

Assessing efficiency and effectiveness of the case study's problem solving

Q19	How elaborate is the problem and the case study's specific contribution to the problems solution?	The question assumes that an elaborated understanding of the problem and of the case study contribution to its solution is a sign of high inter- and transdisciplinary quality.	
Q20	How likely is the case study to make a substantial contribution to problem solving for subsequent potentially similar case studies?	The question asks the reviewer to assess whether the case study will support problem solving.	

Assessing management, social and leadership skills

Q21	Describe the management structures involved in this case study Assess the transdisciplinary requirements	The question gets a clear picture of management structures and transdisciplinary requirements.	
Q22	How well do the management structures match and support the case study's goal and combination of disciplines and fields of expertise?	The question assumes that an elaborated management structure is a sign of high inter- and transdisciplinary quality.	
Q23	What is the type of leadership demonstrated in the case study? A) Small and collated (Single leader, central leader, informal connections, face-to-face processes, teambuilding, leader needs process skills B) Large and dispersed (Multiple leaders/champions, leaders in brokerage positions, coordination needed among leaders, leaders as translators and conflict handlers)		
Q24	Does the case study demonstrate collaborative skills (open mindedness, self-reflection, dealing with changing hierarchies, and ability to bear and manage tensions)?	The question assumes that if the case study shows core values of inter- and transdisciplinary ethics, this is a sign of high inter- and transdisciplinary quality.	

Assessing team structure (well-structured vs. pseudo team)

Q25	Is teamwork mentioned in this case study? What are the measures taken to encourage team work?	The question focuses on whether the case study is based on teamwork.	
Q26	How many teams are mentioned?	The question checks on the number of teams involved in the case study: one, two, three or more teams related to this case study? If more than one, are there good inter-team relations?	
Q27	Does the team have clear objectives?	These questions Q22, 23, 24, 25, 26 and 27 determine whether the team/s are well structured or not?	
Q28	Do team members work closely together to achieve the team's objectives?		
Q29	Are there different roles for team members within this team?		
Q30	Is the team recognized by the community/department/s/official organizations as a clearly defined team?		
Q31	Does the team meet regularly to discuss its effectiveness and how it could be improved?		
Q32	How many people are there in the team/s? 2-5 people <input type="checkbox"/> 6-9 people <input type="checkbox"/> 10-15 people <input type="checkbox"/> more than 15 <input type="checkbox"/>		

Actors and competences

Q33	Do the disciplinary composition and the competence in the team permit the treatment of the essential aspects of the problem or of the case study?	The question focuses on identification of transdisciplinarity in the team/s.	
Q34	Are the competences of the various disciplines appropriate to the problem and its solution (relevant knowledge, role in the case study, possibilities for implementing results)?	The question checks for competences of the different disciplines and whether these competences are relevant to the problem?	

Problem formulation, focus, goals, and criteria of success

Q35	Does the case study take up a One Health problem, and how is this problem relevant (to what?)	The question focuses on identification of One Health	
Q36	Is the One Health problem adequately translated into scientific questions? Is the current state of knowledge taken into consideration and what is innovative in relation to this state of knowledge	The question checks the scientific questions raised, as well as probes for contribution to new knowledge	
Q37	Do the methods envisioned, the interfaces of transdisciplinary collaboration, the form of integration in practice, and the outcome of the case study fit the solution strategy sought for in One Health?	The question checks for One Health objectives in transdisciplinarity and for knowledge integration	

