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RESEARCH REPORT

Does Trust Matter More in Virtual Teams? A Meta-Analysis of Trust and Team Effectiveness Considering Virtuality and Documentation as Moderators

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Team trust has often been discussed both as requirement and as challenge for team effectiveness, particularly in virtual teams. However, primary studies on the relationship between trust and team effectiveness have provided mixed findings. The current review summarizes existing studies on team trust and team effectiveness based on meta-analytic methodology. In general, we assumed team trust to facilitate coordination and cooperation in teams, and therefore to be positively related with team effectiveness. Moreover, team virtuality and documentation of interactions were considered as moderators of this relationship because they should affect perceived risks during teamwork. While team virtuality should increase, documentation of interaction should decrease the relationship between team trust and team effectiveness. Findings from 52 studies with 54 independent samples (representing 12,615 individuals in 1,850 teams) confirmed our assumptions. In addition to the positive overall relationship between team trust and team effectiveness criteria ($\rho = .33$), the relationship between team trust and team performance was stronger in virtual teams ($\rho = .33$) as compared to face-to-face teams ($\rho = .22$), and weaker when team interactions were documented ($\rho = .20$) as compared to no such documentation ($\rho = .29$). Thus, documenting team interactions seems to be a viable complement to trust-building activities, particularly in virtual teams.

Keywords: trust, virtual teams, documentation, team effectiveness, meta-analysis

Virtual teams have developed from a somewhat "exotic" niche phenomenon to an established work design over the last 10–15 years (e.g., Gilson, Maynard, Jones Young, Vartiainen, & Hakonen, 2015; Hoch & Kozlowski, 2014). Today, most large companies rely on virtual teams at least to some extent (e.g., Perry, 2008; Society for Human Resource Management, 2012). One main challenge of virtual teams seems to be the development and maintenance of trust (e.g., Duarte & Snyder, 2006; Li, 2007), leading to suggestions how trust might be maintained under conditions of high virtuality. A critical presupposition of such effortful trust building strategies is that team trust is related to high team effectiveness. Interestingly, whereas trust has been shown to be a significant predictor of organizational outcomes for various referents of trust, such as direct supervisors or organizations (Colquitt, Scott, & LePine, 2007; Dirks & Ferrin, 2002), the impact of trust in working teams is less clear. Whereas some studies have revealed a positive relationship between team trust and team effectiveness (e.g., Davis, Schoorman, Mayer, & Tan, 2000; De Jong & Elfring, 2010), others have found no relationship (e.g., Hertel, Konradt, & Orlikowski, 2004) or even negative correlations (e.g., Dirks, 1999; Langfred, 2004).

The current study extends existing research in three central ways: First, we provide one of the first meta-analyses on trust and team effectiveness in working teams (see also De Jong, Dirks, & Gillespie, in press).[1] Second, we extend qualitative summaries on trust in virtual collaboration (e.g., Germain, 2011; Mitchell & Zigurs, 2009) by investigating whether virtuality moderates the

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[1] In accordance with established conventions (e.g., Kozlowski & Ilgen, 2006; Mathieu, Maynard, Rapp, & Gilson, 2008), we use the terms *team* and *group* interchangeably in this article.

relationship between trust and effectiveness in teams. Finally, we examine documentation of team interactions such as storage of written text, audio, or video recordings as a potential means to decrease the requirement of trust.

Conceptualization of Team Trust

Arguably, the most cited definition of trust conceptualizes trust as "the willingness of a party to be vulnerable to the actions of another party based on the expectations that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party" (Mayer, Davis, & Schoorman, 1995, p. 712). Mayer and colleagues (1995) defined trust as a dyadic construct between a trusting party (trustor) and a party to be trusted (trustee).[2] Considering trust at the team level, both the trustor and the referent of trust are comprised of multiple team members (Jarvenpaa, Knoll, & Leidner, 1998; Polzer, Crisp, Jarvenpaa, & Kim, 2006). Accordingly, we conceptualize team trust as aggregated trust in the team shared among the team members (see also Fulmer & Gelfand, 2012). Moreover, we consider team trust as an emergent state of teams arising from individual team members' experiences by collective sense-making about shared perceptions, attitudes, and experiences (De Jong & Elfring, 2010; Kozlowski & Klein, 2000). Based on the work by Mayer et al. (1995), we define *team trust* as the shared willingness of the team members to be vulnerable to the actions of the other team members based on the shared expectation that the other team members will perform particular actions that are important to the team, irrespective of the ability to monitor or control the other team members.

Team Trust and Team Effectiveness

Based on the integrative model of organizational trust (Mayer et al., 1995), we assume that trust impacts team effectiveness by enhancing specific risk-taking behaviors among team members, which in turn facilitate the broader team processes of coordination and cooperation in teams (see also Colquitt et al., 2007; Costa, 2003; Dirks, 1999; see Figure 1). The trust literature makes a fundamental distinction between trust as the willingness to be vulnerable and risk-taking behavior as the behavioral manifestation of trust (Mayer et al., 1995). In the team context, such risk-taking behavior includes the behavioral choice to share confidential information, to ask for help, to share and ask for feedback, to discuss conflicts and mistakes openly, and to abandon mutual control (Breuer, Hüffmeier, & Hertel, 2014; Edmondson, 2002). We distinguish these specific risk-taking behaviors from more general coordination and cooperation in teams because coordination and cooperation in a team are conceivable without any trust, such as in coercive situations or when risk is perceived to be absent (see Mayer et al., 1995; Rousseau, Sitkin, Burt, & Camerer, 1998; Schoorman, Wood, & Breuer, 2015). Cooperation is defined as a team process by which individuals interact and form psychological relationships for mutual gain or benefit (Smith, Carroll, & Ashford, 1995). Team coordination refers to the broader team processes of orchestrating the sequence and timing of an interdependent team workflow (e.g., Marks, Mathieu, & Zaccaro, 2001; Kozlowski & Bell, 2013).

We assume that team trust facilitates specific risk-taking behaviors such as reducing defensive control, open discussion of conflicts and mistakes, mutual feedback, and sharing of confidential information, which in turn should lead to more efficient coordination of team members' resources (time, effort, knowledge, etc.) to the team task. Moreover, team trust should enhance cooperation and social exchange (Blau, 1964) in teams by facilitating risk-taking behaviors such as helping behaviors and unilateral investments of effort due to general reciprocity expectations (Gouldner, 1960; Jones & George, 1998). Indeed, empirical research has shown trust in teams to be associated with specific risk-taking behaviors such as unilateral effort (e.g., Williams & Karau, 1991), abandonment of monitoring behavior (e.g., Costa & Anderson, 2011; Langfred, 2004), and open communication (e.g., Smith & Barclay, 1997). Costa and Anderson (2011) have shown that trust positively affects open communication in teams, influence acceptance from each other, and personal involvement with the team. In addition, empirical research has demonstrated that risk-taking behaviors such as information sharing (e.g., Kanawattanachai & Yoo, 2007; Mesmer-Magnus & DeChurch, 2009), sharing feedback (e.g., Losada, Sanchez, & Noble, 1990; Shepherd, Briggs, Reinig, Yen, & Nunamaker, 1996), open discussion of conflicts and mistakes (e.g., De Dreu, 2006; Tjosvold, Yu, & Hui, 2004), and unilateral investment of effort (Karau & Williams, 1993) are positively related to cooperation and coordination in teams. Moreover, defensive control behaviors often include nonproductive uses of resources preventing the team members from collaborating efficiently (McAllister, 1995). Therefore, reducing defensive control should enhance cooperation and coordination in teams. In addition, informal peer monitoring such as gossip about other coworkers (Loughry & Tosi, 2008) might increase conflict, hostility and stress among team members (for reviews see Ferrin, Bligh, & Kohles, 2007; Hertel, Geister, & Konradt, 2005; Loughry, 2010). Based on these mechanisms, we expect that team trust is generally positively related to team effectiveness.

The effectiveness of teamwork can be considered with respect to three main facets: Team members' attitudes, team information processing, and team performance (e.g., Costa, 2003; Hackman, 1987). Therefore, we used meta-analytic data to test the following predictions (see Figure 2 for a graphical illustration of the overall model):

> *Hypothesis 1:* Team trust is positively related with team-related attitudes, such as (*H1a*) satisfaction with the team, (*H1b*) commitment to the team, (*H1c*) perceived team cohesion, and (*H1d*) effort intentions toward the team.
>
> *Hypothesis 2:* Team trust is positively related with team-related information processing, such as (*H2a*) knowledge sharing and (*H2b*) team learning.
>
> *Hypothesis 3:* Team trust is positively related with team performance, such as (*H3a*) task performance and (H3b) contextual performance in teams.

In addition, demonstrating moderating conditions might help to integrate research findings that have not shown a significant rela-

[2] The integrative model of organizational trust by Mayer et al. (1995) does not address group performance in particular but refers more generally to any organizational outcome that results from risk-taking behavior and in turn influences future trustworthiness perceptions. Nevertheless, we built our theoretical rationale on this model and adapt it to the team context.

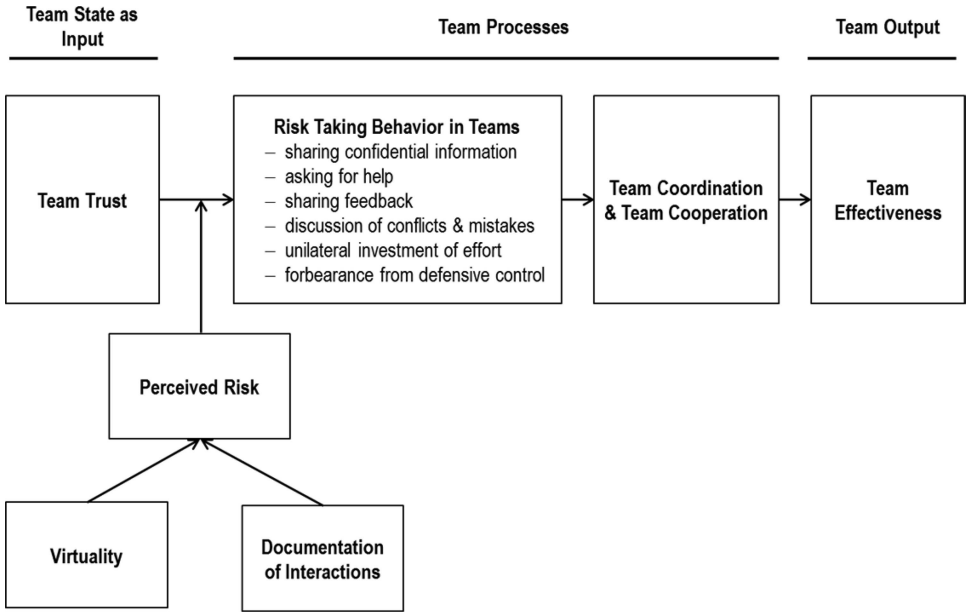

Figure 1. Illustration of the theoretical rationale underlying the postulated hypotheses.

tionship between team trust and team effectiveness (e.g., Dirks, 1999; Hertel et al., 2004). In general, team trust should be more strongly connected with team effectiveness when risks (e.g., to be exploited) are perceived to be high in a certain team. When risks are perceived to be low, team trust should be less strongly connected with team effectiveness. In the current research, we examined virtuality (operationalized as high degree of electronically mediated communication)[3] and documentation of interactions (defined as recording and storage of interactions between team members as written text, audio, or video recording) as two independent moderators of the team-trust–team-effectiveness link.

Virtuality as Moderator of the Team-Trust–Team-Effectiveness Link

Although virtuality of teamwork (e.g., Bell & Kozlowski, 2002; Hertel et al., 2005) provides many advantages for collaboration (e.g., Gilson et al., 2015), a high degree of electronic communication might increase perceived risks of collaboration due to reduction of social cues and fewer opportunities for social control (e.g., Jarvenpaa et al., 1998). Furthermore, electronically mediated communication is often connected with delayed responses and overlooked parts of information, increasing the risk of misunderstandings and conflicts (Montoya-Weiss, Massey, & Song, 2001). Role ambiguity has been shown to be stronger in computer-mediated collaboration as compared to face-to-face teams (Hung, Dennis, & Robert, 2004), and electronic communication can reduce the awareness of the specific working contexts of coworkers (Cramton, 2001), which might lead to misattributions when difficulties arise. Together, these processes should increase the perceived risk that individual efforts during teamwork might be exploited by other team members, which in turn should heighten the importance of trust, reflected in a stronger correlation between team trust and team effectiveness:

Hypothesis 4: Team virtuality moderates the relationship between team trust and team effectiveness such that the relationship is stronger when team virtuality is high rather than low.

Documentation of Interactions as Moderator of the Team-Trust–Team-Effectiveness Link

While electronically mediated communication is assumed to increase the need for trust in teams, other features of communication might decrease the impact of trust and provide promising means to compensate for the difficulties described above. Indeed, one side effect of electronically mediated collaboration is that

[3] While the conceptual discussion of team virtuality is still ongoing and somewhat controversial, including different potential dimensions of virtuality such as richness of used communication media, synchronicity of interactions, spatial distribution, or cultural heterogeneity (e.g., Hoch & Kozlowski, 2014; Kirkman & Mathieu, 2005), the relative degree of electronic communication is included in all definitions and can be considered as the minimal consensus in the literature. Moreover, the other mentioned dimensions are often highly related with the degree of electronic communication, for instance, when collaboration across long distances or across different cultural contexts requires electronic communication media. Therefore, we focus on high reliance on electronic communication as defining aspect of virtuality in the current meta-analysis. Interestingly, the data of this meta-analysis are congruent with this conceptualization, showing considerable correlations between the use of electronic communication media and other aspects of virtuality according to multicollinearity analyses. Using a principal components analysis for categorical data (e.g., Bijmolt, van Heerde, & Pieters, 2005; Hüffmeier, Freund, Zerres, Backhaus, & Hertel, 2011), most correlations exceeded the absolute value of .50, which is considered as threshold value for confounds among categorical moderator variables (Bijmolt et al., 2005), e.g., the correlation between electronically mediated collaboration and spatial distribution ($r = .83$), or the correlation between electronically mediated collaboration and media richness ($r = -.63$, $k = 54$ independent effect sizes).

