

Research Limitations

GRS Writing Group – FRI 3 AUG 2018

The Achilles heel of national bird-mortality estimates is that the underlying studies were never designed to be included in an extrapolation to a larger scale.....[yet] they remain contentious enough in their assumptions, input data, methodology, and conclusions that they are instant catalysts for improved science.

Machtans and Thogmartin. 2014. Understanding the value of imperfect science from national estimates of bird mortality from window collisions. The Condor, 116(1):3. <http://www.bioone.org/doi/full/10.1650/CONDOR-13-134.1>

For research to progress, the limitations of studies need to be acknowledged so other researchers can build on this research, confident in their understanding of the credibility and generalizability of the research. Understanding that all research is limited and that acknowledgement of limitations is necessary and helpful may help you write about the limitations of your work with confidence. Be upfront and counter possible negative interpretation by providing an explanation of the most important limitations of your work.

Limitations & Delimitations

Limitation – a systematic bias that you did not or could not control which could inappropriately affect the results.

Delimitation - a systematic bias intentionally introduced into the study design or instrument by you.

Possible limitations and delimitations in study design or impact and statistical or data limitations:

- Sample choice and size of the sample
- Availability and reliability of data , access to data
- Methods/instruments/techniques used to collect the data
- Self-reported data
- Time constraints
- Cultural and other issues

Writing about Limitations

Some disciplines clearly delineate limitations in a separate section. Other disciplines are not so explicit. Sometimes justification of delimitations can be noted in methods, but most appear in the discussion sections. A three stage structure for limitations is recommended:

1. Announce- identify the limitations of your research and explain the importance of each. You do not need to include all limitations – focus on the limitations that have the greatest impact on the findings.
2. Reflect - explain the nature of the limitations and justify the choices that you made during the research process. This section is particularly important for research with critical errors that decrease confidence in the results.

3. Move forward - suggest how such limitations could be overcome in future. This is particularly useful for novel research which often leaves many gaps in understanding that need to be filled.



How to structure the Research Limitations section of your dissertation

<http://dissertation.laerd.com/how-to-structure-the-research-limitations-section-of-your-dissertation.php>

Limitation / Delimitation phrases



English for Writing Research Papers: Useful Phrases

<https://www.google.com.au/search?q=English+for+Writing+Research+Papers+Useful+Phrases&aq=chrome..69i57j0l2.10957j0j7&sourceid=chrome&ie=UTF-8>

- This research has two limitations. The first is ... The second is ... These limitations highlight / reveal / underline / are evidence of the difficulty of collecting data on
- A number of limitations may / might / could have influenced the results obtained. One possible source of error is ... An additional / Another possible source of error is ...
- Since / Given that / As the focus of the study was on X ... there is a possibility that dissimilar results would have arisen if the focus had been on Y.
- The restricted use of X could account for / be the reason for / explain why ...
- There are several sources for / causes of / reasons for possible error. A major source of unreliability / uncertainty / contamination is in the method used to ...
- Unfortunately, it was not possible / we were unable to investigate the significant relationships of X and Y further because / due to the fact that Z is ...
- Inevitably / As expected / As anticipated, there were some discrepancies / inaccuracies / problems due to ...
- The performance was less than optimal as a result of ...
- One downside / disadvantage / negative factor regarding our methodology is that ...
- Further data collection is required / would be needed to determine exactly how X affects Y.



Limitations are not properly acknowledged in the scientific literature. J Clin Epidemiol. 2007 Apr;60(4):324-9.

<https://www.ncbi.nlm.nih.gov/pubmed/17346604>



Stating the Obvious: Writing Assumptions, Limitations, and Delimitations

<https://www.phdstudent.com/Choosing-a-Research-Design/stating-the-obvious-writing-assumptions-limitations-and-delimitations>

Next session SEP 7: Conference Posters

Find further details of the UWA GRS Writing Group, including advice sheets to download, see:

www.postgraduate.uwa.edu.au/students/resources/communities#writinggroup