Association for Information Systems
AIS Electronic Library (AISeL)

AMCIS 2006 Proceedings

Americas Conference on Information Systems (AMCIS)

December 2006

The Nature and Influence of Conflict in Virtual Teams

Robin Wakefield
Baylor University

Dorothy Leidner
Baylor University

Prashant Palvia
National University of Singapore

Follow this and additional works at: http://aisel.aisnet.org/amcis2006

The Nature and Influence of Conflict in Virtual Teams

Robin L. Wakefield
Baylor University
Robin_Wakefield@baylor.edu

Dorothy E. Leidner
Baylor University
Dorothy_Leidner@baylor.edu

Shan Pan
National University of Singapore
pansl@comp.nus.edu.sg

ABSTRACT

The use of the virtual team is increasing among organizations seeking the efficiencies associated with overcoming barriers of time, place and distance. However, conflict is emerging as a significant barrier to team performance with studies suggesting that conflict may be unmanageable in distributed groups. This study explores the nature and influence of conflict using the responses of actual virtual team members. We examine the individual effects of task, relational and process conflict on team member commitment, cohesiveness and satisfaction, as well as the proportional effects of all three conflict types. Our findings indicate that each conflict type has a particular influence on team members, but the relative proportion of each may change those determinations. Despite geographical dispersion and increased technology use, we argue that conflict in the virtual team is not unduly destructive although a range of management strategies may be necessary to ensure positive team performance.

Keywords

Virtual teams, Conflict, Distributed groups, Commitment, Satisfaction

INTRODUCTION

The use of the virtual team is increasing among organizations seeking the efficiencies associated with overcoming barriers of time, place and distance. However, conflict is emerging as a significant barrier to team performance as members face unique challenges related to distance and technology mediation (see Armstrong and Cole, 2002; Hinds and Bailey, 2003). Despite indications that the virtual team structure is playing a key role in organizational design, relatively few studies examine the dynamics of conflict among team members.

Field study research posits that distance and technology dependence are significant indicators of conflict. Greater technology use in collocated teams leads to ineffective communication among members and greater group conflict (Cramton, 2001; Hollingshead, 1996). Since geographical dispersion increases reliance on communication technologies among virtual team members, some research concludes that conflict may be unmanageable in distributed groups (see Hinds and Baily, 2003; Kraut, Fussel, Brennan, and Seigel, 2002). Yet, the virtual team structure continues to proliferate (Canney-Davison and Ward, 1999).We explore this paradox by examining the influence of conflict as well as the effect of conflict composition on virtual team members.

Using the responses of actual virtual team members across several organizations, we explore the dynamics of conflict on team members' commitment, cohesiveness and satisfaction. We focus on the individual effects of task, relational and process conflict as well as the proportional effects of all three conflict types. Our findings indicate that each conflict type has a particular influence on team members, but the relative proportion of each type may change those determinations.

THE NATURE OF TEAM CONFLICT

Conflict originates from real or perceived differences among team members that create tension in the group (De Dreu, Harinck, Van Vianen, 1999). Based on work and relationship factors, researchers identify three distinct conflict types in collocated groups: task, relational and process conflict (Amason and Sapienza, 1997; Jehn, 1995, 1997). Task conflict is defined as disagreements arising about the work to be done by the group. Relational conflict is more personal in nature and based on social issues rather than work-related concerns. Process conflict is described as disagreements about the manner in

which the work is to be accomplished. Conflict arises as members interact and perceive differences among themselves regarding levels of expertise, experience, and knowledge as well as distinctive social norms, personal habits and customs.

The multidimensional nature of conflict is clearly demonstrated in traditional (i.e. collocated) team studies showing that the three conflict types may influence groups positively and/or negatively. For example, work-related disagreements among members can stimulate creativity and innovative ideas resulting in positive team performance (Amason and Schweiger, 1994) including higher decision quality and understanding (Schwenk, 1990). Conflict arising from different perspectives and experiences can improve decision making as information is exchanged among members (Tjosvold, 1997). However, the rise of task conflict may also trigger affective or relational conflict which can undermine efforts and result in dysfunctional teams (Korsgaard, Schweiger, and Sapienza ,1995).