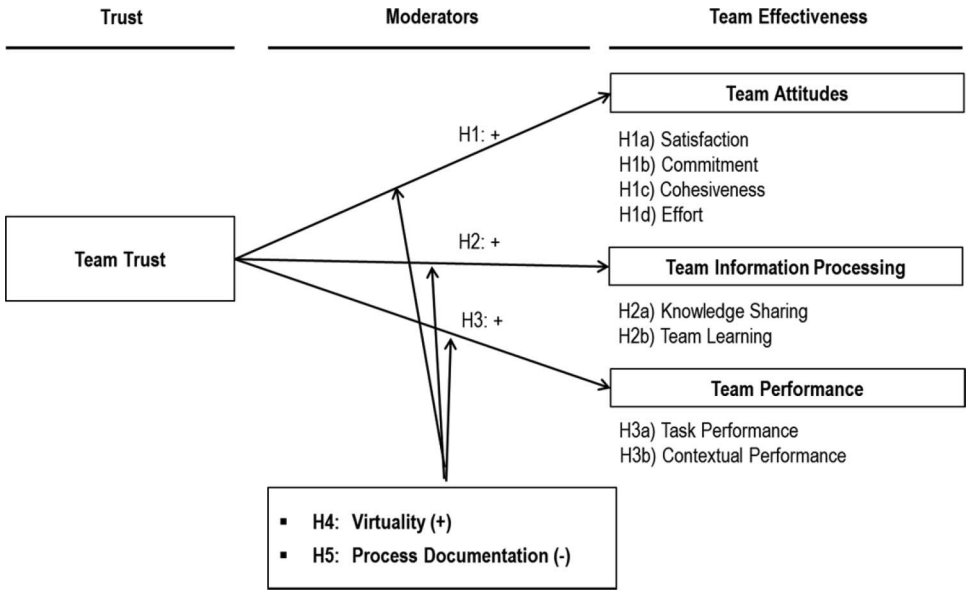

Figure 2. Overview of the main effects and moderators that were investigated as well as the respective hypotheses.

interactions are often automatically documented, for instance, as storage of e-mails, chat history logs, or recordings of video conferences. We assume that the documentation of interactions reduces perceived risks that individual efforts are exploited by other team members because documentation allows reviewing and verifying agreements and decisions in the team. Moreover, documentation of interactions should facilitate peer monitoring without requiring or binding additional time and resources of team members (e.g., De Jong & Dirks, 2012; Rousseau et al., 1998). However, given that documentation of interactions can also be realized in face-to-face teams, we consider documentation effects independently from effects of team virtuality.

In general, documentation of interactions should moderate the correlation between team trust and team effectiveness following the same rationale that we applied for virtuality, although in the reversed direction. Documentation and resulting reprocessability of team interactions should decrease the perceived risks of individual effort during teamwork, which in turn should reduce the importance of trust, reflected in a weaker correlation between team trust and team effectiveness:

> *Hypothesis 5:* Documentation of team members' interactions moderates the relationship between team trust and team effectiveness so that the relationship is weaker when interactions are documented rather than not documented.

By examining virtuality and documentation of interactions as separate moderators, we disentangled these two media aspects as separate determinants of the trust–effectiveness link in teams. If documentation of interactions in teams serves as a moderator of the team-trust–team-effectiveness link, the popular assumption that trust maintenance is always crucial in virtual teams might be overgeneralized.

Method

Literature Search and Study Collection

In this meta-analysis, we considered empirical studies published until June 2014 that examined the relationship between trust as team-level construct and team effectiveness, operationalized as team-related attitudes, team-related information processing, and/or team performance. Multiple search strategies were employed.[4] We obtained a total of 564 studies with potentially eligible results according to abstracts and keywords.

Inclusion and Exclusion Criteria

For inclusion in the meta-analysis, studies had to meet the following criteria: (a) examination of the relationship between trust operationalized as a team-level construct,[5] and team effectiveness in terms of team attitudes, team information processing, and/or team performance; (b) sufficient information for the calculation of effect sizes; and (c) provision of sufficient information for

[4] Multiple search strategies were employed: (a) electronic literature search in the databases Web of Science, PsycInfo, Dissertation Abstracts International, Google, and Google Scholar; (b) scanning the reference lists of relevant reviews or meta-analyses (Colquitt et al., 2007; Dirks & Ferrin, 2001, 2002; McEvily & Tortoriello, 2011); (c) conducting a hand search in relevant journals; and (d) posting requests for literature via forums and mailing lists and personally contacting authors to locate unpublished or working papers. A list of the journals included in the hand search is available on request from the authors.

[5] Studies that operationalized trust at the team level mostly used scales that averaged team members' individual trust in the other team members. Only three studies used scales that involved a referent shift involving perceptions of trust at the team level (e.g., member of this team trust one another).

coding the moderators. From the 564 obtained studies, a total of 54 independent samples reported in 52 studies met the criteria for inclusion in this meta-analysis (total number of 12,615 individuals in 1,850 teams). The average team size was 6.46 persons (SD = 8.70; Min = 2, Max = 60). The average team tenure was 1.60 years (SD = 1.16; Min = 0, Max = 9.70). The sample included both student project teams and professional teams from diverse industries and working areas.

Coding Procedure

Coding was performed by one of the authors and two additional trained coders using a standardized coding procedure. The average interrater reliability was satisfactory (Cohen's κ = .82). All discrepancies were discussed until a consensus was reached. For each effect size, we coded the following characteristics (see the Appendix for detailed coding information on each considered study, see Table 2 for overview over correlations between optimally scaled moderator variables).

Virtuality. The moderator virtuality considered as electronically mediated collaboration was coded in two categories (0 = face-to-face team; teams that were explicitly described as face-to-face teams or whose tasks required face-to-face interactions, k = 29, N = 2,048; 1 = virtual team; teams that collaborated primarily via electronic communication media, k = 25, N = 1,410).[6]

Documentation of interactions. Documentation of interactions in the teams was coded in two categories, reflecting the reprocessability (Dennis, Fuller, & Valacich, 2008) of all interactions between all team members (0 = no documentation of interactions or missing information about such documentation, k = 38, N = 2,740; 1 = documentation of interaction realized as text-based communication, or via chat history logs, audio or video recording of all of the team members' discussions, k = 16, N = 719).[7]

Measurements and study design. In addition, we considered four methodological moderators. First, we coded whether team performance was measured with subjective assessments from team members or supervisors, or with more objective performance data such as profits (0 = subjective rating; team performance was measured with subjective assessments by team members or by direct supervisors via questionnaires, k = 38, N = 2,727; 1 = objective data; team performance was measured with objective data, k = 18,[8] N = 864). Second, to consider potential common method biases (Podsakoff, MacKenzie, & Podsakoff, 2012), we coded whether or not the same persons assessed both team trust and team effectiveness (0 = same source; team trust and team effectiveness were assessed by the same persons, k = 19, N = 1,591; 1 = different sources; the variables were assessed by different persons, k = 40,[8] N = 2,272). Third, we coded whether studies employed a cross-sectional or a longitudinal design (0 = cross-sectional, k = 34, N = 2,266; 1 = longitudinal, k = 24,[8] N = 1,492). Finally, we coded whether studies were conducted as a laboratory experiment or as a field study (0 = laboratory experiment, controlled manipulation of trust, k = 6, N = 145; 1 = field study, survey study, k = 48, N = 3,337).

Computation of Effect Sizes

We used Pearson's correlation coefficients as measures of effect size. Three studies reported coefficients from regression analyses that we transformed into correlation coefficients using the conversion formula given by Peterson and Brown (2005). Two studies reported mean differences for team effectiveness in low versus high trust conditions. We first computed the standardized mean difference (Cohen's d) and then converted them into correlation coefficients by applying the formula recommended by Borenstein (2009).

Analytical Strategy

In the current study, we used the random effects, meta-analytic methods by Hunter and Schmidt (2004).[9,10] If one study reported multiple indicators to assess a given outcome variable following Hunter and Schmidt (2004), we averaged effect sizes within the different outcome categories (e.g., within task performance, within contextual performance) into one effect size by using the mean correlation coefficient to use independent effect sizes in our meta-analysis. As a consequence, 167 observed effect sizes from 54 included samples were transformed into 54 independent effect sizes (see also Footnote 10). Moderation hypotheses were tested by dividing the obtained effect sizes into subgroups and comparing the mean estimated effect sizes (Hunter & Schmidt, 2004). We tested for statistical significance using t-statistics as described in Aguinis, Sturman, and Pierce (2008).

Results

Table 1 reports the overall relationship between team trust and team effectiveness criteria as well as the results of our tests of Hypotheses 1, 2, and 3. The effect sizes ranged from r = .35 to r = .92, with an overall sample-size weighted correlation corrected for measurement error of ρ = .33 (see Table 1 for uncorrected sample-size weighted correlation coefficients).

In line with Hypothesis 1, the sample-size weighted correlation between team trust and team-related attitudes corrected for measurement error was ρ = .64. Moreover, neither the 80% credibility interval nor the 95% confidence interval included

[6] Although virtuality is usually considered as continuous variable (e.g., Hertel et al., 2005; Kirkman & Mathieu, 2005), the lack of standardized and comparable measures of virtuality in the available studies enabled only a dichotomous coding in this meta-analysis.

[7] Please note that this coding allowed a conservative test of Hypothesis 5 because documentation was coded as being present only when clear evidence was given in a study report.

[8] Sum of ks > 54 reflects that some of the independent samples provided data for both considered methods, for example, both subjective and objective performance data.

[9] We report both the sample-size weighted, mean correlations not corrected for measurement error and the sample-size weighted correlations corrected for measurement error. We corrected each observed correlation for attenuation due to unreliability in both the predictor and the criterion by using the alpha coefficients. For studies that did not report reliability estimates for team trust and/or team effectiveness variables, we used the average of available reliabilities.

[10] All analyses were also conducted using hierarchical linear modeling (HLM; Raudenbush & Bryk, 2002; Van Den Noortgate & Onghena, 2003), allowing us to consider the 167 observed effect sizes from the included 52 studies as separate scores instead of averaging them per study. Those analyses lead to virtually the same main and moderation effects, confirming the robustness of our results across different analytic approaches. Results of the HLM analyses are available on request from the authors.

Table 1
Meta-Analytic Relationships Between Team Trust and Team Effectiveness

Variable	k	N	$\bar{r}$	ρ	SD_ρ	% Var	Lower CV	Upper CV	Lower CI	Upper CI
Overall relationship	54	3,487	.26	.33	.17	31.74	.11	.55	.26	.40
Team attitudes (H1)	15	736	.47	.64	.26	15.68	.30	.97	.45	.82
Satisfaction (H1a)	9	415	.48	.69	.23	20.53	.40	.98	.47	.91
Commitment (H1b)	3	220	.40	.60	.32	8.71	.19	1.00	.00	1.00
Cohesion (H1c)	5	149	.59	.75	.11	53.12	.61	.90	.50	1.00
Effort (H1d)	3	182	.30	.30	.21	23.20	.02	.57	−.08	.68
Team information processing (H2)	7	525	.45	.54	.20	18.38	.29	.79	.43	.64
Knowledge sharing (H2a)	4	286	.46	.53	.24	13.87	.23	.83	.18	.88
Team learning (H2b)	3	239	.44	.55	.13	31.62	.38	.72	.29	.81
Team performance (H3a)	54	3,506	.22	.27	.15	39.70	.08	.46	.21	.33
Task performance (H3a)	54	3,506	.22	.27	.15	37.73	.08	.47	.20	.34
Contextual performance (H3b)	3	266	.25	.27	.08	61.25	.17	.37	.04	.50

Note. k = number of independent samples cumulated; N = cumulative sample size (number of teams); $\bar{r}$ = sample size weighted correlation, not corrected for measurement errors; ρ = sample-size weighted correlation corrected for measurement error; SD_ρ = standard deviation of ρ; % Var = percentage of variance attributable to statistical artifacts; CV = 80% credibility interval of ρ; CI = 95% confidence interval; H = hypothesis.

zero, showing an overall strong and positive relationship between team trust and team-related attitudes across studies, supporting Hypothesis 1 (see Table 1 for parameter estimates for the different team-related attitudes). Consistent with Hypothesis 2, the sample-size weighted correlation between team trust and team information processing corrected for measurement error was ρ = .54. (ρ = .53 for knowledge sharing and ρ = .55 for team learning) indicating also a strong and positive correlation. For both knowledge sharing and team learning, neither the 80% credibility intervals nor the 95% confidence intervals included zero, indicating overall support for Hypothesis 2. Consistent with Hypothesis 3, the sample-size weighted correlation team trust and team performance corrected for measurement error was ρ = .27 (ρ = .27 for task performance and ρ = .27 for contextual performance) indicating moderate associations. None of the 80% credibility intervals and the 95% confidence intervals included zero (see Table 1).

The postulated moderator effects were tested only for the relationship between team trust and team task performance because the samples of the other effect sizes were rather small (see Hedges & Pigott, 2004).[11] The results indicate that the relationship between team trust and team task performance was stronger in virtual teams (ρ = .33) than in face-to-face teams (ρ = .22, t = 2.81, df = 52, p = .007).[12] Therefore, Hypothesis 4 is supported with team task performance as an indicator of team effectiveness (see also Table 3 for details).

Consistent with Hypothesis 5, the relationship between team trust and team task performance was weaker when team members' interactions were documented (ρ = .20) than not documented (ρ = .29, t = 2.41, df = 52, p = .020; see Table 3). Moreover, further subgroup analyses suggest that the two moderation effects of virtuality and documentation are independent rather than redundant. While the correlation between team trust and team task performance was moderate when either virtuality or lack of documentation potentially increased the perceived risk in teams (i.e., virtual teams with documentation of interactions: ρ = .26, face-to face teams without documentation of interactions: ρ = .24), the correlation between team trust and team task performance was highest in virtual teams without documentation of interactions (ρ = .38) and significantly higher than in in face-to-face teams with documentation of interactions (ρ = .11; t = 6.90, df = 17, p < .01; see Table 3).

In addition, the relationship between team trust and team task performance was stronger when team trust and team task performance were assessed by the same persons (ρ = .41) than by different persons (ρ = .20, t = 4.81, df = 57, p < .01). Moreover, the relationship between team trust and team task performance was stronger when team performance was measured with subjective ratings (ρ = .35) than with objective indicators (ρ = .05, t = 16.68, df = 54, p < .01), stronger in cross-sectional (ρ = .31) as compared to longitudinal data (ρ = .20, t = 2.67, df = 56, p = .010), and also stronger in field studies (ρ = .29) as compared to experimental studies in laboratory settings (ρ = −.07, t = 7.28, df = 52, p < .01).

Discussion

In light of the growing prevalence of electronically mediated "virtual" teamwork in many work contexts (e.g., Gilson et al., 2015), practitioners and scientists have stressed trust as an important requirement because electronically mediated collaboration often comes with feelings of uncertainty and perceived risks (e.g., Duarte & Snyder, 2006; Jarvenpaa et al., 1998). Interestingly, however, initial primary studies have revealed

[11] We also calculated moderator analyses for the dependent variables team attitudes and team information processing. The results suggested that in line with our hypotheses, the effect sizes for each subgroup differed in the postulated directions although the differences are not significant. Power analyses indicated that missing the conventional threshold of significance was most likely due to the rather small sample sizes for these analyses.

[12] We recognize that the Hunter and Schmidt (2004) approach recommends using confidence intervals to interpret the effect size differences, and that the confidence intervals of the theoretically driven moderator analyses do overlap in the current study. However, in line with current procedures in well-established journals of organizational behavior and applied psychology we decided to compare the mean effect sizes across groups using a t statistic as suggested by Aguinis, Sturman, and Pierce (2008). Moreover, analyses using HLM (Raudenbush & Bryk, 2002; Van Den Noortgate & Onghena, 2003) confirmed the significance of the moderation effects.

