

Background to Transdisciplinary Research Checklist

Bruce Small

AgResearch, Private Bag 3214 Hamilton

Bruce.small@agresearch.co.nz

The Transdisciplinary Research Checklist is adapted from a measure of Science Team Process Success Factors in Transdisciplinary Research developed by Small, Payne and Montes de Oca Munguia (2015). They reviewed the transdisciplinary research literature and identified the following eight research process factors (one factor, leadership, has two sub-components), believed by scholars, to be important to the success of transdisciplinary research projects:

1. Team Leadership
 - a. balancing power and encouraging co-operation in the team
 - b. communication and motivation
2. Team building (and maintenance of team social capital)
3. Collaboration (amongst team members and disciplines)
4. Defining the common research problem
5. Problem orientation of team members
6. Interdisciplinary understanding and knowledge dissemination amongst the team
7. Time and resource availability to project
8. Stakeholder influence on project

Small et al. (2015) developed a set of reliable scales to measure each of the above constructs (i.e., multi-item scale for each construct) and provided evidence of validity of each construct using two proxy measures of project success as validity criteria. The two proxy validity criteria were:

1. Research team's perceptions of immediate project success
2. Research team's expectations of long-term project impact regarding the research issue/problem.

All success scales exhibited moderate to strong (as defined by Cohen's conventions for the behavioural sciences) correlations with either one or both of the validity criteria. This suggests that these research process factors are indeed relevant to the success of transdisciplinary research (see: Small, Payne and Montes de Oca Munguia, (2015) for further details about the scale development and statistical properties).

Therefore, the Transdisciplinary Research Checklist (i.e., the question items but with-out the scaled numeric response set) was designed to help increase the success of transdisciplinary projects by reminding project team members to think about and address these important process factors. Note that wording of some of the items has been slightly adapted to suit the context of a checklist. Under each item it may be useful to note the actions being taken to address the success factor.

References

- Cohen, J. (1988). *Statistical power analysis for the behavioural sciences*. 2nd ed. Hillsdale, L. Erlbaum Associates.
- Small, B., Payne, T., and Montes de Oca Munguia, O. (2015). Developing reliable and valid measures for science team process success factors in transdisciplinary research. *The International Journal of Interdisciplinary Organizational studies*, Vol. 10(2), pp.1-22.
- Tress, B., Tress, G. and Fry, G. (2005). Defining integrative research concepts and process of knowledge production. In B. Tress, G. Tress, G. Fry and P. Odam (eds.). *From landscape research to landscape planning: aspects of integration, education and application* (pp. 13-26), Heidelberg: Springer.