References for the tool for transdisciplinarity in One Health

1. Zinsstag J, Schelling E, Wyss K, Mahamat MB. Potential of cooperation between human and animal health to strengthen health systems. *Lancet* 2005; 366: 2142–5.
2. Choi BCK, Pak AWP. Multidisciplinarity, interdisciplinarity and transdisciplinarity in health research and policy: 1. Definitions, objectives, and evidence of effectiveness. *Clin Investig Med* 2006; **29**: 351–64.
3. Whitmee S, Haines A, Beyrer C, *et al.* Safeguarding human health in the Anthropocene epoch: report of The Rockefeller Foundation–Lancet Commission on planetary health. *Lancet* 2015; **6736**: 1–56.
4. Zinsstag J. Convergence of ecohealth and one health. *Ecohealth* 2012; **9**: 371–3.
5. Stokols, D., Harvey, R., Gress, J., Fuqua, J., & Phillips, K. (2005). In vivo studies of transdisciplinary scientific collaboration: lessons learned and implications for active living research. *American journal of preventive medicine*, 28(2), 202-213.
6. Pohl, C., Perrig-Chiello, P., Butz, B., Hadorn, G. H., Joye, D., Lawrence, R., ... & Wastl-Walter, D. (2011). Questions to evaluate inter-and transdisciplinary research proposals. Working paper. Bern: td-net for Transdisciplinary Research. www.transdisciplinarity.ch/documents/td-Evaluation2011_workingpaper.pdf (accessed May 6, 2016).
7. Buttigieg, S. C., West, M. A., & Dawson, J. F. (2011). Well-structured teams and the buffering of hospital employees from stress. *Health Services Management Research*, 24(4), 203-212.
8. Gray, B. (2008). Enhancing transdisciplinary research through collaborative leadership. *American journal of preventive medicine*, 35(2), S124-S132.

Interdisciplinarity Competence Scale

(Adapted from Lattuca LR, Knight D, Bergom I. Developing a measure of interdisciplinary competence. *International Journal of Engineering Education.* 2013;29(3):726-39.

How do I fill in this survey?

- Please read each question carefully and respond to the items as accurately as you can.
- Do not spend too long thinking about your responses to an item – usually your first reaction is the best one.
- Most statements ask you to indicate *the degree or extent of your view* by marking the right box on a predetermined scale which best reflects your opinion. *Always mark one box for each question or statement.*

For example in the following statement, you would mark the box **Agree** if you “agree” with the statement that as a team “We all influence each other”.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
We all influence each other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

To what extent do you agree with the following?

Please indicate the extent to which you either agree or disagree with each statement.

A. Interdisciplinary Skills	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
a) I value reading about topics outside of my discipline	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) I enjoy thinking about how different fields and approach the same problem in different ways.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Not all <i>One Health</i> problems have purely technical solutions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) In solving <i>One Health</i> problems I often seek information from experts in other academic fields.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Given knowledge and ideas from different fields, I can figure out what is appropriate for solving a <i>One Health</i> problem.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) I see connections between ideas in my discipline and ideas in other fields including humanities and social sciences.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) I can take ideas from outside my discipline and synthesize them in ways that help me better understand	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) I can use what I have learned in one field in another setting.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

B. Reflective Behavior	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
a) I often step back and reflect on what I am thinking to determine whether I might be missing something.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) I frequently stop to think about where I might be going wrong or right with a problem solution.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<i>C. Recognizing Disciplinary Perspectives</i>	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
a) If asked, I could identify the kinds of knowledge and ideas that are distinctive to different fields of study	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) I recognize the kinds of evidence that different fields of study rely on.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) I'm good at figuring out what experts in different fields have missed in explaining a problem/solution	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments and feedback

Do you have additional comments you would like to make in relation to the issues covered in this survey?



Shared Leadership

- Shared leadership refers to a team property whereby leadership is distributed among team members rather than focused on a single designated leader.

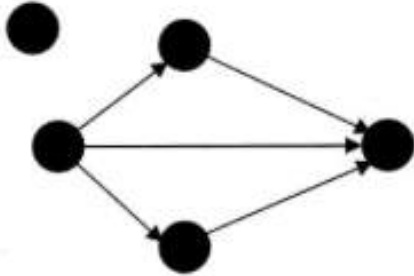
Carson, J. B., Tesluk, P. E., & Marrone, J. A. (2007). Shared leadership in teams: An investigation of antecedent conditions and performance. *Academy of management Journal*, 50(5), 1217-1234.

