Conflict Management Strategies as Moderators in the Antecedents to Affective Conflict and its Influence on Team Effectiveness

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Strategic decisions are of paramount importance to the success of an organization. Strategic decision making teams encounter various types of conflicts in the process of making decisions. Based on information processing theory, the present study is devoted to the study of affective conflict or the disagreement among team members due to personality clashes. While affective conflict generally has deleterious consequences, in this study the antecedents of affective conflict are studied. Also studied are the effects of cognitive conflict or the disagreements arising in teams regarding tasks or content. In addition, the study investigates the relationship between conflict management styles and affective conflict. Data from 348 undergraduate and graduate students from 94 teams reveal that there is a negative relationship between affective conflict and team effectiveness. The study also reveals that, 1) there is a positive relationship between cognitive conflict and affective conflict, and (2) there is a positive relationship between process conflict and affective conflict. Hierarchical regression results reveal that cooperative conflict management style moderates the relationship between cognitive conflict and affective conflict, and competitive conflict management style moderates the relationship between process conflict and affective conflict. The implications for strategic decision making literature are discussed.

Strategic decision making teams play a vital role in the success of an organization. The team generally consists of a Chief Executive Officer (CEO) and a vice president of functional areas such as marketing, finance, production, and research and

development (R&D). This team is responsible for formulating and implementing corporate, competitive, and functional strategies, and for decisions that have long-term consequences (Eisenhardt & Zbaracki, 1992; Hambrick, 1994). The nature of the strategic decisions is such that all the team members are involved because these decisions are "important, in terms of the actions taken, the resources committed, or the precedents set" (Mintzberg et al., 1976, p.246). Examples of these decisions include restructuring decisions, plant layout decisions, new process technology decisions, conglomerate and concentric diversification decisions, and downsizing decisions. These decisions are ambiguous, unstructured, and complex (Mintzberg et al., 1976) and the nature of the ambiguity calls for teams to apply intellectual currencies together and resolve the complexity in decisions. Another major reason why teams are involved in the strategic decision is that problem-solving abilities of teams are greater than the individual capabilities and the synergy of 'one plus one is greater than two' is applicable (Daft, Bettenhausen, & Tyler, 1993). Each team member brings a variety of information and provides a wide range of perspectives to solve complex problems (Shaw, 1981). The effectiveness of teams depends on the quality of decisions made, which in turn, have influence on organizational outcomes.

Team effectiveness does not come without a cost, however. The team members interact in the process of making decisions and this interaction may often result in two types of conflicts: cognitive conflict and affective conflict. The literature provides adequate support that these types of conflict have different outcomes; cognitive conflict is demonstrated to have a positive relationship with decision outcomes whereas affective conflict is negatively associated with the decision quality (Amason, 1996; Parayitam & Dooley, 2007, 2009). Some argue that the result of conflict on outcomes are equivocal (De Dreu & Weingart, 2003); whereas, a recent study demonstrated that too much cognitive conflict in decision making teams is bad (Parayitam & Dooley, 2011). Existing evidence also shows that the relationship between cognitive conflict and innovation is curvilinear (De Dreu & Weingart, 2003), and that the relationship between cognitive conflict and decision quality is curvilinear (Parayitam & Dooley, 2011).

Realizing that affective conflict has dysfunctional consequences, cognitive conflict has positive outcomes, and cognitive conflict has the potential to result in affective conflict, researchers focus on the mechanisms that reduce the effect of affective conflict and examine the dynamics of the conflict (Huan & Yazdanifard, 2012; Tjosvold, Law, & Sun, 2006). In addition to cognitive and affective conflict, there is another type of conflict (i.e., process conflict), which has been understudied in the literature but has interesting consequences. Disagreements about 'how to' implement decisions reflect the disagreements about allocation of resources and delegation of authority and whether these can be either productive or dysfunctional. For example, members having different functional backgrounds have different approaches to implementing decisions. Research has demonstrated that informational diversity results in increasing process conflict (Tjosvold et al., 2006). Process conflict, to some extent, is inevitable in teams. However, increasing process conflict has the potential to result in affective conflict because members may perceive being disliked by others when their viewpoints about the way in which decisions need to be implemented are not acceptable to others.

