

EXECUTIVE SUMMARY

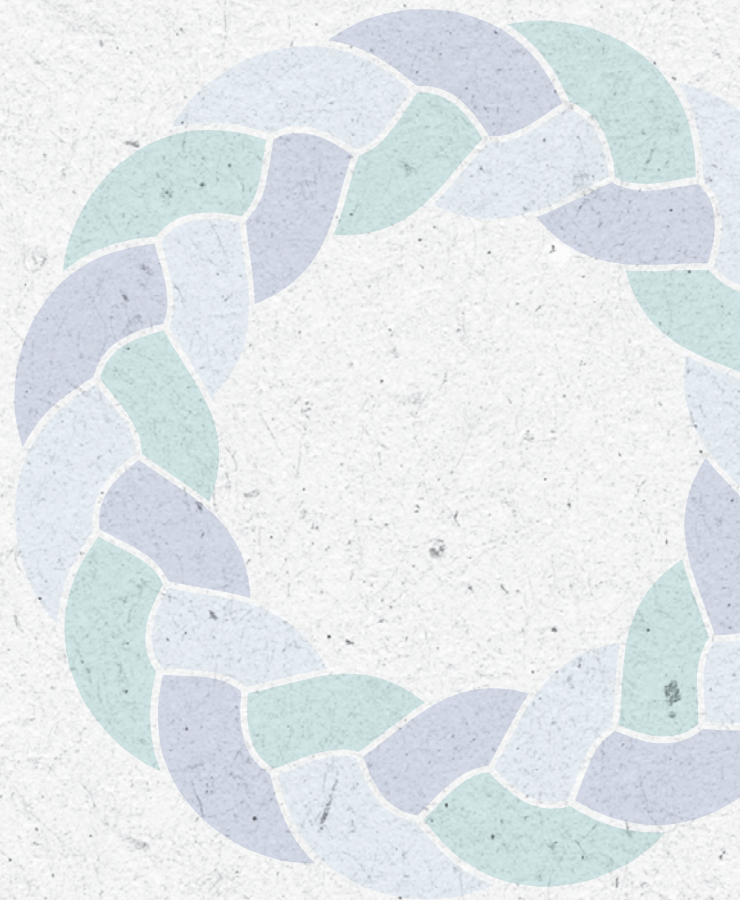
Rapid Evidence Assessment (REA)



ATTRIBUTES OF EFFECTIVE TEAMS AND INTERVENTIONS INCREASING TEAM EFFECTIVENESS

a summary of scientific literature

December 2019



Culture Review **Implementation**
our journey of positive change



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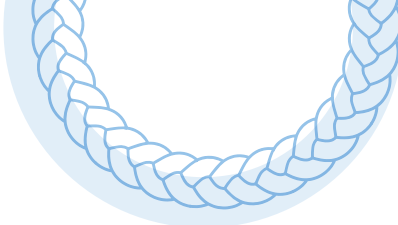
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What is a Rapid Evidence Assessment (REA)?

Rapid Evidence Assessments (REAs) use a specific research methodology to comprehensively identify the most relevant studies on a given topic, and select appropriate studies based on explicit criteria. In addition, two independent reviewers assess the methodological quality of the studies. In contrast to a conventional literature review, REAs are transparent, verifiable, and reproducible, and as a result, the likelihood of bias is considerably smaller.



Background

This REA was conducted by the Center for Evidence Based Management (CEBMA) for Novartis, a large global pharmaceutical company. Novartis, who are involved in projects to enhance organisational effectiveness and performance, approached CEBMA to undertake a REA to discover what is known in scientific literature about the attributes of effective teams and workgroups and the effectiveness of interventions aimed at increasing team effectiveness.