Table 2
Correlations Between Optimally Scaled Moderator Variables

Moderator variables	Virtuality	Documentation of interactions	Performance measure	Source of information	Time series	Study design
Virtuality (0 = face-to-face team; 1 = virtual team)	1.00					
Documentation of interactions (0 = no documentation; 1 = documentation)	.29	1.00				
Performance measure (0 = subjective rating; 1 = objective data)	.01	.41	1.00			
Source of information (0 = same source; 1 = different sources)	−.18	.23	.53	1.00		
Time series (0 = cross-sectional; 1 = longitudinal)	−.18	−.03	.35	.29	1.00	
Study design (0 = laboratory experiment; 1 = field study)	.09	−.29	−.57	−.31	−.38	1.00

Note. $k = 54$ effect sizes were included in this analysis.

partly contradicting results, requiring a more integrative approach including potential moderating conditions of trust effects in teams. The current study provides one of the first meta-analyses of the general relationship between team trust and team effectiveness (see also De Jong, Dirks, & Gillespie, in press), and examined team virtuality as potential moderator that might increase the link between team trust and team effectiveness. Moreover, documentation of team interactions was considered as additional media-related moderator that might reduce the impact of team trust on team effectiveness.

The results of this meta-analysis support our hypothesis that team trust is, overall, positively related to team effectiveness criteria (team-related attitudes, information processing in teams, and team performance), in line with the assumption that team trust facilitates both coordination and cooperation in teams via risk-taking behaviors (see also Dirks, 1999; Mayer et al., 1995). With respect to the team-related attitudes considered, team trust was significantly related with team satisfaction and perceived team cohesion. Moreover, team trust was also positively related with team commitment and team-related effort intentions, although these relations were slightly lower and did not meet the conventional threshold of significance probably due to the small sample sizes for the latter two constructs. Overall, the average effect size for team-related attitudes was large ($\rho = .64$), suggesting the possibility that trust and the attitudes measured (cohesion in particular) might not be different constructs but the same construct assessed with different scales. Future research should carefully investigate whether team trust and team attitudes refer to different or to the same underlying constructs.

With respect to information processing in teams, team trust was found to be significantly related with both knowledge sharing and team learning. These results are remarkable given the small sample sizes for these more specific indicators, but need also to be replicated in follow-up research. In fact, additional analyses revealed that all of the effects for team learning and knowledge sharing were based on same-source self-report data (with the exception of one effect size that involved a different source and which yielded a correlation of .00). Finally, with respect to team performance data, team trust was significantly related with both

Table 3
Categorical Moderator Analyses for Team Trust and Task Performance

Subset	k	N	$\bar{r}$	ρ	SD_ρ	% Var	Lower CV	Upper CV	Lower CI	Upper CI	t
Ftf	29	2,048	.20	.22	.15	36.41	.02	.41	.13	.31	2.81**
VT	25	1,410	.26	.33	.15	41.61	.14	.52	.24	.43	
Documentation	16	719	.17	.20	.10	69.10	.08	.33	.09	.31	2.41*
No documentation	38	2,740	.23	.29	.16	32.22	.08	.50	.21	.37	
Ftf with documentation	5	269	.10	.11	.00	100.00	.11	.11	−.05	.27	4.73**
Ftf without documentation	24	1,779	.21	.24	.16	33.21	.04	.44	.14	.34	
VT with documentation	11	449	.21	.26	.11	66.68	.12	.40	.12	.40	2.26*
VT without documentation	14	961	.28	.38	.16	33.28	.18	.58	.25	.51	
Same source	19	1,591	.31	.41	.16	27.93	.20	.61	.30	.52	4.81**
Different source	40	2,272	.17	.20	.14	44.62	.02	.39	.12	.28	
Subjective rating	38	2,727	.28	.35	.14	38.25	.17	.53	.28	.42	16.68**
Objective data	18	864	.04	.05	.00	100.00	.05	.05	−.03	.13	
Cross-sectional data	34	2,266	.24	.31	.16	33.39	.10	.51	.22	.39	2.67**
Longitudinal data	24	1,492	.17	.20	.13	46.04	.03	.37	.11	.29	
Laboratory experiment	6	145	−.05	−.07	.00	100.00	−.07	−.07	−.26	.13	7.28**
Field study	48	3,337	.24	.29	.15	37.82	.11	.48	.23	.36	

Note. Ftf = fact-to-face teams; VT = virtual teams; k = number of independent samples cumulated; N = cumulative sample size (number of teams); $\bar{r}$ = sample size weighted correlation, not corrected for measurement errors; ρ = sample-size weighted correlation corrected for measurement error; SD_ρ = standard deviation of ρ; % Var = percentage of variance attributable to statistical artifacts; CV = 80% credibility interval of ρ; CI = 95% confidence interval.
* $p < .05$. ** $p < .01$.

task and contextual performance of teams, in line with our theoretical rationale that team trust leads to higher risk-taking behaviors of team members, which in turn supports both team coordination and team cooperation.

The analyses of methodological moderators revealed that the main correlation between team trust and team performance was significantly stronger (a) when data came from single sources as compared to multiple sources, (b) in cross-sectional studies as compared to longitudinal designs, (c) with subjective performance assessments as compared to objective performance indicators, and (d) in field studies as compared to laboratory settings. These results suggest the existence of common method biases and potential overestimation of correlations (e.g., Podsakoff et al., 2012). Finally, while the modest effects for objective performance indicators question whether team trust is truly relevant for behavioral outcomes in addition to subjective perceptions of team members, it should be noted that objective performance indicators are often subject to environmental influences (economic markets, etc.) and usually show rather low correlations with subjective measures. Future research is certainly needed to investigate causal effects of team trust on behavioral outcomes in standing teams.

The analyses of the theoretically derived moderators of the relation between team trust and team effectiveness further confirmed our general rationale. Based on the assumption that electronically mediated collaboration—although often being efficient—can come with additional uncertainties, misunderstandings, and conflicts due to fewer opportunities for social control and context information (e.g., Cramton, 2001; Jarvenpaa et al., 1998), we expected high degrees of virtuality to increase perceived risks of teamwork, which in turn should increase the need for trust. Consistent with this expectation, the meta-analysis showed significantly stronger correlations between team trust and team performance in virtual as compared to face-to-face teams. On the other hand, documentation of interactions in teams decreased the correlations between team trust and team performance, consistent with our assumption that documentation reduces the perceived risk in teams due to reprocessability of interactions (Dennis et al., 2008) and related facilitation of control and peer monitoring during teamwork. Interestingly, subgroup comparisons suggest that the two moderation effects of virtuality and documentation are independent rather than redundant, with the highest relationship between team trust and team performance in virtual teams without documentation of interactions, and the lowest relationship between team trust and team performance in face-to-face teams with documentation of interactions. One implication of this finding is that documentation of interactions might provide an interesting alternative to rather effortful and costly trust maintenance activities (e.g., face-to-face team building workshops, high wire adventure courses) particularly for virtual teams.

Limitations and Future Research

Various limitations of the current meta-analysis provide promising research opportunities. First, apart from the considered characteristics of collaboration media, other risk-related moderators of the team-trust–team-effectiveness link could not be addressed in the current meta-analysis. For instance, demographic or functional diversity among the team members might increase risk perceptions in teams due to misconceptions, stereotyping, and lack of shared social norms. This should be particularly problematic in virtual teams (e.g., Krumm, Terwiel, & Hertel, 2013; Moser & Axtell, 2013). In contrast, goal interdependence might offer additional control opportunities which might reduce the need for trust in teams due to clear goal setting and role definitions (e.g., Hertel et al., 2004). Unfortunately, only few field studies provide sufficient information about the tasks, goals and/or diversity of the team (e.g., Kanawattanachai & Yoo, 2007; Langfred, 2004, 2007) so that these issues could not be considered in this meta-analysis. Second, future research is needed that examines whether different kinds of process documentation lead to more or less risk reductions in teams. For instance, we would assume that video recording of the team members' behavior would have stronger effects than storage of e-mails because e-mails could be rigged.

Third, future research is needed that investigates whether trust or control behaviors are more effective in dealing with risk in teams. On the one hand, peer monitoring is discussed as facilitating coordination and cooperation in teams (Marks et al., 2001; Rapp et al., 2014). On the other hand, however, trust researchers have postulated that trust and control function as alternatives for each other so that control is unlikely to have much effect on team effectiveness when trust is high (Ferrin et al., 2007; Schoorman et al., 2007, 2015). The current meta-analysis contributes to the discussion on the general interplay between trust and control (Costa, 2003; Costa & Bijlsma-Frankema, 2007; Das & Teng, 1998, 2001) by suggesting that control opportunities such as the documentation of interactions might decrease the need for trust.

In general, the examination of moderating conditions of team trust effects is just at the beginning. For example, only one of the primary studies included in this meta-analysis compared trust effects in virtual and face-to-face teams directly while controlling for other variables (Zornoza et al., 2009). Zornoza and colleagues (2009) have shown that the relationship of team trust and team performance was moderate in teams with computer-mediated communication compared with nonsignificant correlations in teams with videoconferencing and face-to-face communication. In addition to identifying additional moderators with respect to risk perceptions, it will be important to empirically demonstrate the assumed mediation mechanisms by (shared) risk perceptions at the individual and at the team level. However, none of the primary studies collected for this meta-analysis explicitly measured risk perceptions within the teams. Moreover, to the best of our knowledge no empirical research has explicitly tested whether perceptions of risk are greater in virtual compared to face-to-face teams apart from lower trust. Research that investigates the interaction between trust and perceived risk in virtual and face-to-face teams would hence be promising. In addition, research is needed that explicitly examines the role of risk-taking behaviors as a central mediating mechanism explaining the link between team trust and team effectiveness. Currently, only few studies have measured risk-taking behaviors such as forbearance from defensive control behavior or individual effort, preventing us from calculating a mediation analysis.

Finally, future research should also examine distinctions between trust and other emergent states. For instance, given the strong meta-analytic correlation we observed between trust and cohesion ($\rho = .75$), future research should examine the extent to which trust and cohesion differentially relate to risk-taking behaviors, and if their effects are differentially moderated by risk perceptions or by proxies for risk such as virtuality and documentation. Such research would provide greater conceptual clarity to the group dynamics literature and mitigate the potential proliferation of superfluous constructs.[13]

Practical Implications

The assumption that trust is central for effective teamwork seems to be well accepted among practitioners, particularly when it comes to virtual teams (e.g., Duarte & Snyder, 2006; Li, 2007). The current meta-analysis has revealed that, overall, team trust is indeed positively related with team effectiveness, and this relation is even stronger when teams collaborated predominantly with electronic media. However, in addition to these challenges, communication media seem also to provide means to decrease the need for trust in (virtual) teams, that is, when interactions in teams are documented and reprocessable.

Documentation of team interactions can be realized in various ways. Standard e-mail programs already provide automatic storage routines that allow forwarding and sharing of such documentations. Groupware systems as well as project management tools (e.g., Campbell & Campbell, 2013) often provide tools for filing work documents together with related communications (e-mails, etc.) on shared databases so that all team members can access and monitor the work progress (e.g., Duque, Bravo, & Ortega, 2013). In addition, authoring systems and documentations of individual contributions in the teamwork progress increase transparency, and help to avoid demotivation such as dispensability of efforts or sucker effects (e.g., Kerr, 1983). Finally, team trust itself can be continuously documented in online feedback systems (Geister, Konradt, & Hertel, 2006), enhancing awareness of the current level of team trust and supporting team learning and shared leadership activities if problems arise.

In general, electronic collaboration of teams should not automatically be associated with higher trust requirements given the additional opportunities to address perceived risks in teams. Virtual teams provide manifold and sometimes underestimated facilities for effective collaboration, including technological means which not only reduce the need for trust (e.g., documentation) but which can also increase trust directly, such as individual web pages providing information about competences and personal interests of team members, chat systems enabling mutual support and cooperation, or awareness tools showing the availability of team members.[14]

[13] We thank one anonymous reviewer for this suggestion.

[14] The paper was retracted by the *Journal of Organizational Behavior* in April 2014 due to an error in the conducted multilevel analyses. Because the reported bivariate correlations should not be affected by this error, we included this study as unpublished data in our analyses.

References

References marked with an asterisk indicate studies included in the meta-analysis.

Aguinis, H., Sturman, M. C., & Pierce, C. A. (2008). Comparison of three meta-analytic procedures for estimating moderating effects of categorical variables. *Organizational Research Methods, 11,* 9–34. http://dx.doi.org/10.1177/1094428106292896

*Akgün, A. E., Byrne, J., Keskin, H., Lynn, G. S., & Imamoglu, S. Z. (2005). Knowledge networks in new product development projects: A transactive memory perspective. *Information & Management, 42,* 1105–1120. http://dx.doi.org/10.1016/j.im.2005.01.001

*Akgün, A. E., Keskin, H., Byrne, J., & Imamoglu, S. Z. (2007). Antecedents and consequences of team potency in software development projects. *Information & Management, 44,* 646–656. http://dx.doi.org/10.1016/j.im.2007.08.001

Allen, N. J., & Meyer, J. P. (1990). The measurement and antecedents of affective, continuance and normative commitment to the organization. *J. Appl. Psych., 63,* 1–18.

*Altschuller, S., & Benbunan-Fich, R. (2010). Trust, performance, and the communication process in ad hoc decision-making virtual teams. *Journal of Computer-Mediated Communication, 16,* 27–47. http://dx.doi.org/10.1111/j.1083-6101.2010.01529.x

Amason, A. C. (1996). Distinguishing the effects of functional and dysfunctional conflict on strategic decision making: Resolving a paradox for top management teams. *Academy of Management Journal, 39,* 123–148.

Ancona, D. G., & Caldwell, D. F. (1992). Bridging the boundary: External activity and performance in organizational teams. *Administrative Science Quarterly, 37,* 634–665. http://dx.doi.org/10.2307/2393475

*Baruch, Y., & Lin, C. P. (2012). All for one, one for all: Coopetition and virtual team performance. *Technological Forecasting and Social Change, 79,* 1155–1168. http://dx.doi.org/10.1016/j.techfore.2012.01.008

Bell, B. S., & Kozlowski, S. W. J. (2002). A typology of virtual teams: Implications for effective leadership. *Group & Organization Management, 27,* 14–49. http://dx.doi.org/10.1177/1059601102027001003

*Bijlsma-Frankema, K., de Jong, B., & van de Bunt, G. (2008). Heed, a missing link between trust, monitoring and performance in knowledge intensive teams. *International Journal of Human Resource Management, 19,* 19–40. http://dx.doi.org/10.1080/09585190701763800

*Bijlsma-Frankema, K., Sleebos, E., & De Gilder, D. (2009). *Triple trust and team performance: Disentangling effects of trust in colleagues, managers and senior management in a domiciliary care organization*. Paper presented at the Academy of Management meeting, Chicago, IL.

Bijmolt, T. H. A., Van Heerde, H. J., & Pieters, R. G. M. (2005). New empirical generalizations on the determinants of price elasticity. *JMR, Journal of Marketing Research, 42,* 141–156. http://dx.doi.org/10.1509/jmkr.42.2.141.62296

Blau, P. M. (1964). *Exchange and power in social life*. New York, NY: Wiley.

*Boies, K., Lvina, E., & Martens, M. L. (2010). Shared leadership and team performance in a business strategy simulation. *Journal of Personnel Psychology, 9,* 195–202. http://dx.doi.org/10.1027/1866-5888/a000021

Bono, J. E., & Judge, T. A. (2003). Self-concordance at work: Toward understanding the motivational effects of transformational leaders. *Academy of Management Journal, 46,* 554–571.