Since group conflict is a multidimensional construct, each individual type is an incomplete representation of the conflict construct as each dimension represents some portion of total conflict. For example, task conflict occurs when team members hold different opinions about the work to be accomplished and singularly may positively influence team performance. However, the relationship between task conflict and relational conflict suggests that a rise in one is accompanied by a rise in the other. This association explains how conflict that is beneficial in one context (e.g. low task conflict with low relational conflict) may be detrimental to the group in another context (e.g. high task conflict with high relational conflict). Hence, as the dimensions of conflict interact, group conflict may impact virtual team performance in unexpected ways.

THEORETICAL BASES

Adaptive Structuration Theory

Similar to prior IS research, we define virtual teams as geographically distributed work groups whose members have common goals and use communication technologies to achieve those goals. Adaptive Structuration Theory (AST) is the basis for proposing positive virtual team outcomes in the presence of conflict. Two important aspects of structuration theory are: 1) individuals determine how technology is used (DeSanctis and Poole, 1994) and 2) technology interactions are recursive (Orlikowski, 2000). These facets of AST directly apply to virtual teams through the increased use of technology to share information. According to AST, individual users establish the role of technology in aiding organizational or team objectives. Then, through the repeated use of a technology in ways specific to particular situations (i.e. recursive use), users establish a set of rules that governs technology use. In other words, technologies are adapted and used by groups to enhance or maintain existing work processes - not to create new ways of doing things.

In applying AST to the virtual team, we propose that communication technologies are adapted by members in ways that support group work processes. Furthermore, members are likely to follow rules and conventions of technology use learned in prior group contexts. Even though some teams may be more/less dependent on communication technologies, each member utilizes available resources in ways that enable work-related communication and behaviors. Thus, we argue that increasing technology use will not change fundamental group behaviors related to accomplishing the team goal. One recent study finds that the extent of relational and task conflict was similar for distributed teams and collocated teams (Mortensen and Hinds, 2001) suggesting that increased use of communication technology has little affect on team behaviors. Hence, AST may operate similarly in each context. That is, team members (collocated or dispersed) determine how technology is used and persist in following the established norms in order to accomplish the goal. Thus, increased technology use in the virtual team compared to the collocated team is not likely to create differing behaviors if technology is adapted in ways to maintain the status quo.

Interdependence Theory

Interdependence theory states that conflict can be either detrimental or beneficial to decision making based on individual perceptions of goal interdependence (Deutsch, 1973). Goal interdependence refers to the need for input from others in order to achieve joint performance outcomes (Tjosvold, 1991). Thus, when individuals perceive positive goal interdependence, "we're all in this together," conflict is less detrimental to team outcomes since pursuit of the goal remains the primary focus. Furthermore, team members are less apt to make negative attributions when disagreements or criticisms arise if they believe each member is essential for goal achievement. In contrast, the lack of interdependence results in an "every man for himself" attitude leading to destructive conflict. The interdependence theory is applied in the virtual context to establish goal similarity as an important antecedent of reduced team conflict.

HYPOTHESES

The research model and the hypothesized relationships among the research constructs are illustrated in Figure 1.

Goal Similarity and Virtual Team Conflict

Goal similarity describes the extent to which team members believe they share common objectives and agree to what is important to the team. A lack of common goals among members is likely to result in the formation of the "ingroup" and the "outgroup" as members work with those whose motivations are more closely aligned with their own. Members perceiving they are in the "outgroup" experience decreased satisfaction, cooperation, group cohesiveness and higher levels of conflict (William and O'Reilly, 1998). Thus, the extent to which team members share common goals affects their attitudes and behaviors toward team tasks and each other. Based on interdependence theory, a lack of shared goals is likely to create conflict that is detrimental as members "do their own thing." Conversely, as goal similarity increases the more likely it becomes that conflict will be allayed in favor of achieving team objectives. This leads to the following hypothesis.

> H1: The greater the goal similarity among virtual team members, the less task, relational and process conflict.