The interrelationships among various conflict types aside, the more important issue is their impact on task effectiveness. Conflict management scholars argue that conflict needs to be managed so that the negative impact of conflicts on team effectiveness is minimized (Alper, Tjosvold, & Law, 2000; Chen, Liu, & Tjosvold, 2004). Researchers also argue that if conflict is not dealt with properly it may result in disharmony among members and disrupt the relationships among them in the long run, which may have detrimental consequences to the organization (Jehn & Weldon, 1992; Kirkbride, Tang, & Westwood, 1991). Two types of conflict management are examined in the literature: cooperative conflict management and competitive conflict management (Deutsch, 1973). Research also supports that conflict management approaches affect team effectiveness and outcomes (Lovelace, Shapiro, & Weingart, 2001).

The present research is focused on the effect of conflict management types on conflict. Scant research exists that supports that cooperative approaches produce superior consequences over competitive approaches (Tjosvold, 1998). The conceptual model is presented in Figure 1 below.

Figure 1: *Cooperative Conflict Management as a Moderator in The Relationship Between Cognitive Conflict and Affective Conflict*
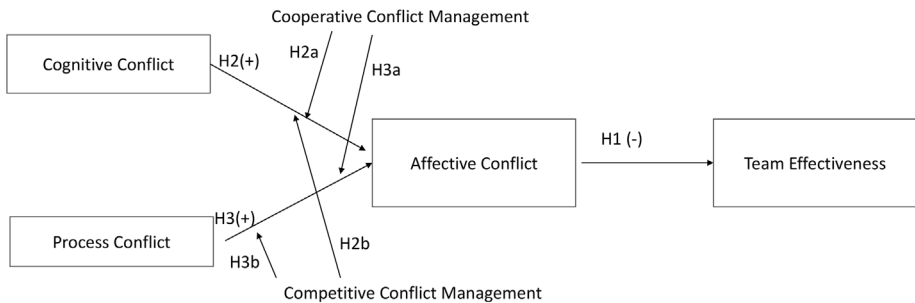
Theoretical Background and Hypotheses Development

Information processing theory (Galbraith, 1973) provides the theoretical foundation for the present research. Strategic decisions involve participation by top management team members (called Strategic Decision Making Teams, or SDMT) who are entrusted with the responsibility of formulating and implementing the corporate, competitive, and business strategies. According to information processing theory, members interact with each other and exchange information in order to make decisions. Members obtain, process, and interpret information from others and act upon it. In this process, three types of conflicts arise: cognitive conflict (task conflict), affective conflict (relationship conflict), and process conflict. Abundant research has demonstrated that cognitive conflict has positive outcomes whereas affective conflict has dysfunctional consequences (Amason, 1996; Dooley & Fryxell, 1999; Parayitam & Dooley, 2007, 2009). The research on process conflict and its consequences is very scarce, and it remains an under-researched area. In the current research, the inter-

relationships among these three types of conflict, and the effects of various conflict management approaches are studied. More specifically, the study seeks to explain the interrelated nature of various types of conflicts and how various types of conflict management styles moderate the relationships. Finally, the relationship between affective conflict and team effectiveness is examined.

Hypotheses Development

The Effects of Affective Conflict on Team Effectiveness.

Affective conflict is the disagreement among members because of personality likes and dislikes. When members do not get along, affective conflict is inevitable. Prior research has shown that affective conflict is dysfunctional because it adversely affects decision quality, decision commitment, and team effectiveness (Amason, 1996; Dooley & Fryxell, 1999; Parayitam & Dooley, 2007, 2009).