Borenstein, M. (2009). Effect sizes for continuous data. In H. Cooper, L. V. Hedges, & J. C. Valentine (Eds.), *Handbook of research synthesis and meta-analysis* (2nd ed., pp. 221–235). New York, NY: Russell Sage Foundation.

Breuer, C., Hüffmeier, J., & Hertel, G. (2014). *What actions promote trust and distrust in virtual teams? An explorative study using the critical*

incident technique. Paper presented at the 2nd Israel Organizational Behavior Conference (IOBC), Tel Aviv, Israel.

Campbell, C. A., & Campbell, M. (2013). *The new one-page project manager: Communicate and manage any project with a single sheet of paper*. Hoboken, NJ: Wiley & Sons.

Campion, M. A., Medsker, G. J., & Higgs, A. C. (1993). Relations between work group characteristics and effectiveness: Implications for designing effective work groups. *Personnel Psychology, 46,* 823–847.

*Carmeli, A., Tishler, A., & Edmondson, A. C. (2012). CEO relational leadership and strategic decision quality in top management teams: The role of team trust and learning from failure. *Strategic Organization, 10,* 31–54. http://dx.doi.org/10.1177/1476127011434797

*Chen, C. C., Wu, J., Yang, S. C., & Tsou, H. Y. (2008). Importance of diversified leadership roles in improving team effectiveness in a virtual collaboration learning environment. *Journal of Educational Technology & Society, 11,* 304–321.

Chidambaram, L. (1996). Relational development in computer-supported groups. *MIS Quarterly, 23,* 143–165. http://dx.doi.org/10.2307/249476

Chidambaram, L., & Jones, B. (1993). Impact of communication medium and computer support on group perceptions and performance: A comparison of face-to-face and dispersed meetings. *MIS Quarterly, 17,* 465–491. http://dx.doi.org/10.2307/249588

*Chou, H. W., Lin, Y. H., Chang, H. H., & Chuang, W. W. (2013). Transformational leadership and team performance the mediating roles of cognitive trust and collective efficacy. *SAGE Open, 3,* 1–10. http://dx.doi.org/10.1177/2158244013497027

*Cogliser, C. C., Gardner, W. L., Gavin, M. B., & Broberg, J. C. (2012). Big Five personality factors and leader emergence in virtual teams relationships with team trustworthiness, member performance contributions, and team performance. *Group & Organization Management, 37,* 752–784. http://dx.doi.org/10.1177/1059601112464266

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.

Colquitt, J. A., Scott, B. A., & LePine, J. A. (2007). Trust, trustworthiness, and trust propensity: A meta-analytic test of their unique relationships with risk taking and job performance. *Journal of Applied Psychology, 92,* 909–927. http://dx.doi.org/10.1037/0021-9010.92.4.909

*Connelly, C. E., & Turel, O. (2011). *Effects of team emotional authenticity on virtual team performance*. Paper presented at the Administrative Sciences Association of Canada, Montreal, Canada.

Connolly, T., Jessup, L. M., & Valacich, J. S. (1990). Effects of anonymity and evaluative tone on idea generation in computer-mediated groups. *Management Science, 36,* 689–703.

Cook, J., & Wall, T. (1980). New work attitude measures of trust, organizational commitment and personal need non-fulfilment. *Journal of Occupational Psychology, 53,* 39–52.

Cooper, R. G., & Kleinschmidt, E. J. (1987). New products: what separates winners from losers? *Journal of Product Innovation Management, 4,* 169–184.

Costa, A. C. (2000). A Matter of Trust: Effects on the Performance and Effectiveness of Teams in Organizations, Ridderkerk: Ridderprint.

*Costa, A. C. (2003). Work team trust and effectiveness. *Personnel Review, 32,* 605–622. http://dx.doi.org/10.1108/00483480310488360

Costa, A. C., & Anderson, N. (2011). Measuring trust in teams: Development and validation of a multifaceted measure of formative and reflective indicators of team trust. *European Journal of Work and Organizational Psychology, 20,* 119–154. http://dx.doi.org/10.1080/13594320903272083

Costa, A. C., & Bijlsma-Frankema, K. (2007). Trust and control interrelations new perspectives on the trust—control nexus. *Group & Organization Management, 32,* 392–406.

*Costa, A. C., Bijlsma-Frankema, K., & de Jong, B. (2009). The role of social capital on trust development and dynamics: Implications for cooperation, monitoring and team performance. *Social Sciences Information, 48,* 199–228. http://dx.doi.org/10.1177/0539018409102408

Cramton, C. D. (2001). The mutual knowledge problem and its consequences for dispersed collaboration. *Organization Science, 12,* 346–371. http://dx.doi.org/10.1287/orsc.12.3.346.10098

Crouch, A. G. D. (1980). *Psychological climate behaviour, satisfaction and individual differences in managerial work groups* (Unpublished doctoral dissertation). University of New South Wales, Australia.

Cummings, L. L., & Bromiley, P. (1996). The Organizational Trust Inventory (OTI): Development and validation. In R. M. Kramer & T. R. Tyler (Eds.), *Trust in organizations: Frontiers of theory and research* (pp. 302–330). Thousand Oaks, CA: Sage.

Curşeu, P. L. (2003). *Formal group decision-making: A social cognitive approach*. Cluj-Napoca, RO: ASCR Press.

*Curşeu, P. L., & Schruijer, S. G. (2010). Does conflict shatter trust or does trust obliterate conflict? Revisiting the relationships between team diversity, conflict, and trust. *Group Dynamics, 14,* 66–79. http://dx.doi.org/10.1037/a0017104

Das, T. K., & Teng, B. S. (1998). Between trust and control: Developing confidence in partner cooperation in alliances. *Academy of Management Review, 23,* 491–512.

Das, T. K., & Teng, B. S. (2001). Trust, control, and risk in strategic alliances: An integrated framework. *Organization Studies, 22,* 251–283.

Davis, J. H., Schoorman, F. D., Mayer, R. C., & Tan, H. H. (2000). The trusted general manager and business unit performance: Empirical evidence of a competitive advantage. *Strategic Management Journal, 21,* 563–576. http://dx.doi.org/10.1002/(SICI)1097-0266(200005)21:5<563::AID-SMJ99>3.0.CO;2-0

*Dayan, M., & Di Benedetto, C. A. (2010). The impact of structural and contextual factors on trust formation in product development teams. *Industrial Marketing Management, 39,* 691–703. http://dx.doi.org/10.1016/j.indmarman.2010.01.001

De Dreu, C. K. (2006). When too little or too much hurts: Evidence for a curvilinear relationship between task conflict and innovation in teams. *Journal of Management, 32,* 83–107. http://dx.doi.org/10.1177/0149206305277795

*De Jong, B. A., & Dirks, K. T. (2012). Beyond shared perceptions of trust and monitoring in teams: Implications of asymmetry and dissensus. *Journal of Applied Psychology, 97,* 391–406. http://dx.doi.org/10.1037/a0026483

De Jong, B. A., Dirks, K. T., & Gillespie, N. (in press). Trust and team performance: A meta-analysis of main effects, moderators, and covariates. *Journal of Applied Psychology*.

*De Jong, B. A., & Elfring, T. (2010). How does trust affect the performance of ongoing teams? The mediating role of reflexivity, monitoring, and effort. *Academy of Management Journal, 53,* 535–549. http://dx.doi.org/10.5465/AMJ.2010.51468649

Dennis, A. R., Fuller, R. M., & Valacich, J. S. (2008). Media, tasks, and communication processes: A theory of media synchronicity. *Management Information Systems Quarterly, 32,* 575–600.

Diehl, M., & Stroebe, W. (1987). Productivity loss in brainstorming groups: Toward the solution of a riddle. *Journal of Personality and Social Psychology, 53,* 497.

*Dirks, K. T. (1999). The effects of interpersonal trust on work group performance. *Journal of Applied Psychology, 84,* 445–455. http://dx.doi.org/10.1037/0021-9010.84.3.445

*Dirks, K. T. (2000). Trust in leadership and team performance: Evidence from NCAA basketball. *Journal of Applied Psychology, 85,* 1004–1012. http://dx.doi.org/10.1037/0021-9010.85.6.1004

Dirks, K. T., & Ferrin, D. L. (2001). The role of trust in organizational settings. *Organization Science, 12,* 450–467. http://dx.doi.org/10.1287/orsc.12.4.450.10640

Dirks, K. T., & Ferrin, D. L. (2002). Trust in leadership: Meta-analytic findings and implications for research and practice. *Journal of Applied Psychology, 87,* 611–628. http://dx.doi.org/10.1037/0021-9010.87.4.611

Dobbins, G. H., & Zaccaro, S. J. (1986). The effects of group cohesion and leader behavior on subordinate satisfaction. *Group & Organization Management, 11,* 203–219.

Duarte, D. L., & Snyder, N. T. (2006). *Mastering virtual teams: Strategies, tools, and techniques that succeed*. New York, NY: Wiley.

Duque, R., Bravo, C., & Ortega, M. (2013). An ontological approach to automating collaboration and interaction analysis in groupware systems. *Knowledge-Based Systems, 37,* 211–229. http://dx.doi.org/10.1016/j.knosys.2012.08.005

Edmondson, A. C. (2002). *Managing the risk of learning: Psychological safety in work teams*. Cambridge, MA: Division of Research, Harvard Business School.

Faraj, S., & Sproull, L. (2000). Coordinating expertise in software development teams. *Management Science, 46,* 1554–1568.

Ferrin, D. L., Bligh, M. C., & Kohles, J. C. (2007). Can I trust you to trust me? A theory of trust, monitoring, and cooperation in interpersonal and intergroup relationships. *Group & Organization Management, 32,* 465–499. http://dx.doi.org/10.1177/1059601106293960

Freese, C., & Schalk, R. (1996). Implications of differences in psychological contracts for human resource management. *European Journal of Work and Organizational Psychology, 5,* 501–509. http://dx.doi.org/10.1080/13594329608414875

Fulmer, C. A., & Gelfand, M. J. (2012). At what level (and in whom) we trust across multiple organizational levels. *Journal of Management, 38,* 1167–1230. http://dx.doi.org/10.1177/0149206312439327

*Geister, S., Konradt, U., & Hertel, G. (2006). Effects of process feedback on motivation, satisfaction, and performance in virtual teams. *Small Group Research, 37,* 459–489. http://dx.doi.org/10.1177/1046496406292337

George, J. M. (1992). Extrinsic and intrinsic origins of perceived social loafing in organizations. *Academy of Management Journal, 35,* 191–202.

Germain, M. L. (2011). Developing trust in virtual teams. *Performance Improvement Quarterly, 24,* 29–54. http://dx.doi.org/10.1002/piq.20119

Gibson, C. B., Huang, L., Kirkman, B. L., & Shapiro, D. L. (2014). Where global and virtual meet: The value of examining the intersection of these elements in twenty-first-century teams. *Annual Review of Organizational Psychology and Organizational Behavior, 1,* 389–411. http://dx.doi.org/10.1146/annurev-orgpsych-031413-091240

Gillespie, N. (2003, August). *Measuring trust in working relationships: The behavioral trust inventory*. In Academy of Management Conference, Seattle, WA.

Gilson, L. L., Maynard, M. T., Jones Young, N., Vartiainen, M., & Hakonen, M. (2015). Virtual teams research: Ten years, ten themes, and ten opportunities. *Journal of Management, 41,* 1313–1337. http://dx.doi.org/10.1177/0149206314559946

Gouldner, A. W. (1960). The norm of reciprocity: A preliminary statement. *American Sociological Review, 25,* 161–178. http://dx.doi.org/10.2307/2092623

Guzzo, R. A., Yost, P. R., Campbell, R. J., & Shea, G. P. (1993). Potency in groups: Articulating a construct. *British Journal of Social Psychology, 32,* 87–106.

Hackman, J. R. (1987). The design of work teams. In J. W. Lorsch (Ed.), *Handbook of organizational behavior* (pp. 315–342). Englewood Cliffs, NJ: Prentice Hall.

*Hakonen, M., & Lipponen, J. (2009). It takes two to tango: The close interplay between trust and identification in predicting virtual team effectiveness. *Journal of eWorking, 3,* 99–125.

Hedges, L. V., & Pigott, T. D. (2004). The power of statistical tests for moderators in meta-analysis. *Psychological Methods, 9,* 426–445. http://dx.doi.org/10.1037/1082-989X.9.4.426

*Hempel, P. S., Zhang, Z. X., & Tjosvold, D. (2009). Conflict management between and within teams for trusting relationships and performance in China. *Journal of Organizational Behavior, 30,* 41–65. http://dx.doi.org/10.1002/job.540

Hertel, G. (2002). Management virtueller Teams auf der Basis sozialpsychologischer Theorien: Das VIST Modell [Managing virtual teams based on theories from social psychology: The VIST Model]. In E. H. Witte (Ed.), *Sozialpsychologie wirtschaftlicher Prozesse* (pp. 172–202). Lengerich, Germany: Pabst Verlag.

Hertel, G., Geister, S., & Konradt, U. (2005). Managing virtual teams: A review of current empirical research. *Human Resource Management Review, 15,* 69–95. http://dx.doi.org/10.1016/j.hrmr.2005.01.002

*Hertel, G., Konradt, U., & Orlikowski, B. (2004). Managing distance by interdependence: Goal setting, task interdependence, and team-based rewards in virtual teams. *European Journal of Work and Organizational Psychology, 13,* 1–28. http://dx.doi.org/10.1080/13594320344000228

Hoch, J. E., & Kozlowski, S. W. (2014). Leading virtual teams: Hierarchical leadership, structural supports, and shared team leadership. *Journal of Applied Psychology, 99,* 390–403. http://dx.doi.org/10.1037/a0030264

Hoegl, M., & Gemuenden, H. G. (2001). Teamwork quality and the success of innovative projects: A theoretical concept and empirical evidence. *Organization Science, 12,* 435–449.

Hogg, M. A., & Hains, S. C. (1998). Friendship and group identification: A new look at the role of cohesiveness in groupthink. *European Journal of Social Psychology, 28,* 323–341.

Hüffmeier, J., Freund, P. A., Zerres, A., Backhaus, K., & Hertel, G. (2011). Being tough or being nice? A meta-analysis on hard- and softline strategies in distributive negotiations. *Journal of Management*. Advance online publication.

Human, S. E., & Provan, K. G. (1997). An emergent theory of structure and outcomes in small-firm strategic manufacturing networks. *Academy of Management Journal, 40,* 368–403.

Hung, Y. T., Dennis, A. R., & Robert, L. (2004). Trust in virtual teams: Towards an integrative model of trust formation. In *Proceedings of the 37th Annual Hawaii International Conference on System Sciences* (p. 11). New York, NY: IEEE. http://dx.doi.org/10.1109/HICSS.2004.1265156

Hunter, J. E., & Schmidt, F. L. (2004). *Methods of meta-analysis: Correcting error and bias in research findings* (2nd ed.). New York, NY: Sage.