Task Conflict and Team Commitment, Cohesiveness and Satisfaction

Task conflict is work-related and based on differences of opinion or understanding of the tasks necessary to accomplish team goals (Jehn, Northcraft, and Neale, 1999). In traditional teams, task conflict is shown to result in both positive and negative team performance. On the positive side, task conflict is associated with two beneficial outcomes: increased group decision quality and desire to stay in the group (i.e. commitment). Task related disagreements can be the impetus for innovation and creativity that results in higher quality decisions (Pelled, Eisenhardt, and Xin, 1999). The focus on task-related issues stimulates learning and creativity leading to more effective and innovative solutions (De Dreu and West, 2001; Simons and Peterson, 2000). Thus, we expect that task conflict will result in positive virtual team outcomes leading to the following hypothesis:

> H2: The greater the task conflict among virtual team members, the greater member commitment, cohesiveness, and satisfaction.

Relational Conflict and Team Commitment, Cohesiveness and Satisfaction

Relational conflict originates from disagreements among team members about issues unrelated to the work (Jehn, 1995). When collocated team members perceive they are disliked by other members the typical response is negative and personal. Studies show that relational conflict distracts members and limits the information processing ability of the team (De Dreu and Weingart, 2003). As the ability of the team to make quality decisions deteriorates, team performance suffers (Amason, 1996; Amason and Schweiger, 1997) and satisfaction declines (Jehn, 1995, 1997). In accordance with prior studies demonstrating the detrimental effects of affective conflict on team performance, we hypothesize the following:

> H3: The greater the relational conflict among virtual team members, the lower member commitment, cohesiveness, and satisfaction.

Process Conflict and Team Commitment, Cohesiveness and Satisfaction

Process conflict was first recognized in Jehn's (1997) research on intragroup conflict as a unique component of overall conflict. Process conflict involves differences related to the means of accomplishing the tasks and is described as disagreements about individual team member responsibilities and the utilization of people and resources (Jehn, 1997). Process conflict is found detrimental to the morale and productivity of traditional work groups (Jehn et al 1999). Since process conflict involves assessment of an individual's skills and abilities in order to delegate tasks, it may be difficult for members to resolve differences when attributions are personal in nature. This leads to the following hypothesis:

> H4: The greater the process conflict among virtual team members, the lower member commitment, cohesiveness, and satisfaction.

Commitment, Cohesiveness, Satisfaction and Team Performance

Research suggests that the overall effect of team conflict is negative and detrimental to team performance (Hinds and Bailey, 2003). However, low conflict or the right type of conflict (i.e. task conflict) may elicit positive attitudes among members such that greater commitment, cohesiveness and satisfaction result. With less distraction from conflict and greater positive affect within groups, members may tend to believe the team is performing at a high level. Team performance represents members' perceptions of the team's overall efficiency, quality and work excellence. Thus, the more team members believe they work effectively as a group, the greater their level of performance leading to the following:

> H5: The greater team member commitment, cohesiveness and satisfaction, the greater team performance.

PROPORTIONAL TEAM CONFLICT

The conflict literature provides ample evidence that affective conflict produces negative results whereas task conflict tends to yield positive outcomes. Yet, these two conflict types are positively correlated (e.g. Simons and Peterson, 2000) implying an

important association between task and relational conflict. For example, a high degree of task conflict may provide team benefits until a certain amount of relational conflict arises. The harmful effects of relational conflict on team outcomes may mask the benefits derived from task conflict. Since team conflict is multidimensional, an analysis of the individual components may not fully describe the impact of the construct. We define proportional conflict as the extent of each type of conflict (i.e. task, relational, process) proportional to the others and to the total amount of group conflict.

Proportional Conflict and Team Commitment, Cohesiveness and Satisfaction

Collocated team research guides the formation of the following hypotheses. Task conflict benefits group performance in collocated teams as constructive debate leads to higher quality decisions (Jehn and Chatman, 2000), group performance and member satisfaction (Amason and Schweiger, 1994). Moreover, observations indicate that high-performing teams experience some task conflict (Jehn, 1997), and task conflict contributes to group commitment (Jehn, 1995). Therefore, we propose that task conflict benefits virtual teams when it is proportionately larger.

>   H6: Conflict composition dominated by task conflict will be associated with greater commitment, cohesiveness and satisfaction.