Affective conflict is concerned with people-related disagreements that include "tension, animosity, and annoyance among the team members" (Jehn, 1995, p. 258). Interaction among members may result in personality clashes and continued cognitive disagreements that may trigger animosity among the members (Janssen, Van de Vliert, & Veenstra, 1999). When these disagreements are carried to the extreme, they may trigger members to engage in political gamesmanship and sabotage decisions in the process (Finkelstein & Hambrick, 1996; Simons & Peterson, 2000). Members also tend to be 'negative, irritable, suspicious and resentful' toward others (Jehn, 1997, p. 532). When affective conflict erupts, emotional clashes and tensions cloud the task-related efforts and members spend considerable time on interpersonal aspects of the group rather than on the technical details of tasks (Parayitam & Dooley, 2007). When team members divert their energies to resolve interpersonal conflicts rather than tasks, they will not be able to adequately understand the decision's relation to broader organizational goals. Finally, affective conflict decreases goodwill and mutual understanding among members, which hinders the completion of tasks (Deutsch, 1960). The negative consequences of affective conflict have been amply demonstrated by prior research and based on the above, the following hypothesis can be advanced:

> *Hypothesis 1: There will be a negative relationship between affective conflict and team effectiveness.*

The Effects of Cognitive Conflict and Process Conflict on Affective Conflict

Abundant research evidence is available about the positive effect of cognitive conflict on decision outcomes (Amason, 1996; Dooley & Fryxell, 1999; Parayitam & Dooley, 2009). When members congregate on a decision making platform, they synthesize various alternatives. In this process, cognitive conflict about the content of the decision is inevitable. Cognitive conflict is concerned with disagreements among team members about the task or content, which then leads to a more thorough scrutiny of information. It enables the members to "provide deeper understanding of task issues and an exchange of information that facilitates generation of ideas, problem-solving and decision making" (Pelled, Eisenhardt, & Xin, 1999, p. 22-23). Though past research

has demonstrated that cognitive conflict is positively related to decision quality and decision commitment, there are limits to cognitive conflict. Indeed, the relationship between cognitive conflict and decision outcomes has been shown to be curvilinear (Parayitam & Dooley, 2011). Some empirical evidence suggests that cognitive conflict also breeds affective conflict (Parayitam & Dooley, 2009). The underlying logic behind this is that too much conflict about the content may be interpreted by the members as personal attacks. In other words, it is more likely that members may perceive task-related arguments and disagreements as personal attacks and these perceptions may eventually trigger affective conflict (Jehn, 1995; Ross & Ross, 1989). Disagreements about content for extended periods may result in misattributions, use of harsh and emotional language in arguments, or hurtful and aggressive tactics by the members to convince others about their viewpoints, which adversely affects the relationship between the members and results in affective conflict (Jehn, 1997). Members whose ideas are disputed (cognitive conflict) may feel that others in the group do not respect their ideas or viewpoints. They assume that their competence is challenged when others criticize their ideas, thus triggering emotional or affective conflict. Abundant empirical evidence supports that teams that experience higher levels of cognitive conflict will experience higher levels of affective conflict (Simons & Peterson, 2000).

Another important type of conflict is process conflict, which deals with the distribution and allocation of resources to implement decisions. Unfortunately, the effect of process conflict on decision outcomes remains an under-researched area. A common example of process conflict is a situation where top management team members advance competing arguments about allocation of resources to their respective departments. Process conflict deals with the implementation of decisions that often require commitment of sizable resources, and members often come into conflict about the implementation process. For example, when members decide to launch a new plant in Europe, the manner in which it needs to be implemented paves the way for process conflict. Though research evidence is scarce, it is postulated, similar to cognitive conflict, that process conflict also gives rise to personal clashes and affective conflict. Based on the above arguments, it can be hypothesized:

> Hypothesis 2: There will be a positive relationship between cognitive conflict and affective conflict.

> Hypothesis 3: There will be a positive relationship between process conflict and affective conflict.

Moderating Effects of Conflict Management Styles on the Relationship Between (A) Cognitive Conflict and Affective Conflict, and (B) Process Conflict and Affective Conflict.