This REA attempts to confirm the key attributes of effective teams. It also considers the following considerations:

1. **What makes a team?**
2. **What is team effectiveness?**
3. **What are the attributes of effective teams?**
4. **What interventions influence team effectiveness?**
5. **How reliable and valid are team effectiveness models?**

Main findings

1. What makes a team?

The term 'team' is simply described as 'a group of people working together to achieve a goal.' However, 'teams' in the domain of social sciences has a range of specific characteristics that differentiate them from groups. A widely used definition is 'a team is a collection of individuals who are interdependent in their tasks, share responsibility for outcomes, see themselves (and who are seen by others) as a social

entity embedded in one or more larger social system (business unit or corporation), and, who manage their relationships across organisational boundaries.' (Cohen, 1997). Most researchers, however, prefer to summarise the characteristics of a typical team as 'a group of employees who are formally established, assigned some autonomy, and are interdependent'.

2. What is team effectiveness?

The research failed to provide a clear definition of what constitutes team effectiveness. This is because the research assessed showed that teams are not automatically more effective than a group of individual employees. In fact, group performance can decline due to several factors, including conflicts between individual group members or between individuals and group interests, or individuals may do less work in the group than they would if they had to complete work individually.

To provide a more meaningful definition this REA considered team effectiveness in relation to team performance. This enabled the following definition of team effectiveness to be confirmed: 'task

performance, contextual performance, and/or adaptive performance (learning, creativity and decision making) . . . some scholars also differentiate between performance behaviours and performance outcomes' (Beal, 2003).

Several authors also state that an effective team is not necessarily an efficient team. Team effectiveness, it was argued, concerns an evaluation of a team's results while team efficiency considers the 'costs' of achieving those results. Finally, the research stresses that intra-team processes such as communication, information sharing, and conflicts are often considered and essential elements of team effectiveness (Mathieu, 2008).

3. What are the attributes of effective teams?

The REA grouped effective team attributes into the following categories:

- » **Team composition** – characteristics of the team, including age, gender, level of education and career background.
- » **Team members' collective interpersonal perceptions and attitudes in teams** – these perceptions and attitudes can enable and support effective teamwork.
- » **Team cognition/knowledge** – the ways in which knowledge that is important to team functioning is organised, represented and distributed within teams.

4. Team composition

The REA findings revealed that while team composition or diversity is one of the most researched attributes of effective teams, the link between team effectiveness and team composition/diversity is small and sometimes negative. Further, research suggests it is important to consider and compensate for potential negative consequences of team composition on communication, cohesiveness and consequently performance.

The researchers also noted that of the 'Big Five Personality Traits' (emotional stability, extraversion, openness to experience, agreeableness and conscientiousness) within teams, only high levels of agreeableness and conscientiousness were related to better team performance.

5. Team attitudes due to individual team members' experiences

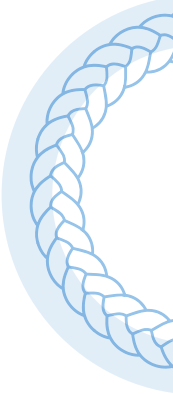
The following findings had the strongest impact on team effectiveness:

- » Intra-team trust is positively related to team performance.
- » Intra- team trust or trust within teams is most critical when teams physically work together and at the same times, they rely on each other's input and resources to complete a task, decision making is shared equally, and they have a shared work history and an expectation to work together in the future.
- » Group-level psychological safety (the ability of people to feel confident to speak up and suggest new ideas or processes in a safe environment free of ridicule or derision) has a moderate to large positive impact on team performance.
- » Team cohesion has a moderate to large impact on team performance.



- » Social cohesion has a moderate to large impact on a team's behavioural performance.
- » Teams that don't physically work together or at the same time (virtual) must have a high level of intra-team trust and social cohesion in order to effectively work together. This can be achieved by managers ensuring that they include an initial or several 'face to face' team meetings to prepare people to work together in virtual settings.

- » Social cohesion is strongly associated with team inclusion.
- » Team identification has a positive effect on social cohesion and consequently team performance.
- » Staff turnover has a negative effect on social cohesion and consequently team performance.



