.

Whilst regarded as unscientific and unreliable, by physical and biological scientists, the method is, nevertheless, a very useful method for measuring social variables.

The inherent weaknesses in the methodology do not undermine the validity of the data, as long as they are recognized and allowed for during the whole experimental process.

Quasi experiments resemble quantitative and qualitative experiments, but lack random allocation of groups or proper controls, so firm statistical analysis can be very difficult.



The banner features the Explorable logo at the top center, with the text "EXPLORABLE" in a large, bold, white font and "Quiz Time!" in a smaller, white, cursive font below it. Below the logo are three square images, each with a white border and a white caption below it. The first image shows a pair of red roller skates on a wooden deck, with the caption "Quiz: Psychology 101 Part 2". The second image shows a fan of colorful pens, with the caption "Quiz: Psychology 101 Part 2". The third image shows a Ferris wheel at sunset, with the caption "Quiz: Flags in Europe". To the right of the three images is a white button with the text "See all quizzes =>" in orange.

Design

Quasi-experimental design [1] involves selecting groups, upon which a variable is tested, without any random pre-selection processes.

For example, to perform an educational experiment, a class might be arbitrarily divided by alphabetical selection or by seating arrangement. The division is often convenient and, especially in an educational situation, causes as little disruption as possible.

After this selection, the experiment [2] proceeds in a very similar way to any other experiment, with a variable being compared between different groups, or over a period of time.

Advantages

Especially in social sciences, where pre-selection and randomization [3] of groups is often difficult, they can be very useful in generating results [4] for general trends.

E.g. if we study the effect of maternal alcohol use when the mother is pregnant, we know that alcohol does harm embryos. A strict experimental design [5] would include that mothers were randomly assigned to drink alcohol. This would be highly illegal because of the possible harm the study might do to the embryos.

So what researchers do is to ask people how much alcohol they used in their pregnancy and then assign them to groups.

Quasi-experimental design is often integrated with individual case studies; the figures and results generated often reinforce the findings in a case study [6], and allow some sort of statistical analysis to take place.

In addition, without extensive pre-screening and randomization needing to be undertaken, they do reduce the time and resources needed for experimentation.

Disadvantages

Without proper randomization, statistical tests can be meaningless.

For example, these experimental designs do not take into account any pre-existing factors (as for the mothers: what made them drink or not drink alcohol), or recognize that influences outside the experiment may have affected the results.

A quasi experiment constructed to analyze the effects of different educational programs on two groups of children, for example, might generate results that show that one program is more effective than the other.

These results will not stand up to rigorous statistical scrutiny because the researcher also need to control [7] other factors that may have affected the results. This is really hard to do properly.

One group of children may have been slightly more intelligent or motivated. Without some form of pre-testing or random selection, it is hard to judge the influence of such factors.

Conclusion

Disadvantages aside, as long as the shortcomings of the quasi-experimental design are recognized, these studies can be a very powerful tool, especially in situations where 'true' experiments [5] are not possible.

They are very good way to obtain a general overview and then follow up with a case study [6]

or quantitative experiment [8], to focus on the underlying reasons for the results generated.

Source URL: <https://explorable.com/quasi-experimental-design?gid=1582>

Links

[1] <http://www.socialresearchmethods.net/kb/quasiexp.php>

[2] <https://explorable.com/conducting-an-experiment>

[3] <https://explorable.com/randomization>

[4] <https://explorable.com/statistically-significant-results>

[5] <https://explorable.com/true-experimental-design>

[6] <https://explorable.com/case-study-research-design>

[7] <https://explorable.com/controlled-variables>

[8] <https://explorable.com/quantitative-research-design>