# Article information:

Optimal multiwave sampling for regression modelling in two-phase designs - PMC
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7902311/>

# Article summary:

1. Two-phase designs involve measuring extra variables on a subset of the cohort where some variables are already measured.

2. This paper proposes a multi-wave sampling design to approximate the optimal design for design-based estimators.

3. Generalised raking is used in the final statistical analysis to obtain efficient estimates of regression parameters.

# Article rating:

Appears well balanced: The article presents the information in a reliable and balanced way, without biases and prejudices. The claims made in the article are well supported and, where applicable, all sides of the argument are given opportunity to present their point of view. The article appears trustworthy and reliable.

# Article analysis:

The article provides an overview of two-phase designs and their use in obtaining efficient estimates of regression parameters, as well as proposing a multi-wave sampling design to approximate the optimal design for design-based estimators. The article is written in an objective manner and does not appear to be biased or one-sided in its reporting. It provides evidence for its claims and explores counterarguments, such as the potential drawbacks of pre-specified sampling probabilities, which can decrease the efficiency of the design. The article also does not appear to contain any promotional content or partiality towards any particular method or approach. Furthermore, it notes possible risks associated with two-phase designs, such as model misspecification when using maximum likelihood estimators, and presents both sides equally by discussing both design-based and model-based estimation methods. In conclusion, this article appears to be trustworthy and reliable in its reporting on two-phase designs and their use in obtaining efficient estimates of regression parameters.

# Topics for further research:

* Two-phase design advantages
* Two-phase design disadvantages
* Design-based estimators
* Model-based estimators
* Multi-wave sampling design
* Maximum likelihood estimators

# Report location:

<https://www.fullpicture.app/item/26ea2c3753fb971e5b1a458974f25bc5>