6. Team cognition/knowledge

- » Information sharing, the faith in and usage of the team's collective memory of processes, procedures and information (Transactive Memory System) and the degree to which a team interprets and communicates issues in a similar way (Cognitive consensus) all have a large, positive impact on team performance

- » Team learning does not automatically lead to performance improvement.
- » Teams need to regularly reflect on how the team is performing and what works and doesn't, otherwise the positive impacts of information sharing, TMS and cognitive consensus on team performance will decrease.

7. What interventions influence team effectiveness?

- » Team building has a moderate positive effect on team performance. Research reveals that the impact on team building is greater when:
 - The initiator is external, rather than internal to the team.
 - The rationale is corrective, rather than preventive.
 - Team members are not involved in the planning of the team building initiative.
 - Focus is on both the team's goals and interpersonal relations.
 - Team building is planned together with other interventions.
 - Team building is led by both an internal and external consultant.
 - Focus is on the group, not the individuals.
 - Team building initiative is supported by higher management.
- » Teamwork training has a large, positive effect on team performance.



- » Debriefing sessions have a moderate to large positive effect on team performance. Debriefs are most effective when the following are met:
 - The focus should be about learning and improvement, rather than evaluation or judgement. This approach yields more honest and accurate feedback and enhances experiential learning.
 - Focus on specific activities, episodes or events, rather than performance or results in general.
- Informed by a variety of perspectives and evidence sources (i.e. include data from multiple participants and at least one additional source of evidence).
- Facilitated and highly structured debriefs have a greater effect on team performance than non-facilitated or loosely structured debriefs.
- » Setting group goals has a moderate to large, positive effect on team performance.

8. How reliable and valid are team effectiveness models?

Whilst some models contain factors that have been shown to be strong predictors of team performance (i.e. social cohesion, goal clarity and trust) underlying

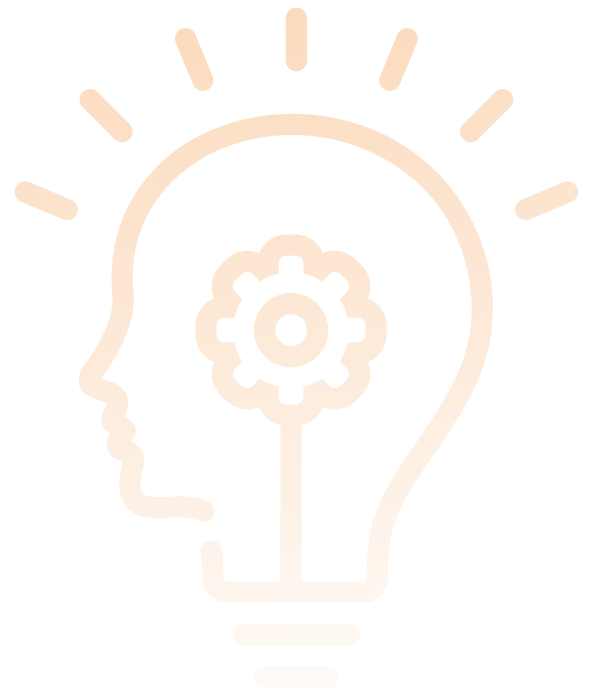
psychometric research of popular models is inadequate to establish their reliability and validity.

Conclusion

The attributes of effective teams are one of the most widely researched topics in Industrial-Organisational psychology. Most of the research assessed showed that effective teams are not so much determined by their composition, but through the presence of the following factors: trust, psychological safety, social cohesion, the level of information sharing, cognitive consensus and TMS.

