

## DATA RELIABILITY AND VALIDITY

One of the key aspects of meeting a publishable, academic standard for a case study is ensuring that the data that is being reported is both reliable and valid. The ability to demonstrate reliability and validity in your research/evaluation will provide the reader (or reviewer) with confidence in the information that they are being presented.

**Reliability** refers to the extent that the data provided is “consistent” and “replicable”. Bryman and Teeven (2005, 56-57), identify three concepts when verifying reliability:

1. **Stability** – the extent to which the measured data remain steady (all other factors being equal) when measured at two different points in time (this is often measured using a test-retest method).  
*For example, if program participants report their monthly income at a certain amount, then when asked again one week later report a different monthly income, this suggests a lack of stability in the data and provides questionable reliability.*
2. **Internal reliability** – the extent to which measured data is consistent with related data that appear to measure associated or related data.  
*For example, it would be consistent and reliable for program participants to indicate that they are benefitting from the program if their livelihoods have improved as a result of their participation (i.e. increased education). However, if they indicate that they are benefitting, but there can be no observed improvement in livelihoods, this suggests a lack of internal reliability of data.*
3. **Inter-observer consistency** – the extent to which two independent observers will document and report data in a consistent fashion.  
*For example, in a focus group observation, one observer notes that program participants reported that the project was inclusive of the whole community and documented this comment. Another observer of the group, however, noted and documented that the women of the group were not given an opportunity to speak. Taken independently, these observations would appear conflicting. If these two observations are not reconciled, they would indicate a lack of inter-observer consistency and consequently, questionable reliability.*

**Validity** refers to the extent that the data being collected and analysed actually measures the issue or the concept that is being discussed or studied. Bryman and Teeven (2005, 58-59), identify four concepts when verifying validity:

1. **Face validity** – the intuitive review of the measured data by researchers or external experts to determine if the data appears to logically measure the concept or issue of interest.  
*For example, data that notes an increase in the exposure to a program would have face validity in measuring participant awareness of the program/issues. However, if increased exposure is being used as a measure of the participant’s support for the program, this may not have face validity as an increase in exposure does not necessarily mean participants support the program, only that they are using it.*
2. **Concurrent validity** – the use of a related criterion (measure) that can be used to justify the validity of data as a measure for a concept or issue of interest.

*For example, if one wishes to use an increase of awareness as a measure for increased empowerment of program participants, one could establish concurrent validity by providing data that shows that in this context, awareness has been shown to empower participants.*

3. **Construct validity** – the use of a hypothetical or theoretical presumption to determine if the measured data can be validated against what would be expected based on a constructed understanding of the concept or issue of interest.

*For example, if it has been hypothesized that gender equity within a community will have economic benefits at the household level, then construct validity would be determined by verifying if the measured data reflects this construct (i.e. that a community that demonstrates gender equity will have more positive economic benefits than a similar community where there is little equity).*

4. **Convergent validity** – the use of multiple measures of data exploring the same concept or issue of interest. For convergent validity to be verified, each measure should support the assertions of the other measures that are targeting the same concept or issue of interest.

*For example, if school attendance rates are being used as a measure of child welfare, then data from parents that suggests that their children's increased attendance at school has improved their wellbeing would provide another measure to support the convergent validity of this measure.*

Verifying data for reliability and validity is an important during data collection and analysis. When collecting data the various aspects of reliability need to be considered to ensure that analysis and reporting will produce reliable results.

Reference source: [Bryman, A. & Teevan, J. \(2005\). \*Social Research Methods\*, Canadian Edition. Oxford University Press.](#)