Relational conflict is emotion-based and relates to personal or social issues not linked to team goals (Pelled, 1996). Relational conflict involves friction, tension and personality differences that hinder cognitive processing. Research suggests that negative emotional interactions are detrimental to individual satisfaction levels (Jehn and Chatman, 2000) and team commitment (Jehn, 1995). Team members also believe that relational conflict is more difficult to resolve compared to task or process conflict (Jehn, 1997). Thus, a greater proportion of relational conflict is likely detrimental to the team.

>   H7: Conflict composition dominated by relational conflict will be associated with lower commitment, cohesiveness and satisfaction.

Process conflict is based on disagreements among members about the *manner* in which team goals are to be accomplished. This includes disagreements about the delegation of duties and the overall team approach to tasks. Process conflict is associated with less satisfied members and less effective group performance (Jehn and Mannix, 2001). Process conflict is also shown to lead to irrelevant personal discussions about individual member skills than can negatively affect morale (Jehn, 1997). Thus, we hypothesize that a predominance of process conflict is detrimental to the team.

>   H8: Conflict composition dominated by process conflict will be associated with lower commitment, cohesiveness and satisfaction.

METHODOLOGY

Subjects

The hypotheses were tested using an online questionnaire and virtual team members in a major telecommunications corporation in the southwest and organizations based in Singapore. A total of ninety-nine virtual team members participated. The subjects were instructed to respond to the questionnaire while considering the virtual team on which they spend the most time. Descriptive statistics are shown in Table 1. Among the telecom group, 12 different virtual teams were identified and as many as 30 different teams among the Singapore organizations. Compared to telecom respondents, the virtual team members outside of the U.S. are more likely younger, on smaller teams, with less time spent on the virtual team and as an employee of the organization. T-tests to compare the means of each research variable between the two groups showed no significant differences.

U.S. Telecommunication Organization (n = 42)	Mean	Std. Dev.	Range
Gender: Male = 41% Female = 59%			
Number on Team	19	8.6	3 to 27
Age of Member	42.6 years	9.4	24 to 59
Length of time on Team	5.2 years	3.1	1 to 13
Length of time with Company	8.9 years	4.1	1 to 14
Singapore Organizations (n=57)			
Gender: Male = 57% Female = 43%			
Number on Team	9	7.1	2 to 27
Age of Member	35.2 years	7.4	24 to 57
Length of time on Team	4.2 years	2.2	1 to 10
Length of time with Company	5.4 years	3.5	1 to 14

Table 1. Descriptive Statistics of Virtual Team Members

Measures

Scale items for each construct are shown in Appendix A. Virtual team conflict is measured using the intragroup conflict scale developed by Jehn (1995) with eight items measuring task conflict and relational conflict. Process conflict is measured using three items from Shah and Jehn (1993) and goal similarity with three items adapted from Jehn (1995). Commitment and cohesiveness are measured with four items derived from Jehn and Chatman (2000). Individual satisfaction levels are from the job satisfaction scale of Staples, Hulland, and Higgins (1999) and team performance measures include five items originating with Ancona and Caldwell (1992).

Proportional conflict is defined as the relative amount of each type of conflict comprising overall conflict. Thus, conflict composition is the amount of each type of conflict in relation to all three. For example, on a 1-7 scale if a respondent rated task conflict a 5, relational conflict a 4, and process conflict a 2, then proportional task conflict is 5/(5+4+2) or 0.455. Similarly, proportional relational conflict is 4/(5+4+2) or 0.363 and proportional process conflict is 2/(5+4+2) or 0.182. In this manner, proportional conflict was calculated from each respondent's original conflict ratings.

Analysis

Partial least squares (PLS) techniques were used to test the hypothesized relationships. PLS explains variance in the endogenous constructs using path coefficients that are analogous to standardized regression coefficients. Five hundred random samples were generated using the bootstrapping approach and replacement sampling. Parameter estimates and standard errors were computed across the total sample set. Correlations among the research variables are shown in Table 2.