More information

You can access more information in the *Rapid Evidence Assessment (REA) Attributes of Effective Teams and Interventions Increasing Team Effectiveness, a summary of scientific literature, December 2019.*



References

- Açıkgöz, A., & Latham, G. P. (2018). The mediating effect of team reflection on the relationship between a challenging learning goal and new product success. *Canadian Journal of Behavioural Science/Revue canadienne des sciences du comportement*, 50(3), 136.
- Bachrach, D. G., Lewis, K., Kim, Y., Patel, P. C., Campion, M. C., & Thatcher, S. M. B. (2019). Transactive memory systems in context: A meta-analytic examination of contextual factors in transactive memory systems development and team performance. *Journal of Applied Psychology*, 104(3), 464-493.
- Balkundi, P., & Harrison, D. A. (2006). Ties, leaders, and time in teams: Strong inference about network structure's effects on team viability and performance. *Academy of Management Journal*, 49(1), 49-68.
- Beal, D. J., Cohen, R. R., Burke, M. J., & McLendon, C. L. (2003). Cohesion and Performance in Groups: A Meta-Analytic Clarification of Construct Relations. *Journal of Applied Psychology*, 88(6), 989-1004.
- Bell, S. T. (2007). Deep-level composition variables as predictors of team performance: A meta-analysis. *Journal of Applied Psychology*, 92(3), 595.
- Bell, S. T., Villado, A. J., Lukasik, M. A., Briggs, A. L., & Belau, L. (2011). Getting Specific about Demographic Diversity Variable and Team Performance Relationships: A Meta-Analysis. *Journal of Management*, 37(3), 709-743.
- Breuer, C., Hüffmeier, J., & Hertel, G. (2016). Does trust matter more in virtual teams? A meta-analysis of trust and team effectiveness considering virtuality and documentation as moderators. *Journal of Applied Psychology*, 101(8), 1151.
- Bui, H., Chau, V. S., Degl'Innocenti, M., Leone, L., & Vicentini, F. (2019). The Resilient Organisation: A Meta-Analysis of the Effect of Communication on Team Diversity and Team Performance: International Review of Applied Psychology. *Applied Psychology*, 68(4), 621-657.
- Capiola, A., Alarcon, G. M., Lyons, J. B., Ryan, T. J., & Schneider, T. R. (2019). Collective Efficacy as a Mediator of the Trustworthiness - Performance Relationship in Computer-Mediated Team-based Contexts. *The Journal of Psychology*, 153(7), 732-757.
- Chiocchio, F., & Hélène, E. (2009). Cohesion and Performance: A Meta-Analytic Review of Disparities Between Project Teams, Production Teams, and Service Teams. *Small Group Research*, 40(4), 382-420.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Earlbaum Associates.
- Cohen, S. G., & Bailey, D. E. 1997. What makes teams work: Group effectiveness research from the shop floor to the executive suite. *Journal of Management*, 23: 239-290.
- DeChurch, L. A., & Mesmer-Magnus, J. R. (2010). The cognitive underpinnings of effective teamwork: A meta-analysis. *Journal of Applied Psychology*, 95(1), 32.
- De Jong, B. A., Dirks, K. T., & Gillespie, N. (2016). Trust and team performance: A meta-analysis of main effects, moderators, and covariates. *Journal of Applied Psychology*, 101(8), 1134.
- De Jong, J. P., & Fodor, O. C. (2017). Attuning to individual work routines and team performance. *Team Performance Management*, 23(7/8), 385-406.
- Delise, L. A., Gorman, C. A. P., Brooks, A. M. P., Rentsch, J. R. P., & Steele-Johnson, D. P. (2010). The effects of team training on team outcomes: A meta-analysis. *Performance Improvement Quarterly*, 22(4), 53.
- Edmondson, A. (1999). Psychological safety and learning behavior in work teams. *Administrative Science Quarterly*, 44(2), 350-383.
- Edmondson, A.C. (2003). *Managing the Risk of Learning: Psychological Safety in Work Teams*. In West, Michael A.; Tjosvold, Dean; Smith, Ken G. (eds.). *International Handbook of Organisational Teamwork and Cooperative Working*. New York: Wiley. pp. 255-275.
- Eisele, P. (2013). Validation of the Team Diagnostic Survey and a Field Experiment to Examine the Effects of an Intervention to Increase Team Effectiveness. *Group Facilitation*(12), 53-70.
- Eisele, P. (2015). The predictive validity of the team diagnostic survey: Testing a model with performance and satisfaction as output variables. *Team Performance Management*, 21(5/6), 293-306.
- Evans, C. R., & Dion, K. L. (1991). Group cohesion and performance: A meta-analysis. *Small Group Research*, 22(2), 175.
- Evans, C. R., & Dion, K. L. (2012). Group Cohesion and Performance: A Meta-Analysis. *Small Group Research*, 43(6), 690-701.
- Fang, H. M., & Wen-Ching, C. (2014). The Effects of member familiarity, task results visibility and perceived co-worker loafing on technology-supported team performance: social loafing effect perspective. *Asia Pacific Management Review*, 19(4), 361.
- Frazier, M. L., Fainshmidt, S., Klinger, R. L., Pezeshkan, A., & Vacheva, V. (2017). Psychological safety: A meta-analytic review and extension. *Personnel Psychology*, 70(1), 113-165.