Conflict management approaches (cooperative and competitive) play an important role in conflict management. Prior research suggests that conflict management approaches affect team outcomes (Lovelace, Shapiro, & Weingart, 2001). While research is scant, some evidence suggests that a cooperative approach results in more productive consequences than competitive conflict management approaches (Deutsch, 1973; Tjosvold, 1998). The type of conflict management approach depends on the

context, purpose, and the importance of strategic decisions. When organizations are engaged in strategic decisions with long-term consequences (e.g., downsizing, expansion, diversification, strategic alliances), teams engage in serious discussions regarding the content and process of decision implementation. Members unwittingly engage in competitive conflict management and cooperative conflict management. For example, when members demand that others agree to their positions, and consider conflict as a win-lose contest or when they overstate their position to get their own way, they are engaging in competitive conflict management. On the other hand, when members encourage a 'we are in it together' attitude, and seek solutions that will be good for the team and treat conflict as a mutual problem to solve, they are engaging in the cooperative conflict management approach (Tjosvold, Law, & Sun, 2006). Prior research has demonstrated that a cooperative conflict management approach is strongly associated with task conflict and a competitive conflict management approach is strongly associated with affective conflict (Tjosvold et al., 2006). Sometimes members focus on restating their positions rather than integrating ideas, which may affect the relationship between cognitive conflict and affective conflict and also between process conflict and affective conflict. The relationship between these types of conflict depends on the strength of these two types of conflict management approaches. The cooperative approach is expected to reduce the negative effect of cognitive conflict on affective conflict. At the same time, the competitive approach is expected to increase the negative effect of process conflict on affective conflict. Based on the above arguments the following are hypothesized:

Hypothesis 2a: *Cooperative conflict management style moderates the relationship between cognitive conflict and affective conflict such that the relationship is more positive at lower levels of cooperative conflict management than at higher levels.*

Hypothesis 2b: *Competitive conflict management style moderates the relationship between cognitive conflict and affective conflict such that the relationship is more positive at higher levels of competitive conflict management style than at lower levels.*

Hypothesis 3a: *Cooperative conflict management style moderates the relationship between process conflict and affective conflict such that the relationship is more positive at lower levels of cooperative conflict management than at higher levels.*

Hypothesis 3b: *Competitive conflict management style moderates the relationship between process conflict and affective conflict such that the relationship is more positive at higher levels of competitive conflict management style than at lower levels.*

Methodology

Data and Sample

Survey data were collected from 348 graduate and undergraduate students enrolled in a capstone strategic management course at a university located in the northeastern United States. In all, there were 94 teams with an average size of team 3.8 and a standard deviation of 0.95. There were 205 male and 143 female students. In the capstone course of 'strategic management' the students engaged in a simulated game and made strategic decisions over a 16-week semester. The results from the game had significant ramifications in terms of their performance and grade, and hence, students had a considerable stake in the outcome of the decisions. Students were divided into teams and made at least 10 weekly decisions. Surveys were given at the end of the simulation game, which allowed them to report on their group dynamics when they made strategic decisions.

Strategic decisions within the simulated game included financing, marketing, production, and human resources. Examples of these strategic decisions included construction of a new plant, launching a new product, production decisions and new product development, raising money from the capital markets and major decisions in research and development. Thus, in this simulated game, the team members were actively involved in the strategic decision making process.

In general, research on top management teams involved in decision making also involved team data (Amason, 1996; Simons & Peterson, 2000; Parayitam & Dooley, 2007). Some researchers, however, have been of the opinion that data from a single respondent will be enough to provide sufficient information about the group dynamics and collect data from single source (Janssen et al., 1999; Miller et al., 1998). Team data was used in this research. Teams made decisions which were 'important, in terms of actions taken, the resources committed or the precedents set' (Mintzberg et al., 1976). Therefore, the decisions made by the team members in the simulated game were qualified under the definition of 'strategic decisions' and hence the present study can be considered under the umbrella of strategic decision making teams.

Measures, Reliability, And Validity

Before aggregating the data, inter-rater agreement coefficients (Rwg) were calculated for each of the key variables (James, Demaree, & Wolf, 1984).

The study measured *cognitive conflict* on a 7-point Likert type scale, using 3 items developed by Jehn (1995). The respondents were asked to express the existence of task-based differences and disagreements among the team members. The sample item read as: "How many differences of opinion were there within the group over the decisions?" The mean value of inter-rater agreement (Rwg) for cognitive conflict was 0.82, with the values ranging from 0.71 to 0.91. Reliability for cognitive conflict was strong, with an alpha of 0.89.