Each factor was evaluated by examining the estimates of composite reliability, average variance extracted (AVE) and Cronbach's alpha. Recommended minimum levels are 0.7 for composite reliability, 0.5 for AVE and 0.7 for Cronbach's alpha (Hair, Anderson, Tatham and Black, 1998). Appendix A shows that each construct exceeds the recommended minimums, supporting the scale items as representative of each construct.

|	1	2	3	4	5	6	7	8
Goal Similarity	1.00							
Task Conflict	-.26	1.00						
Relational Conflict	-.17	.58	1.00					
Process Conflict	-.24	.72	-.17	1.00				
Commitment	.64	-.02	-.15	-.21	1.00			
Cohesiveness	.69	-.11	-.20	-.20	.80	1.00		
Satisfaction	.45	-.12	-.20	-.21	.45	.43	1.00	
Performance	.63	-.27	-.15	-.35	.54	.63	.57	1.00

Table 2. Correlations

RESULTS AND DISCUSSION

Goal Similarity and Conflict

The results in Figure 1 support H1 indicating significant negative relationships between goal similarity and task conflict (β = -.263, $p < .05$), relational conflict (β = -.174, $p < .05$) and process conflict (β = -.242, $p < .05$). When members believe "we are all in this together," it appears that negative attributions are mitigated and conflict of all types is lessened. Thus, increasing perceptions of a common bond among members has the effect of reducing all three types of conflict and may be an effective conflict reduction strategy.

Figure 1: Model Results

N=500
* p < .05
** p < .01
*** p < .001

- - - - - - - - → Denotes Non-Significance
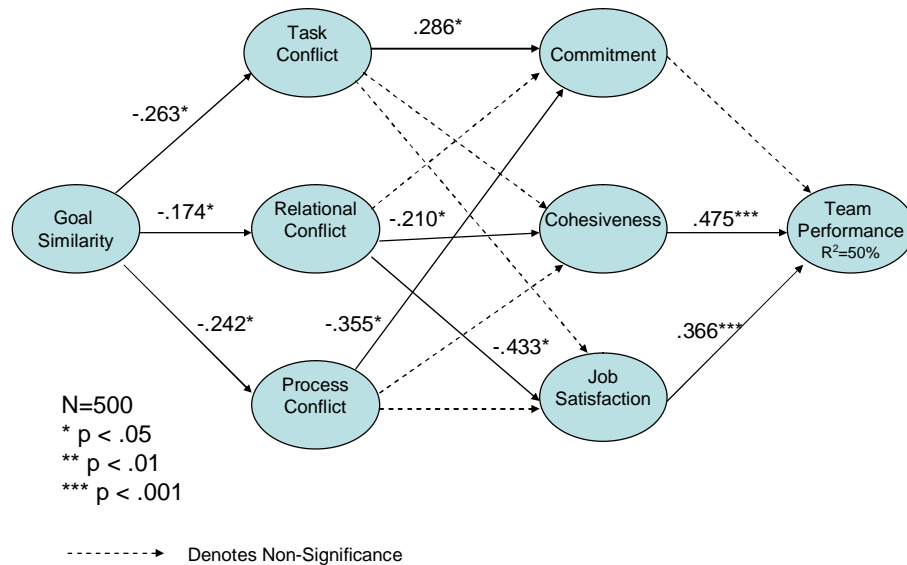
Conflict and Commitment, Cohesiveness and Satisfaction

Partial support is found for H2-H4 which examines each conflict type in relation to commitment, cohesion and satisfaction. Task conflict results in greater commitment ($\beta = .286$, $p < .05$) with non-significant relationships to cohesiveness and satisfaction (H2). Relational conflict is associated with less cohesiveness ($\beta = -.210$, $p < .05$) and less satisfaction ($\beta = -.433$, $p < .05$), but not with commitment (H3). Process conflict results in less commitment ($\beta = -.355$, $p < .05$) with no significant effect on cohesiveness or satisfaction.

As a cognitive type of conflict, task conflict allows members to participate in decision making that may generate positive attitudes within the team and promote greater team commitment. Since the focus of task conflict is on achieving team goals, it is likely that fewer personal attributions arise and the overall effect is positive. However, greater process conflict appears disruptive to team unity such that members may be less willing to associate in the future. One plausible explanation for the positive versus negative impact of task and process conflict on commitment is that process conflict produces personal attributions that lead to negative attitudes.