- Greer, L. L., de Jong, B. A., Schouten, M. E., & Dannals, J. E. (2018). Why and when hierarchy impacts team effectiveness: A meta-analytic integration. *Journal of Applied Psychology*, 103(6), 591.
- Guillaume, Y. R. F., Brodbeck, F. C., & Riketta, M. (2012). Surface- and deep-level dissimilarity effects on social integration and individual effectiveness related outcomes in work groups: A meta-analytic integration. *Journal of Occupational and Organisational Psychology*, 85(1), 80.
- Gully, S. M., Joshi, A., Incalcaterra, K. A., & Beaubien, J. M. (2002). A meta-analysis of team-efficacy, potency, and performance: Interdependence and level of analysis as moderators of observed relationships. *Journal of Applied Psychology*, 87(5), 819-832.
- Gully, S. M., Devine, D. J., & Whitney, D. J. (MA - 2012). A meta-analysis of cohesion and performance: Effects of level of analysis and task interdependence. *Small Group Research*, 43(6), 702-725.
- Haas, H. (2010). How can we explain mixed effects of diversity on team performance? A review with emphasis on context. *Equality, Diversity and Inclusion: An International Journal*, 29(5), 458-490.
- Hackman, J.R. (2002), *Leading Teams: Setting the Stage for Great Performance*, Harvard Business School Press, Boston.
- Hackman, J.R. and Wageman, R. (2005), "A theory of team coaching", *Academy of Management Review*, Vol. 30, pp. 269-87.
- Hopp, C., & Zenk, L. (2012). Collaborative team networks and implications for strategic HRM. *The International Journal of Human Resource Management*, 23(14), 2975.
- Horwitz, S. K., & Horwitz, I. B. (2007). The effects of team diversity on team outcomes: A meta-analytic review of team demography. *Journal of Management*, 33(6), 987-1015.
- Hülsheger, U. R., Anderson, N., & Salgado, J. F. (2009). Team-level predictors of innovation at work: A comprehensive meta-analysis spanning three decades of research. *Journal of Applied Psychology*, 94(5), 1128.
- Jaakson, K., Reino, A., & McClenaghan, P. B. (2019). The space between – linking trust with individual and team performance in virtual teams. *Team Performance Management*, 25(1/2), 30-46.
- Kennedy, D. M., Vozdolska, R. R., & McComb, S. A. (2010). Team Decision Making in Computer-Supported Cooperative Work: How Initial Computer-Mediated or Face-to-Face Meetings Set the Stage for Later Outcomes. *Decision Sciences*, 41(4), 933.
- Klein, C., DiazGranados, D., Salas, E., Huy, L., Burke, C. S., Lyons, R., & Goodwin, G. F. (2009). Does Team Building Work? *Small Group Research*, 40(2), 181-222.