Affective conflict was measured on a 7-point Likert type scale, using 4 items developed by Jehn (1995). These items were related to the relationship conflict among the team members and the sample item read: "How much personal friction was there in the group during this decision?" The mean value of the inter-rater agreement (Rwg) for

affective conflict was 0.78, with the values ranging between 0.68 and 0.84. Reliability for the cognitive diversity scale was strong, with an alpha of 0.94.

Team effectiveness was measured using a 6-item scale developed by Van der Vegt, Emans, and Van de Vliert (2000). The sample items were: "Team members put considerable effort into their jobs"; "Team members are concerned about the quality of their work." The mean value of inter-rater agreement (Rwg) for decision quality was 0.85, with the values ranging between 0.74 and 0.92, and the alpha for the aggregated measure was 0.92.

Cooperative conflict management was measured with 5 items, on a 7-point scale, drawing from previous literature (Tjosvold et al., 2006). Respondents were asked to reflect on the extent of emphasis on mutual goals, understanding the views of all the members, and orientation towards joint benefits while making decisions. The sample question read as: "Team members treat conflict as a mutual problem to solve." The mean value of inter-rater agreement (Rwg) for cooperative conflict management quality was 0.87, with the values ranging between 0.71 and 0.93, and the alpha for the aggregated measure was 0.90.

Competitive conflict management was measured using 4 items, on a 7-point scale, also drawing on previous literature (Tjosvold et al., 2006). The competitive-approach scale measured the extent to which members viewed conflict as a win-lose situation and whether members used pressure and intimidation to get others to conform to their own view. The sample item read as: "Team members demand that others agree to their position". The mean value of inter-rater agreement (Rwg) for competitive conflict management was 0.78, with the values ranging between 0.71 and 0.89, and the alpha for the aggregated measure was 0.91.

Process conflict was measured with 3 items, on a 7-point scale that was developed by Shah and Jehn (1993). The sample item read as: "How much conflict is there about delegation of tasks within your team?" The mean value of the inter-rater agreement (Rwg) was 0.73, with the values ranging between 0.73 and 0.90 and Cronbach's alpha was 0.89.

The study included 3 control variables: organizational goals, organizational means, and team size. *Organizational goals* was measured using 4 items related to net profits, rate of growth, market share, and innovation. The mean value of inter-rater agreement (Rwg) for organizational goals was 0.82 with the values ranging between 0.71 and 0.93, and alpha for goals was 0.83. *Organizational means* was measured using 4 items including financial liquidity, advertising, product quality, and cost reduction. The mean value of the inter-rater agreement (Rwg) for organizational goals was 0.76 with the values ranging between 0.65 and 0.93, and alpha for means was 0.81. The team size was measured as the number of members in the team. The average size of the team reported in this study was 3.8 members with a standard deviation of 0.95.

Results

The means, standard deviations, and correlations among study variables are reported in Table 1 below.

Table 1: *Descriptive Statistics: Means, Standard Deviations, and Correlations*

	Mean	S.D	1	2	3	4	5	6	7	8	9
1. Organizational Goals	3.78	.260	1.000								
2.Means	3.92	.287	.777**	1.000							
3. Team Size	3.80	.954	-.115	-.026	1.000						
4.Affective Conflict	1.70	.677	-.102	-.101	.171	1.000					
5. Cognitive Conflict	2.04	.579	-.029	.010	.112	.861**	1.000				
6. Process Conflict	1.66	.543	.070	.059	.074	.869**	.850**	1.000			
7. Competitive Conflict Management	2.44	.630	-.002	.052	.004	.459**	.478**	.479**	1.000		
8. Cooperative Conflict Management	4.24	.428	.435**	.559**	.014	-.367*	-.264	-.377*	-.348*	1.000	
9. Team Effectiveness	4.19	.385	.486**	.614**	-.178	-.377*	-.210	-.347*	.429**	.849**	1.000

** p < .01
* p < .05

The initial analysis of the descriptive statistics table suggested that there were some problems with multicollinearity, because correlations between some variables were more than 0.8. Therefore, it was important to do a statistical check. It was observed that the variance inflation factor (VIF) was less than 2, suggesting that multicollinearity should not have been a problem. The variables were also centered to address this problem (Aiken & West, 1991; Kennedy, 1985).