*Iacono, C. S., & Weisband, S. (1997). Developing trust in virtual teams. In *Proceedings of the 30th Annual Hawaii International Conference on System Sciences* (Vol. 2, pp. 412–420). New York, NY: IEEE. http://dx.doi.org/10.1109/HICSS.1997.665615

Jarvenpaa, S. L., Knoll, K., & Leidner, D. E. (1998). Is anybody out there? Antecedents of trust in global virtual teams. *Journal of Management Information Systems, 4,* 29–64. http://dx.doi.org/10.1080/07421222.1998.11518185

Jarvenpaa, S. L., & Leidner, D. (1999). Communication and trust in global virtual teams. *Organization Science, 10,* 791–815.

*Jarvenpaa, S. L., Shaw, T. R., & Staples, D. S. (2004). Toward contextualized theories of trust: The role of trust in global virtual teams. *Information Systems Research, 15,* 250–267. http://dx.doi.org/10.1287/isre.1040.0028

Jones, G. R., & George, J. M. (1998). The experience and evolution of trust: Implications for cooperation and teamwork. *Academy of Management Review, 23,* 531–546.

*Joshi, A., Lazarova, M. B., & Liao, H. (2009). Getting everyone on board: The role of inspirational leadership in geographically dispersed teams. *Organization Science, 20,* 240–252. http://dx.doi.org/10.1287/orsc.1080.0383

*Kanawattanachai, P., & Yoo, Y. (2002). Dynamic nature of trust in virtual teams. *The Journal of Strategic Information Systems, 11,* 187–213. http://dx.doi.org/10.1016/S0963-8687(02)00019-7

*Kanawattanachai, P., & Yoo, Y. (2007). The impact of knowledge coordination on virtual team performance over time. *MIS Quarterly, 31,* 783–808. Retrieved from http://www.jstor.org/stable/25148820

Karau, S. J., & Williams, K. D. (1993). Social loafing: A meta-analytic review and theoretical integration. *Journal of Personality and Social Psychology, 65,* 681–706. http://dx.doi.org/10.1037/0022-3514.65.4.681

Kerr, N. L. (1983). Motivation losses in small groups: A social dilemma analysis. *Journal of Personality and Social Psychology, 45,* 819–828. http://dx.doi.org/10.1037/0022-3514.45.4.819

Kessler, E. H., & Chakrabarti, A. K. (1999). Speeding up the pace of new product development. *Journal of Product Innovation Management, 16,* 231–247.

Kirkman, B. L., & Mathieu, J. E. (2005). The dimensions and antecedents of team virtuality. *Journal of Management, 31,* 700–718. http://dx.doi.org/10.1177/0149206305279113

*Kirkman, B. L., Rosen, B., Tesluk, P. E., & Gibson, C. B. (2006). Enhancing the transfer of computer-assisted training proficiency in geographically distributed teams. *Journal of Applied Psychology, 91,* 706–716. http://dx.doi.org/10.1037/0021-9010.91.3.706

Kozlowski, S. W. J., & Bell, B. S. (2013). *Work groups and teams in organizations: Review update* [Electronic version]. Retrieved http://digitalcommons.ilr.cornell.edu/articles/927

Kozlowski, S. W. J., & Ilgen, D. R. (2006). Enhancing the effectiveness of work groups and teams. *Psychological Science in the Public Interest, 7,* 77–124.

Kozlowski, S. W. J., & Klein, K. J. (2000). A multilevel approach to theory and research in organizations: Contextual, temporal, and emergent processes. In K. J. Klein & S. W. J. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions* (pp. 3–90). San Francisco, CA: Jossey-Bass.

Krumm, S., Terwiel, K., & Hertel, G. (2013). Challenges in norm formation and adherence: The knowledge, skills, and ability requirements of virtual and traditional cross-cultural teams. *Journal of Personnel Psychology, 13,* 33–44. http://dx.doi.org/10.1027/1866-5888/a000077

Kuhlman, D. M., & Marshello, A. F. (1975). Individual differences in game motivation as moderators of preprogrammed strategy effects in prisoner's dilemma. *Journal of Personality and Social Psychology, 32,* 922.

*Langfred, C. W. (2004). Too much of a good thing? Negative effects of high trust and individual autonomy in self-managing teams. *Academy of Management Journal, 47,* 385–399. http://dx.doi.org/10.2307/20159588

*Langfred, C. W. (2007). The downside of self-management: A longitudinal study of the effects of conflict on trust, autonomy, and task interdependence in self-managing teams. *Academy of Management Journal, 50,* 885–900. http://dx.doi.org/10.5465/AMJ.2007.26279196

Lee, K., & Allen, N. J. (2002). Organizational citizenship behavior and workplace deviance: The role of affect and cognitions. *Journal of Applied Psychology, 87,* 131–142.

*Lee, P., Gillespie, N., Mann, L., & Wearing, A. (2010). Leadership and trust: Their effect on knowledge sharing and team performance. *Management Learning, 41,* 473–491. http://dx.doi.org/10.1177/1350507610362036

Lewis, K. (2003). Measuring transactive memory systems in the field: Scale development and validation. *Journal of Applied Psychology, 88,* 587–604.

Li, F. (2007). New work organization and new ways of working: From teleworking to virtual teams. In F. Li (Ed.), *What is e-business? How the Internet transforms organizations* (pp. 183–196). New York, NY: Wiley.

Lin, C. P. (2007). To share or not to share: Modeling knowledge sharing using exchange ideology as a moderator. *Personnel Review, 36,* 457–475.

Losada, M., Sanchez, P., & Noble, E. E. (1990, September). Collaborative technology and group process feedback: Their impact on interactive sequences in meetings. In *Proceedings of the 1990 ACM conference on Computer-supported cooperative work* (pp. 53–64). New York, NY: ACM.

Loughry, M. L. (2010). Peer control in organizations. In S. B. Sitkin, L. B. Cardinal, & K. M. Bijlsma-Frankema (Eds.), *Organizational control* (pp. 324–361). Cambridge, United Kingdom: Cambridge University Press. http://dx.doi.org/10.1017/CBO9780511777899.012

Loughry, M. L., & Tosi, H. L. (2008). Performance implications of peer monitoring. *Organization Science, 19,* 876–890. http://dx.doi.org/10.1287/orsc.1080.0356

Lynn, G. S., Innovation Audit, Stevens Institute of Technology, 2001.

Lynn, G. S., Reilly, R. R., & Akgün, A. E. (2000). Knowledge management in new product teams: Practices and outcomes. *IEEE Transactions on Engineering Management, 47,* 221–231.

Marks, M. A., Mathieu, J. E., & Zaccaro, S. J. (2001). A temporally based framework and taxonomy of team processes. *Academy of Management Review, 26,* 356–376.

Mathieu, J., Maynard, M. T., Rapp, T. L., & Gilson, L. (2008). Team effectiveness 1997–2007: A review of recent advancements and a glimpse into the future. *Journal of Management, 34,* 410–476. http://dx.doi.org/10.1177/0149206308316061

*Maurer, I. (2010). How to build trust in inter-organizational projects: The impact of project staffing and project rewards on the formation of trust, knowledge acquisition and product innovation. *International Journal of Project Management, 28,* 629–637. http://dx.doi.org/10.1016/j.ijproman.2009.11.006

Maurer, T. J., & Tarulli, B. A. (1994). Investigation of perceived environment, perceived outcome, and person variables in relationship to voluntary development activity by employees. *Journal of Applied Psychology, 79,* 3–14.

Mayer, R. C., Davis, J. H., & Schoorman, D. (1995). An integrative model of organizational trust. *Academy of Management Review, 20,* 709–734.

Mayer, R. C., & Gavin, M. B. (2005). Trust in management and performance: Who minds the shop while the employees watch the boss? *Academy of Management Journal, 48,* 874–888.

McAllister, D. J. (1995). Affect-and cognition-based trust as foundations for interpersonal cooperation in organizations. *Academy of Management Journal, 38,* 24–59.

McEvily, B., & Tortoriello, M. (2011). Measuring trust in organisational research: Review and recommendations. *Journal of Trust Research, 1,* 23–63. http://dx.doi.org/10.1080/21515581.2011.552424

McGrath, J. E. (1991). Time, interaction, and performance (TIP) A Theory of Groups. *Small Group Research, 22,* 147–174.

Mesmer-Magnus, J. R., & Dechurch, L. A. (2009). Information sharing and team performance: A meta-analysis. *Journal of Applied Psychology, 94,* 535–546. http://dx.doi.org/10.1037/a0013773

Messick, D., & McClintock, C. (1968). Motivational bases of choice in experimental games. *Journal of Experimental Social Psychology, 4,* 1–25.

Mitchell, A., & Zigurs, I. (2009). Trust in virtual teams: Solved or still a mystery? *The Data Base for Advances in Information Systems, 40,* 61–83. http://dx.doi.org/10.1145/1592401.1592407

Montoya-Weiss, M. M., Massey, A. P., & Song, M. (2001). Getting it together: Temporal coordination and conflict management in global virtual teams. *Academy of Management Journal, 44,* 1251–1262. http://dx.doi.org/10.2307/3069399

Moorman, C., Zaltman, G., & Deshpande, R. (1992). Relationships between providers and users of market research: The dynamics of trust within and between organizations. *Journal of Marketing Research, 29,* 314.

Mortensen, M., & Hinds, P. J. (2001). Conflict and shared identity in geographically distributed teams. *International Journal of Conflict Management, 12,* 212–238.

Moser, K., & Axtell, C. M. (2013). The role of norms in virtual work. A review and agenda for future work. *Journal of Personnel Psychology, 13,* 1–6. http://dx.doi.org/10.1027/1866-5888/a000079

Mott, P. E. (1972). *The characteristics of effective organizations* (pp. 32–34). New York, NY: HarperCollins Publishers.

Mulvey, P. W., & Klein, H. J. (1998). The impact of perceived loafing and collective efficacy on group goal processes and group performance. *Organizational Behavior and Human Decision Processes, 74,* 62–87.

*Olson, B. J., Parayitam, S., & Bao, Y. (2007). Strategic decision making: The effects of cognitive diversity, conflict, and trust on decision outcomes. *Journal of Management, 33,* 196–222. http://dx.doi.org/10.1177/0149206306298657

*Palanski, M. E., Kahai, S. S., & Yammarino, F. J. (2011). Team virtues and performance: An examination of transparency, behavioral integrity, and trust. *Journal of Business Ethics, 99,* 201–216. http://dx.doi.org/10.1007/s10551-010-0650-7

*Parayitam, S., & Dooley, R. S. (2007). The relationship between conflict and decision outcomes: Moderating effects of cognitive-and affect-based trust in strategic decision-making teams. *The International Journal of Conflict Management, 18,* 42–73. http://dx.doi.org/10.1108/10444060710759318

Paul, D. L., & McDaniel, R. R. (2004). A field study of the effect of interpersonal trust on virtual collaborative relationship performance. *Management Information Systems Quarterly, 28,* 183–227.

Pearce, J. L., Sommer, S. M., Morris, A., & Frideger, M. (1992). *A configurational approach to interpersonal relations: Profiles of workplace social relations and task interdependence*. Graduate School of Management Working Paper OB92015, University of California, Irvine, Irvine, CA.

Perry, B. (2008). *Virtual teams now a reality: Two out of three companies say they will rely more on virtual teams in the future*. Retrieved from http://www.pr.com/press-release/103409

*Peterson, R. S., & Behfar, K. J. (2003). The dynamic relationship between performance feedback, trust, and conflict in groups: A longitudinal study. *Organizational Behavior and Human Decision Processes, 92,* 102–112. http://dx.doi.org/10.1016/S0749-5978(03)00090-6

Peterson, R. A., & Brown, S. P. (2005). On the use of beta coefficients in meta-analysis. *Journal of Applied Psychology, 90,* 175–181. http://dx.doi.org/10.1037/0021-9010.90.1.175

*Pinjani, P., & Palvia, P. (2013). Trust and knowledge sharing in diverse global virtual teams. *Information & Management, 50,* 144–153. http://dx.doi.org/10.1016/j.im.2012.10.002

*Pitts, V. E. (2010). *Towards a better understanding of virtual team effectiveness: An integration of trust* (Unpublished doctoral dissertation). Colorado State University, Fort Collins, CO.

Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology, 63,* 539–569. http://dx.doi.org/10.1146/annurev-psych-120710-100452

*Politis, J. D. (2003). The connection between trust and knowledge management: What are its implications for team performance. *Journal of Knowledge Management, 7,* 55–66. http://dx.doi.org/10.1108/13673270310505386

Polzer, J. T., Crisp, C. B., Jarvenpaa, S. L., & Kim, J. W. (2006). Extending the faultline model to geographically dispersed teams: How colocated subgroups can impair group functioning. *Academy of Management Journal, 49,* 679–692. http://dx.doi.org/10.5465/AMJ.2006.22083024

*Porter, T. W., & Lilly, B. S. (1996). The effects of conflict, trust, and task commitment on project team performance. *The International Journal of Conflict Management, 7,* 361–376. http://dx.doi.org/10.1108/eb022787

Rapp, T. L., Bachrach, D. G., Rapp, A. A., & Mullins, R. (2014). The role of team goal monitoring in the curvilinear relationship between team efficacy and team performance. *Journal of Applied Psychology, 99,* 976–987. http://dx.doi.org/10.1037/a0036978

*Rau, D. (2005). The influence of relationship conflict and trust on the transactive memory performance relation in top management teams. *Small Group Research, 36,* 746–771. http://dx.doi.org/10.1177/1046496405281776

Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models* (2nd ed.). London, United Kingdom: Sage.

Riordan, C. M., & Weatherly, E. W. (1999). Defining and measuring employees' identification with their work groups. *Educational and Psychological Measurement, 59,* 310–324.

Robinson, S. L. (1996). Trust and breach of the psychological contract. *Administrative science quarterly, 41,* 574–599. http://dx.doi.org/10.2307/2393868

Roe, R. A., Ten Horn, L., Zinovieva, I., & Dienes, E. (1997). *Expanded Delft measurement kit: Technical guideline, report on the European research program on work motivation and quality of work life*. WORC, Tilburg University.

Rousseau, D. M., Sitkin, S. B., Burt, R. S., & Camerer, C. (1998). Not so different after all: A cross-discipline view of trust. *Academy of Management Review, 23,* 393–404. http://dx.doi.org/10.5465/AMR.1998.926617

Schoorman, F. D., Mayer, R. C., & Davis, J. H. (1996). *Empowerment in veterinary clinics: The role of trust in delegation*. 11th Annual Meeting of Society for Industrial and Organizational Psychology, San Diego, CA.

Schoorman, F. D., Mayer, R. C., & Davis, J. H. (2007). An integrative model of organizational trust: Past, present, and future. *Academy of Management Review, 32,* 344–354. http://dx.doi.org/10.5465/AMR.2007.24348410

Schoorman, F. D., Wood, M. M., & Breuer, C. (2015). Would trust by any other name smell as sweet? Reflections on the meanings and uses of trust across disciplines and context. In Bornstein, B. H. & Tomkins (Eds.), *A motivating cooperation and compliance with authority* (pp. 13–35). New York, NY: Springer International. http://dx.doi.org/10.1007/978-3-319-16151-8_2

Shepherd, M. M., Briggs, R. O., Reinig, B. A., Yen, J., & Nunamaker, J. F., Jr. (1996). Invoking social comparison to improve electronic brainstorming: Beyond anonymity. *Journal of Management Information Systems, 12,* 155–170. http://dx.doi.org/10.1080/07421222.1995.11518095

Simons, T. L., & Peterson, R. S. (2000). Task conflict and relationship conflict in top management teams: The pivotal role of intragroup trust. *Journal of Applied Psychology, 85,* 102.

