

# A Meta-Analysis of the Virtual Teams Literature

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## Executive Summary

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Virtual teams are groups of individuals who work together in different locations (i.e. are geographically dispersed), work at interdependent tasks, share responsibility for outcomes and rely on technology for much of their communication. Virtual teams are becoming common in organizations due to globalization, interorganizational alliances, outsourcing and alternative work arrangements such as job sharing and telecommuting. Although a growing body of literature exists on virtual teams, few summaries of this knowledge are available. The reviews that do exist are qualitative, narrative reviews; no quantitative reviews, or meta-analyses, exist yet of this literature. Our study aims to provide this. Our meta-analytic review adds to the existing narrative reviews by quantifying the strength of the relationships between virtual team inputs (e.g., team characteristics, task design, supervisory behaviors), processes (e.g., communication, coordination), and team outcomes (e.g., performance, satisfaction, turnover).

We searched for research articles that contained empirical results and found over 200 articles on virtual teams. Of these, 50 had empirical results suitable for inclusion in this study. One hundred and sixty-one coefficients examining 34 relationships were found in these articles. They were examined in our meta-analysis when multiple studies examined the same set of variables, along with the moderating effects of type of subject (student versus employee), and level of analysis (individual versus group).

We found an overall negative relationship between virtuality and team processes implying that as teams become more geographically-distributed, frequency of communication declines, team spirit and cohesion weakens, and conflict increases. This could be because virtual team members typically have greater diversity, which can lead to cohesion difficulties (via different values and expectations) and create conflict. Also, electronic communication is leaner, with less feedback opportunities, leading to easier misinterpretations and attribution errors.

An overall positive relationship between virtuality and team effectiveness was found; however, this positive effect changed when the studies were split up for the moderation analyses. Specifically, for student subjects, virtualness was positively related to only productivity and negatively related to trust. For studies with employees (instead of students), virtualness was not related to quality, productivity or trust, and was weakly (positively) related to satisfaction. In one sense, this is good since it still implies that in practice the negative effect on team processes does not hurt team effectiveness; however, it also implies that we cannot generalize from student studies to the real world for the outcome relationships.

Other findings included: disposition to trust (an individual team member characteristic) was positively related to both processes and outcomes, process variables such as cohesion and communication were positively related to team effectiveness, and transformational leadership was positively related to team outcomes.

We found that many of the team design input variables that have been found to be important in traditional team research have not yet been studied with virtual teams, and that the majority of studies that have been completed used student subjects. Overall, there are many needs for more research on virtual teams. This meta-analysis should help researchers identify these, and should help practitioners understand some of the key design factors that affect how well the team will function.