Previous Definitions and Measures of Shared Leadership

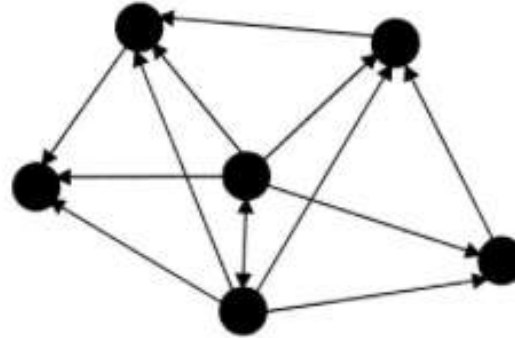
Study	Definition	Measure	Dependent Variable
Avolio, Jung, Murry, and Sivasubramaniam (1996)	No explicit definition given, but shared leadership is essentially viewed as transformational leadership manifested at the group level in highly developed teams.	Team Multifactor Leadership Questionnaire (TMLQ – Form 5X) aggregated to the team level	Self-reported ratings (undergraduate project team effectiveness)
Pearce and Sims (2002)	Distributed influence from within the team (p. 172). Lateral influence among peers (p. 176).	Ratings (aggregated to team level) on behavioral scales for five leadership strategies: aversive, directive, transactional, transformational, and empowering	Self-reported and manager ratings of seven effectiveness dimensions (automobile change management teams)
Sivasubramaniam, Murry, Avolio, and Jung (2002)	Collective influence of members in a team on each other (p. 68). How members of a group evaluate the influence of the group as opposed to one individual within or external to the group (p. 68).	Team Multifactor Leadership Questionnaire (TMLQ – Form 5X) aggregated to the team level	Team potency (self-ratings at times 1 and 2) and team grades assigned by instructor (undergraduate project team effectiveness).
Pearce and Conger (2003)	A dynamic, interactive influence process among individuals in groups for which the objective is to lead one another to the achievement of group or organizational goals or both. . . . [L]eadership is broadly distributed among a set of individuals instead of centralized in [the] hands of a single individual who acts in the role of a superior (p. 1).	Not applicable	Not applicable
Pearce, Yoo, and Alavi (2004)	Simultaneous, ongoing, mutual influence process within a team that is characterized by “serial emergence” of official as well as unofficial leaders (p. 48).	Ratings (aggregated to team level) on behavioral scales for four leadership strategies: directive, transactional, transformational, and empowering	Self-ratings of problem-solving quality and effectiveness (virtual teams of student social workers)
Ensley, Hmieleski, and Pearce (2006)	Team process where leadership is carried out by the team as a whole, rather than solely by a single designated individual (p. 220).	Ratings (aggregated to team level) on behavioral scales for four leadership strategies: directive, transactional, transformational, and empowering	Growth index for new ventures, consisting of the average of firm revenue growth and employee growth rates (new venture TMTs)
Mehra, Smith, Dixon, and Robertson (2006)	Shared, distributed phenomenon in which there can be several (formally appointed and/or emergent) leaders (p. 233).	Qualitative coding based on visual analysis of leadership network diagrams	Team sales divided by team size (financial services sales teams)

Leadership Sociograms

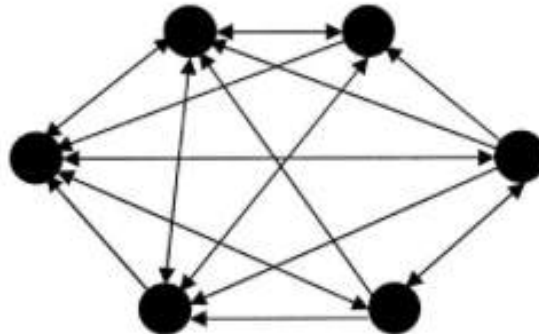
Lowest Level of
Shared Leadership
(score = 2.40)



Median Level of
Shared Leadership
(score = 3.15)