*Small, E. E., & Rentsch, J. R. (2010). Shared leadership in teams: A matter of distribution. *Journal of Personnel Psychology, 9,* 203–211. http://dx.doi.org/10.1027/1866-5888/a000017

*Smith, J. B., & Barclay, D. W. (1997). The effects of organizational differences and trust on the effectiveness of selling partner relationships. *Journal of Marketing, 61,* 3–21. http://dx.doi.org/10.2307/1252186

Smith, K. G., Carroll, S. J., & Ashford, S. J. (1995). Intra-and interorganizational cooperation: Toward a research agenda. *Academy of Management Journal, 38,* 7–23. http://dx.doi.org/10.2307/256726

Society for Human Resource Management. (2012). *SHRM survey findings: Virtual teams*. Retrieved from http://www.shrm.org/research/surveyfindings/articles/pages/virtualteams.aspx

Stewart, G. L., & Barrick, M. R. (2000). Team structure and performance: Assessing the mediating role of intrateam process and the moderating role of task type. *Academy of Management Journal, 43,* 135–148.

*Stewart, K. J., & Gosain, S. (2006). The impact of ideology on effectiveness in open source software development teams. *MIS Quarterly, 30,* 291–314. Retrieved from http://www.jstor.org/stable/25148732

Tjosvold, D. (1988). Cooperative and competitive interdependence collaboration between departments to serve customers. *Group & Organization Management, 13,* 274–289.

Tjosvold, D., Yu, Z. Y., & Hui, C. (2004). Team learning from mistakes: The contribution of cooperative goals and problem-solving. *Journal of Management Studies, 47,* 1223–1245. http://dx.doi.org/10.1111/j.1467-6486.2004.00473.x

Townsend, A. M., DeMarie, S. M., & Hendrickson, A. R. (1998). Virtual teams: Technology and the workplace of the future. *The Academy of Management Executive, 12,* 17–29. Retrieved from http://www.jstor.org/stable/4165474

Tsai, W. (2000). Social capital, strategic relatedness and the formation of intraorganizational linkages. *Strategic Management Journal, 21,* 925–939.

Tsai, W., & Ghoshal, S. (1998). Social capital and value creation: The role of intrafirm networks. *Academy of Management Journal, 41,* 464–476.

Tucker, A. L., & Edmondson, A. C. (2003). Why hospitals don't learn from failures: Organizational and psychological dynamics that inhibit system change. *California Management Review, 45,* 55–72.

Valacich, J. S., Dennis, A. R., & Nunamaker, J. F. (1992). Group size and anonymity effects on computer-mediated idea generation. *Small Group Research, 23,* 49–73.

Van Den Noortgate, W., & Onghena, P. (2003). Multilevel meta-analysis: A comparison with traditional meta-analytic procedures. *Educational and Psychological Measurement, 63,* 765–790. http://dx.doi.org/10.1177/0013164403251027

*Walumbwa, F. O., Luthans, F., Avey, J. B., & Oke, A. (2011). *Authentically leading groups: The mediating role of collective psychological capital and trust* (Unpublished manuscript). http://dx.doi.org/10.1002/job.1936[14]

*Webber, S. S. (2008a). Blending service provider–client project teams to achieve client trust: Implications for project team trust, cohesion, and performance. *Project Management Journal, 39,* 72–81. http://dx.doi.org/10.1002/pmj.20043

*Webber, S. S. (2008b). Development of cognitive and affective trust in teams: A longitudinal study. *Small Group Research, 39,* 746–769. http://dx.doi.org/10.1177/1046496408323569

*Williams, K. D., & Karau, S. J. (1991). Social loafing and social compensation: The effects of expectations of co-worker performance. *Journal of Personality and Social Psychology, 61,* 570–581. http://dx.doi.org/10.1037/0022-3514.61.4.570

*Zornoza, A., Orengo, V., & Peñarroja, V. (2009). Relational capital in virtual teams: The role played by trust. *Social Sciences Information, 48,* 257–281. http://dx.doi.org/10.1177/0539018409102414

Appendix

Summary of Studies and Multiple Effect Sizes Included in the Meta-Analysis and Coding of Moderators

								Moderator coding		Methodical moderators			
Study	*N*	*r*	α Team trust	α Team effectiveness	Team effectiveness	Measure of trust	Measure of team effectiveness	Virtuality	Process documentation	Source of information	Performance measure	Time series	Study design
Akgün et al. (2005)	69	.23	.71	.87	TP	Cognitive-based trust; Kanawattanachai & Yoo (2002)	New product success; Cooper & Kleinschmidt (1987)	FTF	NODOC	SS	SR	CS	FS
Akgün et al. (2005)	69	.13	.71	.86	TP	Cognitive-based trust; Kanawattanachai & Yoo (2002)	Speed-to-market; Kessler & Chakrabarti (1999)	FTF	NODOC	SS	SR	CS	FS
Akgün et al. (2005)	69	.37	.71	.77	TL	Cognitive-based trust; Kanawattanachai & Yoo (2002)	Team learning; Lynn, Reilly, and Akgün (2000)	FTF	NODOC	SS	SR	CS	FS
Akgün et al. (2005)	69	.16	.62	.87	TP	Affect-based trust; Kanawattanachai & Yoo (2002)	New product success; Cooper & Kleinschmidt (1987)	FTF	NODOC	SS	SR	CS	FS
Akgün et al. (2005)	69	.39	.62	.86	TP	Affect-based trust; Kanawattanachai & Yoo (2002)	Speed-to-market; Kessler & Chakrabarti (1999)	FTF	NODOC	SS	SR	CS	FS
Akgün et al. (2005)	69	.08	.62	.77	TL	Affect-based trust; Kanawattanachai & Yoo (2002)	Team learning; Lynn et al. (2000)	FTF	NODOC	SS	SR	CS	FS
Akgün et al. (2007)	53	.40	.80	.91	TP	Trust in team members; Lynn (2001)	Market success; Cooper & Kleinschmidt (1987)	V	NODOC	SS	SR	CS	FS
Akgün et al. (2007)	53	.37	.80	.76	TP	Trust in team members; Lynn (2001)	Speed-to-market; Kessler & Chakrabarti (1999)	V	NODOC	SS	SR	CS	FS
Altschuller & Benbunan-Fich (2010)	80	.42	.90	.80	TP	Missing	Team performance; NS	V	DOC[a]	DS	SR	CS	FS
Baruch & Lin (2012)	152	.40	.85	.80	KS	Team trust; Langfred (2004)	Knowledge sharing; Lin (2007)	V	NODOC	SS	SR	CS	FS
Baruch & Lin (2012)	152	.08	.85	.80	TP	Team trust; Langfred (2004)	Team performance; Stewart & Barrick (2000)	V	NODOC	SS	SR	CS	FS
Bijlsma-Frankema et al. (2008)	57	.16	.76	.80	TP	Costa (2000); T2	Grades by supervisors; NS; T4	FTF	NODOC	DS	SR	L	FS
Bijlsma-Frankema et al. (2008)	57	.40	.76	.80	TP	Costa (2000); T3	Grades by supervisors; NS; T4	FTF	NODOC	DS	SR	L	FS

(*Appendix continues*)

Study	*N*	*r*	α Team trust	α Team effectiveness	Team effectiveness	Measure of trust	Measure of team effectiveness	Moderator coding: Virtuality	Moderator coding: Process documentation	Methodical moderators: Source of information	Methodical moderators: Performance measure	Methodical moderators: Time series	Methodical moderators: Study design
Bijlsma-Frankema et al. (2009)	108	−.10	.83	.80	TP	Trust in team members; Bijlsma-Frankema et al. (2009); T1	Monthly percentage of team hours, billable to clients. NS; T1	FTF	NODOC	DS	OD	CS	FS
Bijlsma-Frankema et al. (2009)	93	−.19	.83	.80	TP	Trust in team members; Bijlsma-Frankema et al. (2009); T1	Monthly percentage of team hours, billable to clients; NS; T2	FTF	NODOC	DS	OD	L	FS
Bijlsma-Frankema et al. (2009)	104	.05	.80	.80	TP	Trust in team members; Bijlsma-Frankema et al. (2009); T3	Monthly percentage of team hours, billable to clients; NS; T3	FTF	NODOC	DS	OD	CS	FS
Boies et al. (2010)	49	.11[f]	.91	.80	TP	Trust in teammates; Cook & Wall (1980)	Performance in business simulation game; NS	FTF	NODOC	DS	OD	L	FS
Carmeli et al. (2012)	77	.41	.86	.73	TL	Trust among team members; Robinson (1996)	Team learning; Tucker & Edmondson (2003)	V	NODOC	SS	SR	L	FS
Carmeli et al. (2012)	77	.32	.86	.85	TP	Trust among team members; Robinson (1996)	Quality of stretegic decisions; Amason (1996)	V	NODOC	SS	SR	L	FS
Chen et al. (2008)	14	.85	.91	.90	S	Team trust; Jarvenpaa & Leidner (1999)	Team satisfaction; Tjosvold (1988)	V	DOC[ab]	SS	SR	CS	FS
Chen et al. (2008)	14	.77	.91	.80	TP	Team trust; Jarvenpaa & Leidner (1999)	Grades for case reports; NS	V	DOC[ab]	DS	SR	CS	FS
Chou et al. (2013)	46	.58	.80	.94	TP	Cognitive trust among team members; Kanawattanachai & Yoo (2002)	Team effectiveness & efficiency; Hoegl and Gemuenden (2001)	FTF	NODOC	SS	SR	CS	FS
Cogliser et al. (2012)	71	.03[f]	.85	.80	TP	Team trustworthiness; Jarvenpaa & Leidner (1999)	Score for final group paper; NS	FTF	DOC[ab]	DS	OD	CS	FS
Connelly & Turel (2011)	55	.02	.95	.80	TP	Trust in the team members;	Grade for team assignment; NS	V	DOC[ab]	DS	OD	L	FS
Costa (2003)	112	.22	.87	.75	TP	Trust; Costa (2000)	Perceived task performance; Roe, Ten Horn, Zinovieva, and Dienes (1997)	FTF	NODOC	SS	SR	CS	FS
Costa (2003)	112	.21	.87	.85	S	Costa (2000)	Team satisfaction; Smith & Barclay (1997)	FTF	NODOC	SS	SR	CS	FS
Costa (2003)	112	.43	.87	.71	COM	Costa (2000)	Attitudinal commitments; Freese & Schalk (1996)	FTF	NODOC	SS	SR	CS	FS

(*Appendix continues*)

Study	*N*	*r*	α Team trust	α Team effectiveness	Team effectiveness	Measure of trust	Measure of team effectiveness	Moderator coding: Virtuality	Moderator coding: Process documentation	Methodical moderators: Source of information	Methodical moderators: Performance measure	Methodical moderators: Time series	Methodical moderators: Study design
Costa (2003)	112	−.27	.87	.76	COM	Costa (2000)	Continuance commitment; Freese & Schalk (1996)	FTF	NODOC	SS	SR	CS	FS
Costa et al. (2009)	79	.30	.85	.80	TP	Team trust climate; Costa, Bijlsma-Frankema, & deJong (2009); T1	Grades for research project; NS; T3	FTF	NODOC	DS	SR	L	FS
Costa et al. (2009)	79	.10	.84	.80	TP	Perceived trustworthiness; Cummings & Bromiley (1996); T1	Grades for research project; NS; T3	FTF	NODOC	DS	SR	L	FS
Costa et al. (2009)	79	−.06	.85	.80	TP	Team trust climate; Costa, Bijlsma-Frankema, & deJong (2009); T2	Grades for research project; NS; T3	FTF	NODOC	DS	SR	L	FS
Costa et al. (2009)	79	−.15	.88	.80	TP	Perceived trustworthiness; Cummings & Bromiley (1996); T2	Grades for research project; NS; T3	FTF	NODOC	DS	SR	L	FS
Costa et al. (2009)	79	.31	.85	.80	TP	Team trust climate; Costa, Bijlsma-Frankema, & deJong (2009); T3	Grades for research project; NS; T3	FTF	NODOC	DS	SR	L	FS
Costa et al. (2009)	79	.23	.90	.80	TP	Perceived trustworthiness, Cummings & Bromiley (1996); T3	Grades for research project; NS; T3	FTF	NODOC	DS	SR	L	FS
Curseu & Schruijer (2010)	174	.53	.75	.78	TP	Team trust; Lewis (2003)	Perceived team effectiveness; Guzzo, Yost, Campbell & Shea (1993); Curşeu (2003)	FTF	NODOC	SS	SR	CS	FS
Curseu & Schruijer (2010)	174	.25	.75	.80	TP	Team trust; Lewis (2003)	Grade for the team research project; NS	FTF	NODOC	DS	SR	CS	FS
Dayan & DiBenedetto (2010)	93	.58	.85	.82	TL	Cognitive trust; Kanawattanachai & Yoo (2002)	Team learning; Lynn et al. (2000)	FTF	NODOC	SS	SR	CS	FS

(*Appendix continues*)

Study	*N*	*r*	α Team trust	α Team effectiveness	Team effectiveness	Measure of trust	Measure of team effectiveness	Moderator coding: Virtuality	Moderator coding: Process documentation	Methodical moderators: Source of information	Methodical moderators: Performance measure	Methodical moderators: Time series	Methodical moderators: Study design
Dayan & DiBenedetto (2010)	93	.12	.85	.78	TP	Cognitive trust; Kanawattanachai & Yoo (2002)	Speed-to-market; Lynn et al. (2000)	FTF	NODOC	SS	SR	CS	FS
Dayan & DiBenedetto (2010)	93	.56	.85	.81	TP	Cognitive trust; Kanawattanachai & Yoo (2002)	New product success; Cooper & Kleinschmidt (1987)	FTF	NODOC	SS	SR	CS	FS
Dayan & DiBenedetto (2010)	93	.66	.72	.82	TL	Affective trust; Kanawattanachai & Yoo (2002)	Team learning; Lynn et al. (2000)	FTF	NODOC	SS	SR	CS	FS
Dayan & DiBenedetto (2010)	93	.25	.72	.78	TP	Affective trust; Kanawattanachai & Yoo (2002)	Speed-to-market; Lynn et al. (2000)	FTF	NODOC	SS	SR	CS	FS
Dayan & DiBenedetto (2010)	93	.53	.72	.81	TP	Affective trust; Kanawattanachai & Yoo (2002)	New product success; Cooper & Kleinschmidt (1987)	FTF	NODOC	SS	SR	CS	FS
De Jong & Dirks (2012) -- Study 1	67	.29	.91	.80	TP	Intrateam trust; De Jong & Elfring (2010); T2	Role-based performance; De Jong & Dirks (2012); T2	FTF	NODOC	DS	SR	CS	FS
De Jong & Dirks (2012) -- Study 1	41	.38	.91	.80	TP	Intrateam trust; De Jong & Elfring (2010); T3	Role-based performance; De Jong & Dirks (2012); T3	FTF	NODOC	DS	SR	CS	FS
De Jong & Dirks (2012) -- Study 1	67	.32	.91	.80	TP	Intrateam trust; De Jong & Elfring (2010); T1	Role-based performance; De Jong & Dirks (2012); T2	FTF	NODOC	DS	SR	L	FS
De Jong & Dirks (2012) -- Study 1	67	.31	.91	.80	TP	Intrateam trust; De Jong & Elfring (2010); T1	Role-based performance; De Jong & Dirks (2012); T3	FTF	NODOC	DS	SR	L	FS
De Jong & Dirks (2012) -- Study 1	67	.31	.91	.80	TP	Intrateam trust; De Jong & Elfring (2010); T2	Role-based performance; De Jong & Dirks (2012); T3	FTF	NODOC	DS	SR	L	FS
De Jong & Dirks (2012) -- Study 2	67	.22	.91	.88	TP	Intrateam trust; De Jong & Elfring (2010); T1	Team performance; De Jong & Dirks (2012); T1	FTF	NODOC	DS	SR	CS	FS
De Jong & Dirks (2012) -- Study 2	43	.32	.91	.91	TP	Intrateam trust; De Jong & Elfring (2010); T1	Team performance; De Jong & Dirks (2012); T2	FTF	NODOC	DS	SR	L	FS