Multiple regression analysis was used to test the hypotheses. Table 2 presents the results of hierarchical regression analysis of the effect of affective conflict on team effectiveness below.

Table 2: *Regression Results of Relationship Between Affective Conflict and Team Effectiveness*

	Column 1	Column 2
Variables	Team Effectiveness	Team Effectiveness
	Step1 [a]	Step 2
Organizational Goals	-.01 (-.09; .94)	-.02 (-.12;.90)
Means	.62** (3.07;.004)	.59** (3.14;.003)
Team Size	-.16 (-1.27; .21)	-.11 (-.93;.36)
Affective Conflict		-.30* (-2.45;.02)
R^2	.40	.49
Adjusted R^2	.36	.43
F- Value	8.33***	8.63***
ΔR^2		.09
Δ F-Value		6.08*
df	3,89	4,88

[a] standardized regression coefficients are reported; t values and p values are in parenthesis
*** p < 0.001; ** p < 0.01; *p<.05

When team effectiveness was the dependent variable, Column 1 (Step 1) showed the effect of control variables viz., organizational goals, means, and team size. Of these control variables only means was significant (β=.62; $p < .05$). The direct effects model presented in Step 2 (Column 2) suggested that affective conflict was negatively and significantly related to team effectiveness (β= -.30; $p < .05$). The model was significant (F =8.63, $p < .001$) and explained 49% of variance in team effectiveness (R^2 = .49; Adj R2= .43; ΔR^2 = .09; ΔF = 6.08, $p < 0.001$). These results suggest that affective conflict explained an additional variance of 9% when compared to the model involving the control variables only. These results support that a negative relationship exists between affective conflict and team effectiveness, thus supporting Hypothesis 1. These results are also consistent with previous research (Amason, 1996; Jehn, 1995, 1997).

The hierarchical regression results of conflict management types as a moderator in the relationship between cognitive conflict and affective conflict and between process conflict and affective conflict are presented in Table 3.

Table 3: *Hierarchical Regression Results of Conflict Management Types as a Moderator Between Cognitive Conflict and Affective Conflict and Process Conflict and Affective Conflict*

| Variables	Column 1 Affective Conflict Step1 [a]	Column 2 Affective Conflict Step 2	Column 3 Affective Conflict Step 3
Organizational Goals	-.307 (1.33; .19)	.05 (.29; .77)	.02 (.32; .76)
Means	.10 (.44; .66)	.24 (1.44; .16)	.004 (.58; .57)
Team Size	-.27 (1.86; .7)	-.15 (-1.86; .14)	-.01 (-.20; .84)
Cognitive Conflict		.39** (2.85; .007)	.45*** (4.83;.000)
Process Conflict		.54*** (3.99; .000)	.41*** (4.01;.000)
Cooperative Conflict Management			.04 (2.09;.05)
Competitive Conflict Management			.03 (1.46;.16)
Cognitive conflict x Cooperative Conflict Management			-.37*** (-4.42;.000)
Cognitive Conflict x Competitive Conflict Management			-.36*** (-4.73;.000)
Process Conflict x Cooperative Conflict Management			-.25** (-3.92; .001)
Process Conflict x Competitive Conflict Management			-.21** (-.2.69;.013)
R^2	.40	.83	.85
Adjusted R^2	.36	.81	.82
F- Value	8.35***	34.29***	20.22***
ΔR^2		.43	.02
Δ F-Value		23.19***	1.95*
df	3,89	5,87	11,81

[a] standardized regression coefficients are reported; t values and p values are in parenthesis
*** $p < 0.001$; ** $p < 0.01$; *$p<.05$