Although task and process conflict appear unrelated to cohesiveness and satisfaction, relational conflict has a definite negative effect on cohesiveness ($\beta = -.210$, $p < .05$) and satisfaction ($\beta = -.433$, $p < .05$) (H3). The conflict literature details the harmful results of affective conflict in organizations and our results support these findings in the virtual team context. However, a significant negative relationship with team commitment is not supported. In sum, as relational conflict rises team members have less liking for other members, less team spirit and greater job dissatisfaction.

The findings also show that cohesiveness ($\beta = .475$, $p < .001$) and satisfaction ($\beta = .366$, $p < .001$) are strong indicators of performance (H5), explaining about 50 percent of the variance. Team members believe that their work quality is at a high level when they feel unified as a group and satisfied with the work environment. However, if relational conflict increases and team cohesiveness and satisfaction are disrupted, team performance is likely to suffer.

In sum, goal similarity is an important factor in the management of virtual team conflict because of the direct effect on each type of conflict. However, a rigorous reduction of all types of conflict may not be favorable since task conflict is generally beneficial. Reducing task conflict may also decrease the quality of group decisions and innovative solutions that enhance team performance. In contrast, the influence of cohesiveness and satisfaction on team performance warrants managerial attention to the degree of relational conflict that arises.

Proportional Conflict Composition and Commitment, Cohesiveness and Satisfaction

H6-H8 were tested using correlations of proportional task, relational and process conflict with commitment, cohesion and satisfaction. Partial support is found for H6. When task conflict dominates the composition, it is positively correlated with commitment and satisfaction in the telecom group (r = .31, .28; p =.022, .037) and commitment in the Singapore teams (r =.22, p = .049). Although task conflict is not significantly related to satisfaction in the original model (figure 1), its influence is demonstrated when it dominates conflict composition. Whereas collocated team members are less committed when task conflict is proportionately higher, virtual team members appear more committed.

H7 is partly supported in that a greater proportion of relational conflict is associated with significant reductions in cohesiveness (r = -.26, p = .049) and satisfaction (r = -.31, p = .023) for the telecom organization. Similar to findings in traditional teams, a predominance of relational conflict is detrimental as it disrupts group spirit and satisfaction. A greater proportion of process conflict does not show significant correlation with the variables for virtual teams (H8), whereas it is significantly correlated with less cohesiveness, commitment and satisfaction in traditional teams (Jehn and Chatman, 2000). Additional research is necessary to determine the robustness of our findings in other industries, among different types of distributed teams as well as in global virtual teams.

Telecommunications	Proportional Task	Proportional Relational	Proportional Process
Goal Similarity	-.06	-.03	.16
Commitment	**.31***	-.15	.06
Cohesion	.21	**-.26***	.03
Satisfaction	**.28***	**-.31***	.04
Team Performance	-.03	.10	**.39****
Singapore Companies			
Goal Similarity	-.03	-.01	.07
Commitment	**.22***	-.05	-.20
Cohesion	.17	-.16	-.01
Satisfaction	.15	-.12	-.04
Team Performance	.03	.14	-.19

*p< .05, ** p < .01

Table 3. Proportional Conflict Composition

LIMITATIONS AND CONCLUSION

Limitations exist in any empirical research including the present study in which the sample is a self-selection of virtual team participants. Whereas the strength of the study lies in the use of actual virtual team members, the extent of generalizability is unknown. Further research is required to determine the robustness of the findings across other industries and virtual team contexts.

Nevertheless, this study contributes to the understanding of conflict and conflict composition in a largely unexplored team context. Findings indicate that virtual team members respond differently to conflict compared to traditional team members. Relational conflict is clearly detrimental to team unity and satisfaction which directly influence team performance. However, team member spirit may be augmented by cognitive disputes that focus on the team goal. Members may be less willing to associate on future projects when process conflict increases, whereas increases in task conflict may stir cognitive processes that enable members to bond. While creating conflict seems counterintuitive for successful teamwork, eliminating conflict contradicts the finding that positive team outcomes (e.g. commitment, satisfaction) may result. A better approach may be to evaluate the absolute and proportionate level of each type of conflict and integrate that understanding with the interrelatedness of the conflict dimensions. We encourage continued research in this area as the virtual team represents a major restructuring of the organization in the electronic age.