(*Appendix continues*)

Study	*N*	*r*	α Team trust	α Team effectiveness	Team effectiveness	Measure of trust	Measure of team effectiveness	Moderator coding: Virtuality	Moderator coding: Process documentation	Methodical moderators: Source of information	Methodical moderators: Performance measure	Methodical moderators: Time series	Methodical moderators: Study design
De Jong & Elfring (2010)	73	.59	.91	.90	E	Intrateam trust; De Jong & Elfring (2010)	Team effort; George (1992); Mulvey & Klein (1998)	FTF	NODOC	SS	SR	CS	FS
De Jong & Elfring (2010)	73	.30	.91	.87	TP	Intrateam trust; De Jong & Elfring (2010)	Team performance; De Jong & Elfring (2010)	FTF	NODOC	DS	SR	CS	FS
Dirks (1999)	42	−.20	.98	.80	TP	Trust; McAllister (1995)	Effectiveness: Number of blocks in tower game; NS	FTF	DOC[c]	DS	OD	CS	LS
Dirks (1999)	42	.00	.98	.80	TP	Trust; McAllister (1995)	Efficiency: Ratio of the group's actual performance to its expected performance; NS	FTF	DOC[c]	DS	OD	CS	LS
Dirks (1999)	42	−.02	.98	.80	CP	Trust; McAllister (1995)	Helping; Dirks (1999)	FTF	DOC[c]	DS	SR	CS	LS
Dirks (1999)	42	.00	.98	.80	KS	Trust; McAllister (1995)	Expressing ideas; Dirks (1999)	FTF	DOC[c]	DS	SR	CS	LS
Dirks (1999)	42	.01	.98	.80	E	Trust; McAllister (1995)	Task motivation; Kuhlman & Marshello (1975); Messick & McClintock (1968)	FTF	DOC[c]	DS	SR	CS	LS
Dirks (2000)	30	.37	.96	.80	TP	Trust in teammates; McAllister (1995); T1	Wins in basketball games; NS; T2	FTF	NODOC	DS	OD	L	FS
Dirks (2000)	30	.23[f]	.96	.80	TP	Trust in teammates; McAllister (1995); T2	Wins in basketball games; NS; T1	FTF	NODOC	DS	OD	L	FS
Geister et al. (2006)	52	.63	.93	.81	TP	Team trust; McAllister (1995)	Perceived team performance; Hertel, Konradt & Orlikowski (2004)	V	NODOC	SS	SR	CS	FS
Geister et al. (2006)	52	−.08	.93	.80	TP	Team trust; McAllister (1995)	Expert rating of form of proposal; NS	V	NODOC	DS	SR	CS	FS
Geister et al. (2006)	52	.22	.93	.80	TP	Team trust; McAllister (1995)	Expert rating of content of proposal; NS	V	NODOC	DS	SR	CS	FS
Geister et al. (2006)	52	.92	.93	.95	S	Team trust; McAllister (1995)	Satisfaction; McGrath (1991); Riordan & Weatherly (1999)	V	NODOC	SS	SR	CS	FS
Hakonen & Lipponen (2009)	31	.70	.94	.73	TP	Team trust; Cummings & Bromiley (1996); McAllister (1995)	Team effectiveness; Connolly, Jessup & Valacich (1990)	V	NODOC	SS	SR	CS	FS

(*Appendix continues*)

Study	*N*	*r*	α Team trust	α Team effectiveness	Team effectiveness	Measure of trust	Measure of team effectiveness	Moderator coding: Virtuality	Moderator coding: Process documentation	Methodical moderators: Source of information	Methodical moderators: Performance measure	Methodical moderators: Time series	Methodical moderators: Study design
Hempel et al. (2009)	102	.19	.74	.77	TP	Affect-based trust; McAllister (1995)	Ancona & Caldwell (1992)	FTF	NODOC	DS	SR	L	FS
Hempel et al. (2009)	102	.25	.85	.77	TP	Cognition-based trust; McAllister (1995)	Ancona & Caldwell (1992)	FTF	NODOC	DS	SR	L	FS
Hertel et al. (2004)	31	.23	.89	.82	TP	Team trust; Hertel (2002)	Team performance; Hertel, Konradt & Orlikowski (2004)	V	NODOC	DS	SR	CS	FS
Iacono & Weisband (1997)	14	.59	.85	.80	TP	Content analysis; NS	Grades of project paper; NS	V	DOC[b]	DS	SR	CS	FS
Jarvenpaa et al. (2004)	52	.62	.85	.93	S	Interpersonal trust; Schoorman, Mayer, and Davis (1996); T2	Satisfaction; Valacich, Dennis, and Nunamaker (1992); T3	V	DOC[b]	SS	SR	L	FS
Jarvenpaa et al. (2004)	52	.49	.85	.96	TP	Interpersonal trust; Schoorman et al. (1996); T2	Subjective outcome quality; Maurer & Taulli (1994); T3	V	DOC[b]	SS	SR	L	FS
Jarvenpaa et al. (2004)	52	.15	.85	.80	TP	Interpersonal trust; Schoorman et al. (1996); T2	Grade on business plan; NS; T3	V	DOC[b]	DS	SR	L	FS
Jarvenpaa et al. (2004)	52	.55	.85	.92	COH	Interpersonal trust; Schoorman et al. (1996); T2	Cohesiveness; Chidambaram (1996); T3	V	DOC[b]	SS	SR	L	FS
Jarvenpaa et al. (2004)	52	.25	.87	.93	S	Interpersonal trust Pearce, Sommer, Morris, and Frideger (1992); T1	Satisfaction; Valacich et al. (1992); T3	V	DOC[b]	SS	SR	L	FS
Jarvenpaa et al. (2004)	52	.27	.87	.96	TP	Interpersonal trust Pearce et al. (1992); T1	Subjective outcome quality; Maurer & Taulli (1994); T3	V	DOC[b]	SS	SR	L	FS
Jarvenpaa et al. (2004)	52	.05	.87	.80	TP	Interpersonal trust Pearce et al. (1992); T1	Grade on business plan; NS; T3	V	DOC[b]	DS	SR	L	FS
Jarvenpaa et al. (2004)	52	.20	.87	.92	COH	Interpersonal trust Pearce et al. (1992); T1	Cohesiveness; Chidambaram (1996); T3	V	DOC[b]	SS	SR	L	FS
Joshi et al. (2009)	28	.58	.68	.70	COM	Cognition-based trust; McAllister (1995)	Commitment; Allen & Meyer (1990)	V	NODOC	SS	SR	CS	FS
Joshi et al. (2009)	28	.33	.68	.72	TP	Cognition-based trust; McAllister (1995)	Manager rating of team performance; Mortensen & Hinds (2001)	V	NODOC	DS	SR	CS	FS
Kanawattanachai & Yoo (2002)	36	−.04	.89	.80	TP	Cognition-based trust; Cook & Wall (1980); McAllister (1995); T1	Financial performance business game; NS; T1	V	DOC[b]	DS	OD	CS	FS

(*Appendix continues*)

Study	*N*	*r*	α Team trust	α Team effectiveness	Team effectiveness	Measure of trust	Measure of team effectiveness	Moderator coding: Virtuality	Moderator coding: Process documentation	Methodical moderators: Source of information	Methodical moderators: Performance measure	Methodical moderators: Time series	Methodical moderators: Study design
Kanawattanachai & Yoo (2002)	36	−.14	.86	.80	TP	Affect-based trust; Cook & Wall (1980); McAllister (1995); T1	Financial performance business game; NS; T1	V	DOC[b]	DS	OD	CS	FS
Kanawattanachai & Yoo (2002)	36	.34	.89	.80	TP	Cognition-based trust; Cook & Wall (1980); McAllister (1995), T2	Financial performance business game; NS; T2	V	DOC[b]	DS	OD	CS	FS
Kanawattanachai & Yoo (2002)	36	.32	.86	.80	TP	Affect-based trust; Cook & Wall (1980); McAllister (1995); T2	Financial performance business game; NS; T2	V	DOC[b]	DS	OD	CS	FS
Kanawattanachai & Yoo (2002)	36	.39	.93	.80	TP	Cognition-based trust; Cook & Wall (1980); McAllister (1995); T3	Financial performance business game; NS; T3	V	DOC[b]	DS	OD	CS	FS
Kanawattanachai & Yoo (2002)	36	.30	.93	.80	TP	Affect-based trust; Cook & Wall (1980); McAllister (1995); T3	Financial performance business game; NS; T3	V	DOC[b]	DS	OD	CS	FS
Kanawattanachai & Yoo (2002)	36	.14	.89	.80	TP	Cognition-based trust; Cook & Wall (1980); McAllister (1995); T1	Financial performance business game; NS; T2	V	DOC[b]	DS	OD	L	FS
Kanawattanachai & Yoo (2002)	36	−.03	.86	.80	TP	Affect-based trust; Cook & Wall (1980); McAllister (1995); T1	Financial performance business game; NS; T2	V	DOC[b]	DS	OD	L	FS
Kanawattanachai & Yoo (2002)	36	.10	.89	.80	TP	Cognition-based trust; Cook & Wall (1980); McAllister (1995); T1	Financial performance business game; NS; T3	V	DOC[b]	DS	OD	L	FS
Kanawattanachai & Yoo (2002)	36	−.03	.86	.80	TP	Affect-based trust; Cook & Wall (1980); McAllister (1995); T1	Financial performance business game; NS; T3	V	DOC[b]	DS	OD	L	FS
Kanawattanachai & Yoo (2002)	36	.24	.89	.80	TP	Cognition-based trust; Cook & Wall (1980); McAllister (1995); T2	Financial performance business game; NS; T3	V	DOC[b]	DS	OD	L	FS
Kanawattanachai & Yoo (2002)	36	.21	.86	.80	TP	Affect-based trust; Cook & Wall (1980); McAllister (1995); T2	Financial performance business game; NS; T3	V	DOC[b]	DS	OD	L	FS

(*Appendix continues*)

Study	*N*	*r*	α Team trust	α Team effectiveness	Team effectiveness	Measure of trust	Measure of team effectiveness	Moderator coding: Virtuality	Moderator coding: Process documentation	Methodical moderators: Source of information	Methodical moderators: Performance measure	Methodical moderators: Time series	Methodical moderators: Study design
Kanawattanachai & Yoo (2007)	38	.07	.85	.80	TP	Cognition-based trust; Cook & Wall (1980); McAllister (1995); T1	Stock price in business simulation game; NS; T1	V	DOC[b]	DS	OD	CS	FS
Kanawattanachai & Yoo (2007)	38	.42	.85	.80	TP	Cognition-based trust; Cook & Wall (1980); McAllister (1995); T2	Stock price in business simulation game; NS; T2	V	DOC[b]	DS	OD	CS	FS
Kanawattanachai & Yoo (2007)	38	.32	.85	.80	TP	Cognition-based trust; Cook & Wall (1980); McAllister (1995); T3	Stock price in business simulation game; NS; T3	V	DOC[b]	DS	OD	CS	FS
Kanawattanachai & Yoo (2007)	38	.14	.85	.80	TP	Cognition-based trust; Cook & Wall (1980); McAllister (1995); T1	Stock price in business simulation game; NS; T2	V	DOC[b]	DS	OD	L	FS
Kanawattanachai & Yoo (2007)	38	.07	.85	.80	TP	Cognition-based trust; Cook & Wall (1980); McAllister (1995); T2	Stock price in business simulation game; NS; T3	V	DOC[b]	DS	OD	L	FS
Kanawattanachai & Yoo (2007)	38	.39	.5	.80	TP	Cognition-based trust; Cook & Wall (1980); McAllister (1995); T2	Stock price in business simulation game; NS; T3	V	DOC[b]	DS	OD	L	FS
Kirkman et al. (2006)	40	.24	.93	.80	TP	Team trust; Jarvenpaa & Leidner (1999)	Customer satisfaction; NS	V	NODOC	DS	SR	CS	FS
Langfred (2004)	71	−.10	.83	.80	TP	Team trust; Simons & Peterson (2000)	Rating of teams' case analysis; NS	FTF	NODOC	DS	SR	CS	FS
Langfred (2007)	31	.18	.89	.80	TP	Team trust; Simons & Peterson (2000); T1	Score for team project; NS; T3	FTF	NODOC	DS	SR	L	FS
Langfred (2007)	31	.30	.89	.80	TP	Team trust; Simons & Peterson (2000); T2	Score for team project; NS; T3	FTF	NODOC	DS	SR	L	FS
Lee et al. (2010)	34	.40	.85	.91	TP	Team trust: disclosure; Gillespie (2003)	Team effectiveness; Faraj & Sproull (2000)	FTF	NODOC	SS	SR	L	FS
Lee et al. (2010)	34	.64	.93	.91	TP	Team trust: Reliance; Gillespie (2003)	Team effectiveness; Faraj & Sproull (2000)	FTF	NODOC	SS	SR	L	FS
Lee et al. (2010)	34	.49	.85	.94	KS	Team trust: Disclosure; Gillespie (2003)	Team knowledge sharing; Faraj & Sproull (2000)	FTF	NODOC	SS	SR	L	FS

(*Appendix continues*)