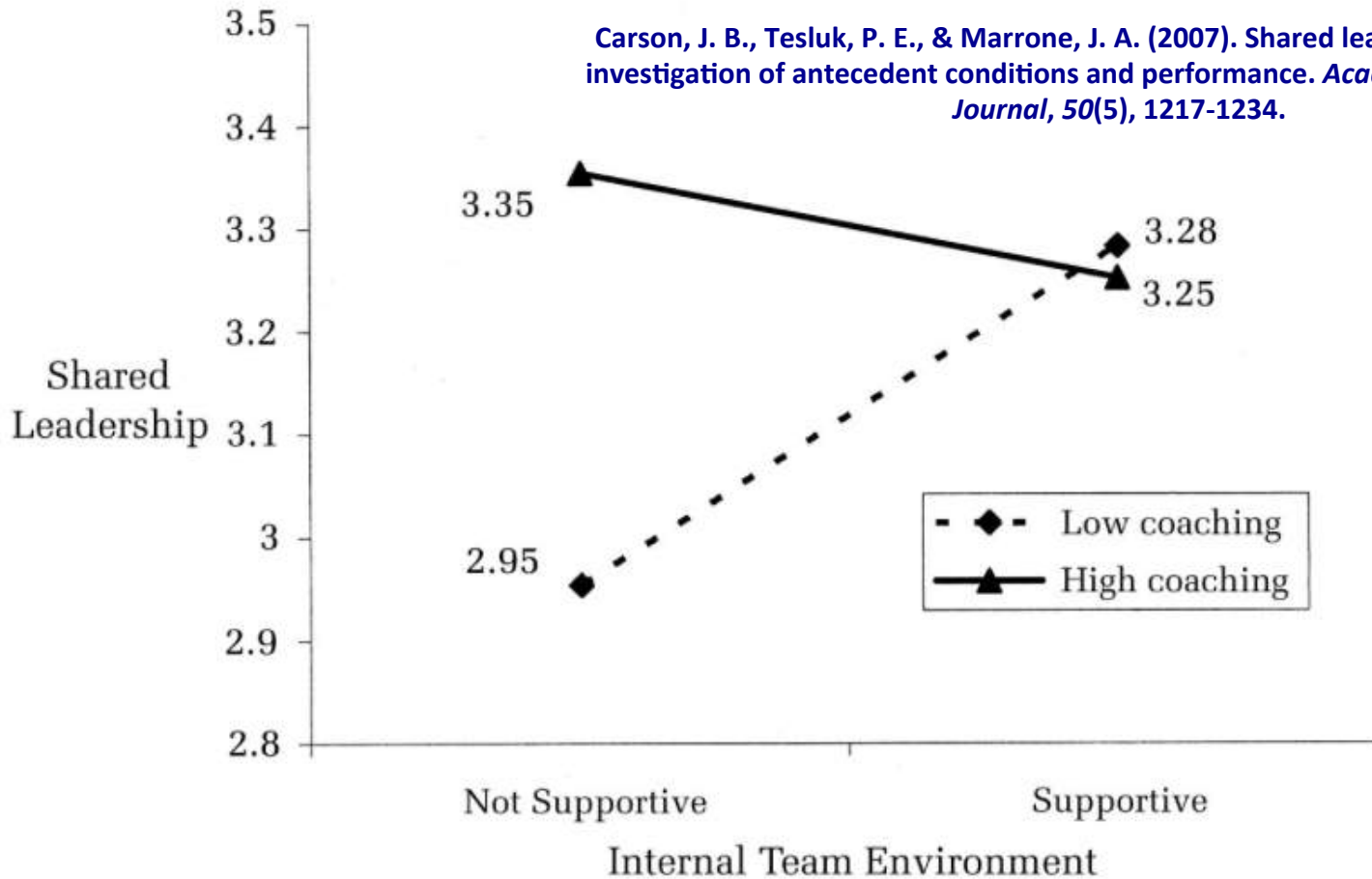


Highest Level of
Shared Leadership
(score = 3.90)



Carson, J. B., Tesluk, P. E., & Marrone, J. A. (2007). Shared leadership in teams: An investigation of antecedent conditions and performance. *Academy of management Journal*, 50(5), 1217-1234.

The Moderating Effect of Coaching on the Relationship between Internal Team Environment and Shared Leadership



An internal team environment consisting of shared purpose, social support, and voice is positively related to the level of shared leadership in a team.

Team coaching by an external leader interacts with the internal team environment in predicting shared leadership: coaching is more strongly related to shared leadership when the internal team environment is unsupportive.

Carson, J. B., Tesluk, P. E., & Marrone, J. A. (2007). Shared leadership in teams: An investigation of antecedent conditions and performance. *Academy of management Journal*, 50(5), 1217-1234.

- Antecedent conditions for shared leadership and found that a team's internal environment and coaching by an external leader are important precursors for shared leadership.
- Coaching provided by an external team leader is particularly important for the development of shared leadership when teams lack a strong internal team environment.
- The findings extend previous research suggesting positive effects of shared leadership on team performance using a network-based measure of shared leadership that better captures the patterns of mutual influence inherent in the construct and a measure of performance that is less subject to common source variance and rating biases.

Governance

- 1. issue of different initiatives using different terms: One Health- Global Health – Planetary Health
- 2. Should we strive for a redefinition of health?
- 3. Transdisciplinarity: emphasizing community involvement
- 4. Clarity of leadership
- 5. Shared leadership