ACKNOWLEDGMENTS

Appendix A. Scale Items

Item	Mean	Std Dev	Composite Reliability	AVE	Cronbach's Alpha
Task Conflict: None….. A lot			.92	.80	.88
How frequently are there conflicts about ideas in your team?	3.21	1.49			
How often do people in your team disagree about opinions regarding the work to be done?	3.25	1.43			
To what extent are there differences of opinion regarding tasks?	3.14	1.39			
Relational Conflict: None ….. A lot			.96	.88	.93
How much tension is there among members of your team?	3.02	1.51			
How much are personality conflicts evident in your team?	2.87	1.30			
How much emotional conflict is there among members of your team?	2.81	1.36			
Process Conflict: None ….. A lot			.91	.84	.81
How often do member disagree about who should do what?	2.71	1.39			
How much conflict about delegation of tasks exists in your team?	2.57	1.26			
Commitment: Strongly disagree….. Strongly agree			.93	.86	.84
I am committed to my team.	5.72	1.56			
I plan to continue working in my team.	5.34	1.70			
Cohesiveness: Strongly disagree…..Strongly agree			.92	.86	.83
I generally like the other members of my team.	5.56	1.42			
There is group spirit in my team.	5.10	1.67			
Goal Similarity: Strongly disagree…..Strongly agree			.94	.88	.86
As a work unit, my team members and I have similar goals.	5.10	1.47			
My team members and I all agree on what is important to our team.	5.02	1.57			
Team Performance: Poor …..Excellent			.93	.74	.91
Efficiency	5.00	1.46			
Quality	5.31	1.18			
Technical innovation	5.20	1.41			
Adherence to schedule/budget	5.06	1.24			
Work excellence	5.44	1.18			
Satisfaction: Very dissatisfied……Very satisfied			.87	.70	.78
Your physical work environment	5.01	1.50			
The amount of variety in your job	4.78	1.69			
Your virtual work environment	4.88	1.51			

REFERENCES

1. Amason, A. (1996) Distinguishing effects of functional and dysfunctional conflict on strategic decision making: Resolving a paradox for top management teams, *Academy of Management Journal*, 39, 123-148.
2. Amason, A., and Sapienza, H. (1997) The effects of top management team size and interaction norms on cognitive and affective conflict, *Journal of Management,* 23, 4, 496-516.
3. Amason, A., and Schweiger, D. M. (1994) Resolving the paradox of conflict, strategic decision making, and organizational performance, *International Journal of Conflict Management,* 5, 239-253.
4. Ancona, D. G. and Caldwell, D. F. (1992) Bridging the boundary: External activity and performance in organizational teams, *Administrative Science Quarterly,* 37, 634-665.
5. Armstrong, D. J., and Cole, P. (2002) Managing distances and differences in geographically distributed work groups. P. J. Hinds and S. Kiesler (Eds.), *Distributed Work*, MIT Press, Cambridge, MA.
6. Canney-Davison, S., and Ward, K. (1999) *Leading International Team,* McGraw-Hill, Berkshire, England.
7. Cramton, C. D. (2001) The mutual knowledge problem and its consequences in geographically dispersed teams, *Organization Science,* 12, 346-371.
8. De Dreu, C. K. W. (1997) Productive conflict: The importance of conflict management and conflict issue, In C. K. S. De Dreu and E. Van de Vliert (Eds.), *Using Conflict in Organizations,* Sage, London, 9-22.

9. De Dreu, C. K. W., Harinck, F. and Van Vianen, A. M. (1999) Conflict and performance in groups and organizations. In C. L. Cooper and I. T. Robertson (Eds.), *International Review of Industrial and Organizational Psychology,* 14, Wiley, Chichester, United Kingdom, 369-414.

10. De Dreu, C. K. W. and Weingart, L. R. (2003) A contingency theory of task conflict and performance in groups and organizational teams. In M. A. West, D. Tjosvold, and K. Smith (Eds.), *International Handbook of Organizational Teamwork and Cooperative Working*, Wiley, Chichester, United Kingdom, 151-166.

11. De Dreu, C. K. W. and West, M. A. (2001) Minority dissent and team innovation: The importance of participation in decision making, *Journal of Applied Psychology,* 86, 1191-1201.