Study	*N*	*r*	α Team trust	α Team effectiveness	Team effectiveness	Measure of trust	Measure of team effectiveness	Moderator coding: Virtuality	Moderator coding: Process documentation	Methodical moderators: Source of information	Methodical moderators: Performance measure	Methodical moderators: Time series	Methodical moderators: Study design
Lee et al. (2010)	34	.77	.93	.94	KS	Team trust: Reliance; Gillespie (2003)	Team knowledge sharing; Faraj & Sproull (2000)	FTF	NODOC	SS	SR	L	FS
Maurer (2010)	218	.14	.85	.80	TP	Team trust; Tsai (2000); Tsai & Ghoshal (1998)	Product innovation; Human & Provan (1997)	FTF	NODOC	SS	SR	L	FS
Maurer (2010)	218	.15	.85	.80	TP	Team trust; Tsai (2000); Tsai & Ghoshal (1998)	Product success; NS	FTF	NODOC	SS	SR	L	FS
Olson et al. (2007)	85	.56	.92	.85	TP	Competence-based trust; McAllister (1995)	Diehl & Stroebe (1987); Amason (1996)	V	NODOC	DS	SR	CS	FS
Palanski et al. (2011) -- Study 1	35	.24	.86	.88	TP	Mayer & Gavin (2005)	Third-party rating of team performance; Mott (1972)	FTF	NODOC	DS	SR	CS	FS
Palanski et al. (2011) -- Study 2	16	.84	.90	.88	TP	Mayer & Gavin (2005)	Third-party rating of team performance; Mott (1972)	FTF	NODOC	DS	SR	CS	FS
Parayitam & Dooley (2007)	109	.15	.88	.85	TP	Affect-based trust; McAllister (1995)	Diehl & Stroebe (1987); Amason (1996)	V	NODOC	SS	SR	CS	FS
Parayitam & Dooley (2007)	109	.65	.92	.85	TP	Cognition-based trust; McAllister (1995)	Diehl & Stroebe (1987); Amason (1996)	V	NODOC	SS	SR	CS	FS
Peterson & Behfar (2003)	67	−.20	.89	.80	TP	Intragroup trust; Simons & Peterson (2000); T1	Team grades for group project; NS; T1	FTF	NODOC	DS	SR	CS	FS
Peterson & Behfar (2003)	67	−.10	.89	.80	TP	Intragroup trust; Simons & Peterson (2000); T1	Team grades for group project; NS; T2	FTF	NODOC	DS	SR	L	FS
Pinjani & Palvia (2013)	58	.37	.89	.86	TP	Team trust; Pinjani & Palvia (2013)	Team effectiveness; Pinjani & Palvia (2013)	V	NODOC	SS	SR	CS	FS
Pinjani & Palvia (2013)	58	.83	.89	.88	KS	Team trust; Pinjani & Palvia (2013)	Knowledge sharing; Pinjani & Palvia (2013)	V	NODOC	SS	SR	CS	FS
Pitts (2010)	49	.14[f]	.79	.80	TP	Cognitive trust; Kanawattanachai & Yoo (2002)	Profit in simulation game; NS	V	DOC[a]	DS	OD	CS	FS
Pitts (2010)	49	−.08[f]	.78	.80	TP	Affective trust; Kanawattanachai & Yoo (2002)	Profit in simulation game; NS	V	DOC[a]	DS	OD	CS	FS

(*Appendix continues*)

Study	*N*	*r*	α Team trust	α Team effectiveness	Team effectiveness	Measure of trust	Measure of team effectiveness	Moderator coding: Virtuality	Moderator coding: Process documentation	Methodical moderators: Source of information	Methodical moderators: Performance measure	Methodical moderators: Time series	Methodical moderators: Study design
Politis (2003)	49	−.14	.86	.90	TP	Faith in peers; Cook & Wall (1980)	Nonfinancial team performance; Crouch (1980)	FTF	NODOC	SS	SR	CS	FS
Politis (2003)	49	−.18	.76	.90	TP	Confidence in peers; Cook & Wall (1980)	Nonfinancial team performance; Crouch (1980)	FTF	NODOC	SS	SR	CS	FS
Politis (2003)	49	.04	.86	.82	TP	Faith in peers; Cook & Wall (1980)	Financial team performance; NS	FTF	NODOC	DS	OD	CS	FS
Politis (2003)	49	.06	.76	.82	TP	Confidence in peers; Cook & Wall (1980)	Financial team performance; NS	FTF	NODOC	DS	OD	CS	FS
Porter & Lilly (1996)	80	.22	.84	.80	TP	Moorman, Zaltman, & Deshpande (1992)	Grades for team project; NS	FTF	DOC[d]	DS	SR	CS	FS
Porter & Lilly (1996)	80	.79	.84	.91	COM	Moorman et al. (1992)	Commitment; Porter & Lilly (1996)	FTF	DOC[d]	SS	SR	CS	FS
Rau (2005)	111	−.03	.85	.80	TP	Robinson (1996)	Return on average assets of banks; NS	V	NODOC	DS	OD	L	FS
Small & Rentsch (2010)	60	.27	.86	.88	TP	Perception of team wide trust; Simons & Peterson (2000); T1	Performance rating by business coach; Small & Rentsch (2010); T1	FTF	NODOC	DS	SR	CS	FS
Small & Rentsch (2010)	60	.26	.86	.80	TP	Perception of team wide trust; Simons & Peterson (2000); T1	Performance score in business simulation game; NS; T1	FTF	NODOC	DS	OD	CS	FS
Small & Rentsch (2010)	60	.43	.86	.92	TP	Perception of team wide trust; Simons & Peterson (2000); T1	Performance rating by business coach; Small & Rentsch (2010); T2	FTF	NODOC	DS	SR	L	FS
Small & Rentsch (2010)	60	.28	.86	.80	TP	Simons & Peterson (2000); T1	Performance score in business simulation game; NS; T2	FTF	NODOC	DS	OD	L	FS
Smith & Barclay (1997)	103	.24	.84	.71	TP	Relationship investment & communication openness; Smith & Barclay (1997)	Perceived task performance; Smith & Barclay (1997)	V	NODOC	SS	SR	CS	FS
Smith & Barclay (1997)	103	.23	.72	.71	TP	Forbearance from opportunism; Smith & Barclay (1997)	Perceived task performance; Smith & Barclay (1997)	V	NODOC	SS	SR	CS	FS

(*Appendix continues*)

Study	*N*	*r*	α Team trust	α Team effectiveness	Team effectiveness	Measure of trust	Measure of team effectiveness	Moderator coding: Virtuality	Moderator coding: Process documentation	Methodical moderators: Source of information	Methodical moderators: Performance measure	Methodical moderators: Time series	Methodical moderators: Study design
Smith & Barclay (1997)	103	.21	.84	.60	S	Relationship investment & communication openness; Smith & Barclay (1997)	Satisfaction; Smith & Barclay (1997)	V	NODOC	SS	SR	CS	FS
Smith & Barclay (1997)	103	.48	.72	.60	S	Forbearance from opportunism; Smith & Barclay (1997)	Satisfaction; Smith & Barclay (1997)	V	NODOC	SS	SR	CS	FS
Stewart & Gosain (2006)	67	.26	.88	.80	E	Affective trust; McAllister (1995)	Team effort; NS	V	DOC[e]	SS	SR	CS	FS
Stewart & Gosain (2006)	67	.07	.89	.80	E	Cognitive trust; McAllister (1995)	Team effort; NS	V	DOC[e]	SS	SR	CS	FS
Stewart & Gosain (2006)	67	.06	.88	.80	TP	Affective trust; McAllister (1995)	Task completion; NS	V	DOC[e]	DS	OD	CS	FS
Stewart & Gosain (2006)	67	.10	.89	.80	TP	Cognitive trust; McAllister (1995)	Task completion; NS	V	DOC[e]	DS	OD	CS	FS
Walumbwa et al. (2011)	146	.25	.75	.85	CP	Campion, Medsker, & Higgs (1993)	Group citizenship behavior; Lee & Allen (2002)	FTF	NODOC	DS	SR	L	FS
Walumbwa et al. (2011)	146	.46	.75	.88	TP	Campion, Medsker, & Higgs (1993)	Group performance; Bono & Judge (2003)	FTF	NODOC	DS	SR	L	FS
Webber (2008a)	78	.43	.85	.91	TP	Team trust; McAllister (1995)	Reliable performance; McAllister (1995)	FTF	DOC[d]	SS	SR	CS	FS
Webber (2008a)	78	.77	.85	.85	CP	Team trust; McAllister (1995)	Citizenship behavior; McAllister (1995)	FTF	DOC[d]	SS	SR	CS	FS
Webber (2008a)	54	.15	.85	.80	TP	Team trust; McAllister (1995)	Grades for team project; NS	FTF	DOC[d]	DS	SR	L	FS
Webber (2008a)	78	.06[f]	.84	.91	TP	Cognitive trust; McAllister (1995)	Reliable performance; McAllister (1995)	FTF	DOC[d]	SS	SR	L	FS
Webber (2008a)	78	.14[f]	.84	.85	CP	Cognitive trust; McAllister (1995)	Citizenship behavior; McAllister (1995)	FTF	DOC[d]	SS	SR	L	FS
Webber (2008a)	54	.22	.84	.80	TP	Cognitive trust; McAllister (1995)	Grades for team project; NS	FTF	DOC[d]	DS	SR	CS	FS
Webber (2008a)	78	.21[f]	.88	.91	TP	Affective trust; McAllister (1995)	Reliable performance; McAllister (1995)	FTF	DOC[d]	SS	SR	L	FS
Webber (2008a)	78	.23[f]	.88	.85	CP	Affective trust; McAllister (1995)	Citizenship behavior; McAllister (1995)	FTF	DOC[d]	SS	SR	L	FS
Webber (2008a)	54	.27	.88	.80	TP	Affective trust; McAllister (1995)	Grades for team project; NS	FTF	DOC[d]	DS	SR	CS	FS
Webber (2008b)	31	.58	.77	.91	COH	Cognitive trust; McAllister (1995)	Dobbins & Zaccaro (1986)	V	NODOC	SS	SR	CS	FS
Webber (2008b)	31	.77	.75	.91	COH	Affective trust; McAllister (1995)	Dobbins & Zaccaro (1986)	V	NODOC	SS	SR	CS	FS

(*Appendix continues*)

Study	*N*	*r*	α Team trust	α Team effectiveness	Team effectiveness	Measure of trust	Measure of team effectiveness	Moderator coding: Virtuality	Moderator coding: Process documentation	Methodical moderators: Source of information	Methodical moderators: Performance measure	Methodical moderators: Time series	Methodical moderators: Study design
Webber (2008b)	31	.74	.77	.92	TP	Cognitive trust; McAllister (1995)	McAllister (1995)	V	NODOC	SS	SR	CS	FS
Webber (2008b)	31	.57	.75	.92	TP	Affective trust; McAllister (1995)	McAllister (1995)	V	NODOC	SS	SR	CS	FS
Williams & Karau - Study 2 (1991)	17	.35	.85	.80	TP	Manipulation	Number of generated ideas; NS	FTF	NODOC	DS	OD	L	LS
Williams & Karau - Study 3 (1991)	20	−.17	.85	.80	TP	Manipulation	Number of generated ideas; NS	FTF	NODOC	DS	OD	L	LS
Zornoza et al. (2009)	22	−.07	.80	.80	TP	Group trust climate; Pearce et al. (1992); T1	Grades for team reports; NS; T2	FTF	DOC[c]	DS	OD	L	LS
Zornoza et al. (2009)	22	.60	.80	.80	S	Group trust climate; Pearce et al. (1992); T1	Group satisfaction; Chidambaram & Jones (1993); T1	FTF	DOC[c]	SS	SR	CS	LS
Zornoza et al. (2009)	22	.54	.80	.70	S	Group trust climate; Pearce et al. (1992); T1	Group satisfaction; Chidambaram & Jones (1993); T2	FTF	DOC[c]	SS	SR	L	LS
Zornoza et al. (2009)	22	.51	.80	.66	COH	Group trust climate; Pearce et al. (1992); T1	Group cohesion; Hogg & Hains (1998); T1	FTF	DOC[c]	SS	SR	CS	LS
Zornoza et al. (2009)	22	.76	.80	.79	COH	Group trust climate; Pearce et al. (1992); T1	Group cohesion; Hogg & Hains (1998); T2	FTF	DOC[c]	SS	SR	L	LS
Zornoza et al. (2009)	22	.06	.80	.80	TP	Group trust climate; Pearce et al. (1992); T1	Grades for team reports; NS; T2	V; Videoconference	DOC[c]	DS	OD	L	LS
Zornoza et al. (2009)	22	.65	.80	.80	S	Group trust climate; Pearce et al. (1992); T1	Group satisfaction; Chidambaram & Jones (1993); T1	V; Videoconference	DOC[c]	SS	SR	CS	LS
Zornoza et al. (2009)	22	.72	.80	.70	S	Group trust climate; Pearce et al. (1992); T1	Group satisfaction; Chidambaram & Jones (1993); T2	V; Videoconference	DOC[c]	SS	SR	L	LS
Zornoza et al. (2009)	22	.59	.80	.66	COH	Group trust climate; Pearce et al. (1992); T1	Group cohesion; Hogg & Hains (1998); T1	V; Videoconference	DOC[c]	SS	SR	CS	LS
Zornoza et al. (2009)	22	.82	.80	.79	COH	Group trust climate; Pearce et al. (1992); T1	Group cohesion; Hogg & Hains (1998); T2	V; Videoconference	DOC[c]	SS	SR	L	LS
Zornoza et al. (2009)	22	.27	.80	.80	TP	Group trust climate; Pearce et al. (1992); T1	Grades for team reports; NS; T2	V; Computer-mediated communication	DOC[c]	DS	OD	L	LS
Zornoza et al. (2009)	22	.60	.80	.80	S	Group trust climate; Pearce et al. (1992); T1	Group satisfaction; Chidambaram & Jones (1993); T1	V; Computer-mediated communication	DOC[c]	SS	SR	CS	LS

(*Appendix continues*)

Study	*N*	*r*	α Team trust	α Team effectiveness	Team effectiveness	Measure of trust	Measure of team effectiveness	Moderator coding: Virtuality	Moderator coding: Process documentation	Methodical moderators: Source of information	Methodical moderators: Performance measure	Methodical moderators: Time series	Methodical moderators: Study design
Zornoza et al. (2009)	22	.85	.80	.70	S	Group trust climate; Pearce et al. (1992); T1	Group satisfaction; Chidambaram & Jones (1993); T2	V; Computer-mediated communication	DOC[c]	SS	SR	L	LS
Zornoza et al. (2009)	22	.76	.80	.66	COH	Group trust climate; Pearce et al. (1992); T1	Group cohesion; Hogg & Hains (1998); T1	V; Computer-mediated communication	DOC[c]	SS	SR	CS	LS
Zornoza et al. (2009)	22	.89	.80	.79	COH	Group trust climate; Pearce et al. (1992); T1	Group cohesion; Hogg & Hains (1998); T2	V; Computer-mediated communication	DOC[c]	SS	SR	L	LS

Note. *N* = sample size number of teams; *r* = uncorrected effect size; TP = team performance; TL = team learning; KS = knowledge sharing; S = satisfaction; COM = commitment; E = effort; CP = contextual performance; COH = cohesiveness; NS = no scale; Time of data measurement = T1, T2, T3 or T4; FTF = face-to-face team; V = virtual team; NODOC = no documentation; DOC = documentation; SS = same source; DS = different source; SR = subjective rating; OD = objective data; CS = cross-sectional data; L = longitudinal data; FS = field study; LS = laboratory study.

[a] Written documentation of chat via instant messenger. [b] Written documentation via e-mail. [c] Video recording. [d] Written minutes of a meeting (contributions of every team member were documented). [e] Electronic tracking of contributions. [f] Effect size indicates effect of team performance on team trust.

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