- Kleingeld, A., van Mierlo, H., & Arends, L. (2011). The effect of goal setting on group performance: A meta-analysis. *Journal of Applied Psychology*, 96(6), 1289.
- Konradt, U., Schippers, M. C., Garbers, Y., & Steenfatt, C. (2015). Effects of guided reflexivity and team feedback on team performance improvement: The role of team regulatory processes and cognitive emergent states. *European Journal of Work and Organisational Psychology*, 24(5), 777.
- Kozlowski, S. W. J., & Ilgen, D. (2006). Enhancing the effectiveness of work groups and teams. *Psychological Science in the Public Interest*, 7, 77-124.
- Lin, C., Standing, C., & Liu, Y.-C. (2008). A model to develop effective virtual teams. *Decision Support Systems*, 45(4), 1031.
- Mann, R. D. (1959). A review of the relationships between personality and performance in small groups. *Psychological Bulletin*, 56: 242-270.
- Mathieu, J., Maynard, M. T., Rapp, T., & Gilson, L. (2008). Team effectiveness 1997-2007: A review of recent advancements and a glimpse into the future. *Journal of Management*, 34(3), 410-476.
- McEwan, D., Ruissen, G. R., Eys, M. A., Zumbo, B. D., & Beauchamp, M. R. (2017). The effectiveness of teamwork training on teamwork behaviors and team performance: A systematic review and meta-analysis of controlled interventions. *PLoS ONE*, 12(1).
- Mesmer-Magnus, J. R., & DeChurch, L. A. (2009). Information sharing and team performance: A meta-analysis. *Journal of Applied Psychology*, 94(2), 535.
- Mesmer-Magnus, J., Niler, A. A., Plummer, G., Larson, L. E., & DeChurch, L. A. (2017). The cognitive underpinnings of effective teamwork: a continuation. *Career Development International*, 22(5), 507-519.
- Mohammed, S., & Dumville, B. C. (2001). Team mental models in a team knowledge framework: Expanding theory and measurement across disciplinary boundaries. *Journal of Organisational Behavior*, 22, 89-106.
- Mumford, M. D., Hunter, S. T., & Bedell-Avers, K. E. (Eds.). (2008). *Multi-level issues in creativity and innovation*. Emerald Group Publishing Limited.
- Peeters, M. A. G., Van Tuijl, H. F. J. M., Rutte, C. G., & Reymen, I. M. M. J. (2006). Personality and Team Performance: A Meta-Analysis. *European Journal of Personality*, 20(5), 377-396.
- Petticrew, M., & Roberts, H. (2006). How to appraise the studies: an introduction to assessing study quality. *Systematic reviews in the social sciences: A practical guide*, 125-163.