12. DeSanctis, G., and Poole, M. S. (1994) Capturing the complexity in advanced technology use: Adaptive structuration theory, *Organization Science,* 5, 121-147.

13. Deutsch, M. (1973) *Conflict Resolution: Constructive and Destructive Processes,* Yale University Press, New Haven, CT.

14. Hair, J., Anderson, R., Tatham, R. and Black W. (1998) *Multivariate Data Analysis,* Prentice Hall, NJ.

15. Hinds, P. J. and Bailey, D. E. (2003) Out of sight, out of sync: Understanding conflict in distributed teams, *Organization Science,* 14, 6, 615-632.

16. Hollingshead, A. B. (1996) Information suppression and status persistence in group decision making: The effects of communication media, *Human Communication Research,* 23, 2, 193-219.

17. Jehn, K. A. (1995) A mulitmethod examination of the benefits and detriments of intragroup conflict, *Administrative Science Quarterly*, 40, 256-282.

18. Jehn, K. A. (1997) A qualitative analysis of conflict types and dimensions in organizational groups, *Administrative Science Quarterly,* 42, 530-557.

19. Jehn, K. A., and Mannix, E. (2001) The dynamic nature of conflict: A longitudinal study of intragroup conflict and group performance, *Academy of Management Journal,* 44, 2, 236-251.

20. Jehn, K. A. and Chatman, J. A. (2000). The influence of proportional and perceptual conflict composition on team performance, *The International Journal of Conflict Management,* 11, 1, 56-73.

21. Jehn, K. A., Northcraft, G. B., and Neale, M. A. (1999) Why differences make a difference: A field study of diversity, conflict, and performance in workgroups, *Administrative Science Quarterly,* 44, 741-763.

22. Korsgaard, M . A., Schweiger, D. M., and Sapienza, H. J. (1995) Building commitment, attachment, and trust in top management teams: The role of procedural justice, *Academy of Management Journal,* 38, 60-84.

23. Kraut, R. E., Fussel, S. R., Brennan, S. E., and Seigel, J. (2002) Understanding effects of proximity on collaboration: Implications for technologies to support remote collaborative work. In P. J. Hinds and S. Kiesler (Eds.), *Distributed Work,* MIT Press, Cambridge, MA, 137-162.

24. Orlikowski, W. J. (2000) Using technology and constituting structures: A practice lens for studying technology in organizations, *Organization Science*, 11, 404-428.

25. Pelled, L. H. (1996) Demographic diversity, conflict, and work group outcomes: An intervening process theory, *Organization Science*, 7, 615-631.

26. Pelled, L. H., Eisenhardt, K. M., and Xin, K. R. (1999) Exploring the black box: An analysis of work group diversity, conflict, and performance, *Administrative Science Quarterly,* 44, 1-28.

27. Schwenk, C. (1990) Conflict in organizational decision making: An exploratory study of its effects in form-profit and not-for-profit organization, *Management Science,* 36, 436-448.

28. Shah, P. and Jehn, K. A. (1993) Do friends perform better than acquaintances?: The interaction of friendship, conflict, and task, *Group Decision and Negotiation*, 2, 149-165.

29. Simons, T., and Peterson, R. (2000) Task conflict and relationship conflict in top management teams: The pivotal role of intragroup trust, *Journal of Applied Psychology*, 85, 102-111.

30. Staples, D. S., Hulland, J. S., and Higgins, C. A. (1999) A self-efficacy theory explanation for the management of remote workers in virtual organizations, *Organization Science,* 10, 758-776.

31. Tjosvold, D. (1991) Rights and responsibilities of dissent: Cooperative conflict, *Employee Responsibilities and Rights Journal*, 4, 13-23.

32. Tjosvold, D. (1997) Conflict within interdependence: Its value for productivity and individuality. In C. K. W. De Dreu and E. Van de Vliert (Eds.), *Using Conflict in Organizations,* Sage, London, 23-37.

33. Williams, K. Y., and O'Reilly, C. A. (1998) Demography and diversity in organizations: A review of 40 years of research. In B. M. Staw and L. L. Cummings (Eds.), *Research in Organizational Behavior*, 20, JAI Press, Greenwich, CT, 77-140.