

Influence of Peer Feedback on the Relations Between Communication, Coordination, and Performance in Global Virtual Teams

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BACKGROUND

Use of global virtual teams (GVTs) is increasing, however they are often faced with numerous challenges and coordination difficulties. We proposed an indirect relation between communication frequency and GVT performance, as mediated by process coordination.

Research on peer feedback suggests that it might address some of the challenges facing GVTs. Using a cluster randomized quasi-experimental design, we varied the degree and detail offered by a peer feedback system to investigate moderation of this indirect effect. Together, we hypothesized:

- 1) Process coordination will be positively related to GVT performance
- 2) Frequency of communication will be positively related to process coordination
- 3) Process coordination will mediate the relation between communication frequency and GVT performance
- 4) Peer feedback will moderate the strength of the indirect effect between communication frequency and performance, as mediated by process coordination

METHOD

Sample. We used data from 13,224 individuals, who were members of 1,839 GVTs, sampled through the X-Culture.org Project. X-Culture is an international business case competition involving business students from more than 100 universities in 40 different countries.

Peer Feedback Conditions. *Condition 1 (Baseline):* Peer feedback only obtained and distributed at project completion. *Condition 2 (Exposure):* Peer feedback obtained weekly, but not distributed until project end. *Condition 3 (Distribution):* Peer feedback obtained and distributed weekly.

Measures. *Communication Frequency:* Number of times media like email, Skype, GoogleDocs, Facebook, phone, and instant messenger were used. *Process Coordination:* Communication smoothness, workflow integration, project planning, and role clarity rated on a 1 (“No problem”) to 5 (“Big problem”) scale. *Performance.* Quality of report detailing GVT’s proposed solution to business case.

Analyses. Focal analytical model was a multi-group, multilevel moderated mediation model. Figure 1 presents model.

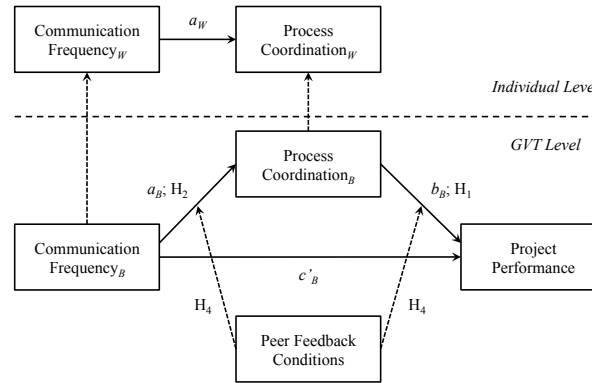


Figure 1. Pathways labeled as in traditional mediation models. *W* subscripts denote within- or individual-level, *B* subscripts denote between- or GVT-level. H_2 was tested by a_B , b_B . H_4 reflected moderated of the indirect effect across different peer feedback conditions.

Table 1. Reliability and Intraclass Correlations

	ICC(1)	ICC(2)	α_B
Communication Frequency	.20	.60	.81
Process Coordination	.20	.60	.79
Project Performance	.48	--	.89

Table 2. Multilevel Measurement Invariance

	$\chi^2(df)$	CFI	RMSEA	ΔCFI	$\Delta RMSEA$
Configural Invariance	2,447 (198)	.95	.04	--	--
Metric Invariance	2492 (162)	.95	.04	-.001	-.002
Scalar Invariance	2649 (144)	.95	.04	-.003	.001

MAJOR FINDINGS

- Hypothesis 1: Process coordination \rightarrow GVT performance
 - $a_B = .57, p < .01 \therefore H_1$ supported
- Hypothesis 2: Communication frequency \rightarrow process coordination
 - $b_B = .10, p < .13 \therefore H_2$ not supported
- Hypothesis 3: mediation effect
 - $a_B \times b_B = .06$, 95% Monte Carlo confidence interval = $-.02 - .14 \therefore H_3$ not supported
- Hypothesis 4: moderated mediation
 - Baseline vs. Exposure = $a_B \times b_B = .05$, 95% MCCI = $-.02 - .12$
 - Baseline vs. Distribution = $a_B \times b_B = .43$, 95% MCCI = $.12 - .81$
 - Distribution vs. Exposure = $a_B \times b_B = .38$, 95% MCCI = $.06 - .77 \therefore H_4$ supported

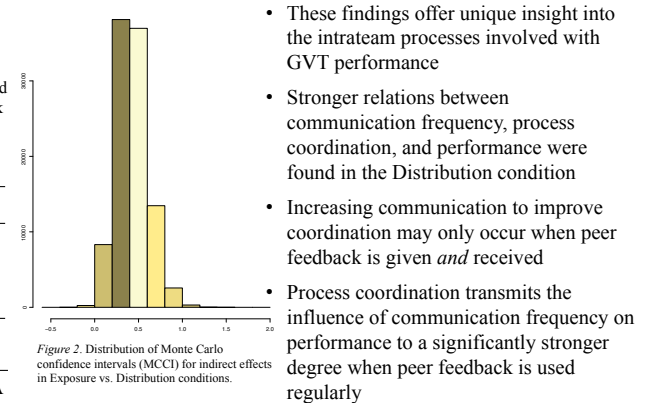


Figure 2. Distribution of Monte Carlo confidence intervals (MCCI) for indirect effects in Exposure vs. Distribution conditions.

- These findings offer unique insight into the intrateam processes involved with GVT performance
- Stronger relations between communication frequency, process coordination, and performance were found in the Distribution condition
- Increasing communication to improve process coordination may only occur when peer feedback is given and received
- Process coordination transmits the influence of communication frequency on performance to a significantly stronger degree when peer feedback is used regularly
- To reduce optimize GVT performance, organizations should use a peer feedback system that requests and distributes feedback at regular intervals throughout project completion