- Prewett, M., Walvoord, A. G., Stilson, F. B., Rossi, M., & Brannick, M. (2009). The Team Personality-Team Performance Relationship Revisited: The Impact of Criterion Choice, Pattern of Workflow, and Method of Aggregation. *Human Performance*, 22(4), 273-296.
- Robertson, R., Gockel, C., & Brauner, E. (2012). Trust your teammates or bosses? Differential effects of trust on transactive memory, job satisfaction, and performance. *Employee Relations*, 35(2), 222-242.
- Salas, E., DiazGranados, D., Klein, C., Burke, C. S., Stagl, K. C., Goodwin, G. F., & Halpin, S. M. (2008). Does team training improve team performance? A meta-analysis. *Human Factors*, 50(6), 903-933.
- Salas, E., Cooke, N.J. and Rosen, M.A. (2008), "On teams, teamwork, and team performance: discoveries and developments", *Human Factors: The Journal of the Human Factors and Ergonomics Society*, Vol. 50 No. 3, pp. 540-547.
- Santos, C. M., Uitdewilligen, S., & Passos, A. M. (2015). A temporal common ground for learning: The moderating effect of shared mental models on the relation between team learning behaviours and performance improvement. *European Journal of Work and Organisational Psychology*, 24(5), 710.
- Santos, J. P., Caetano, A., & Tavares, S. M. (2015). Is training leaders in functional leadership a useful tool for improving the performance of leadership functions and team effectiveness? *Leadership Quarterly*, 26(3), 470.
- Schein, E. H. (1969). *Process consultation: Its role in organisation development*. Reading, MA: Addison-Wesley.
- Schein, E. H. (1999). *Process consultation revisited: Building the helping relationship*. Reading, MA: Addison-Wesley.
- Schippers, M. C., Homan, A. C., & van Knippenberg, D. (2013). To reflect or not to reflect: Prior team performance as a boundary condition of the effects of reflexivity on learning and final team performance. *Journal of Organisational Behavior*, 34(1), 6.
- Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Houghton, Mifflin and Company.
- Shaughnessy, J. J., & Zechmeister, E. B. (1985). *Research methods in psychology*. Alfred A. Knopf.
- Shore, L. M., Randel, A. E., Chung, B. G., Dean, M. A., Ehrhart, K. H., & Singh, G. (2011). Inclusion and diversity in work groups: A review and model for future research. *Journal of Management*, 37, 1262-1289.
- Solansky, S. T. (2011). Team identification: a determining factor of performance. *Journal of Managerial Psychology*, 26(3), 247-258.
- Solansky, S. T. P., & Stringer, D. P. (2019). Collective Mind: A Study of Development and Team Performance. *Organisation Development Journal*, 37(3), 59-69.
- Svyantek, D. J., Goodman, S. A., Benz, L. L., & Gard, J. A. (1999). The Relationship Between Organisational Characteristics and Team Building Success. *Journal of Business and Psychology*, 14(2), 265.
- Tanghe, J., Wisse, B., & van der Flier, H. (2010). The Role of Group Member Affect in the Relationship between Trust and Cooperation. *British Journal of Management*, 21(2), 359.
- Tanghe, J., Wisse, B., & van der Flier, H. (2010). The Formation of Group Affect and Team Effectiveness: The Moderating Role of Identification. *British Journal of Management*, 21(2), 340.
- Tannenbaum, S. I., & Cerasoli, C. P. (MA - 2013). Do team and individual debriefs enhance performance? A meta-analysis. *Human Factors*, 55(1), 231-245.
- Turner, J. R., Chen, Q. P., & Danks, S. (2014). Team Shared Cognitive Constructs: A Meta-Analysis Exploring the Effects of Shared Cognitive Constructs on Team Performance. *Performance Improvement Quarterly*, 27(1), 83.
- Van Der Vegt, G. S., Bunderson, S., & Kuipers, B. (2010). Why turnover matters in self-managing work teams: Learning, social integration, and task flexibility. *Journal of Management*, 36(5), 1168-1191.
- Wageman, R. (1995). Interdependence and group effectiveness. *Administrative Science Quarterly*, 40: 145-180.
- Wageman, R., J. R. Hackman, and E. Lehman. (2005). "Team Diagnostic Survey." *Journal of Applied Behavioral Science*, 41(4): 373-98.
- Wang, J., Grand H-, L. C., Chen, T., & Leung, K. (2019). Team creativity/innovation in culturally diverse teams: A meta-analysis. *Journal of Organisational Behavior*, 40(6)
- Webber, S. S., & Donahue, L. M. (2001). Impact of highly and less job-related diversity on work group cohesion and performance: a meta-analysis. *Journal of Management*, 27: 141-162.
- Webber, S. S. (2008). Development of cognitive and affective trust in teams: A longitudinal study. *Small Group Research*, 39(6), 746-769.
- Widmann, A., & Mulder, R. H. (2018). Team learning behaviours and innovative work behaviour in work teams. *European Journal of Innovation Management*, 21(3), 501-520.
- Zhou, W., & Rosini, E. (2015). Entrepreneurial Team Diversity and Performance: Toward an Integrated Model. *Entrepreneurship Research Journal*, 5(1), 31-60.



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