The control variables were plugged in first in Step 1 (Column 1) and the results revealed that none of the control variables were significantly influencing affective conflict. The direct effects of independent variables on affective conflict were shown in Column 2 (Step 2). The results showed that the regression coefficient of cognitive conflict on affective conflict was positive and significant (β=.39; p < .05), and also that the regression coefficient of process conflict on affective conflict was positive and significant (β= .19; p = .37). However, the regression coefficient of cognitive diversity was positive and significant (β=.54; p < .001). The model was significant (F = 34.29, p < .001) and explained 83% of variance in affective conflict because of both cognitive and process conflict (R^2 = .83; Adj R^2= .81; Δ R2 = .43; Δ F = 23.19, p < 0.05). The model explained an additional 43% variance in the dependent variable because of the two independent variables viz., cognitive conflict and process conflict. These regression results supported both Hypothesis 2 and Hypothesis 3.

The moderating effects of various types of conflict management styles were tested and presented in Step 3 (Column 3). The results showed that the regression coefficient of cognitive conflict was positive and significant (β= .45; p < .001); and the regression coefficient of process conflict was positive and significant (β= .41 ; p < .001). In addition, the coefficient for the interaction term of cooperative conflict management and cognitive conflict was negative and significant (β= -.37; p < .001); while the coefficient for the interaction term for competitive conflict management and cognitive conflict also was negative and significant (β= -.36; p < .001). Again, the interaction term for cooperative conflict management and process conflict was negative and significant (β= -.25; p < .005), and the beta coefficient for the interaction term between competitive conflict management and process conflict was negative and significant (β= -.21 ; p < .05). The regression model was significant, explaining 85% of variance in the dependent variable (R^2 = .85 ; Adj R^2 = .82 ; F = 20.22, p <.001; R^2 = .02 ; Δ F = 1.95, p < 0.05). The interaction terms explained an additional variation of 2% in affective conflict. These results supported the moderation hypotheses, Hypothesis 2a, 2b, 3a, and 3b.

Figures 1(a) 1(b), 1(c) and 1(d) show the interaction plots by showing the regression lines linking the cognitive conflict and process conflict influence on affective conflict to high and low levels of cooperative conflict management and competitive conflict management. The procedure laid out by Aiken and West (1991) was followed by computing the slopes from beta coefficients derived from regression equations that adjusted the interaction term to reflect different values of moderators (low scores were defined as one standard deviation below the means, and high scores represented one standard deviation above the mean scores).
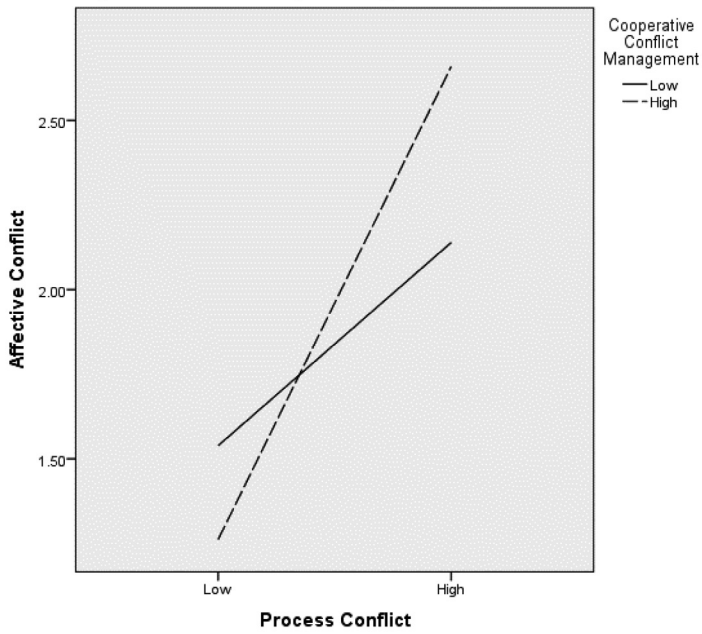
Figure 1(a): *Cooperative Conflict Management as A Moderator in the Relationship Between Cognitive Conflict and Affective Conflict*
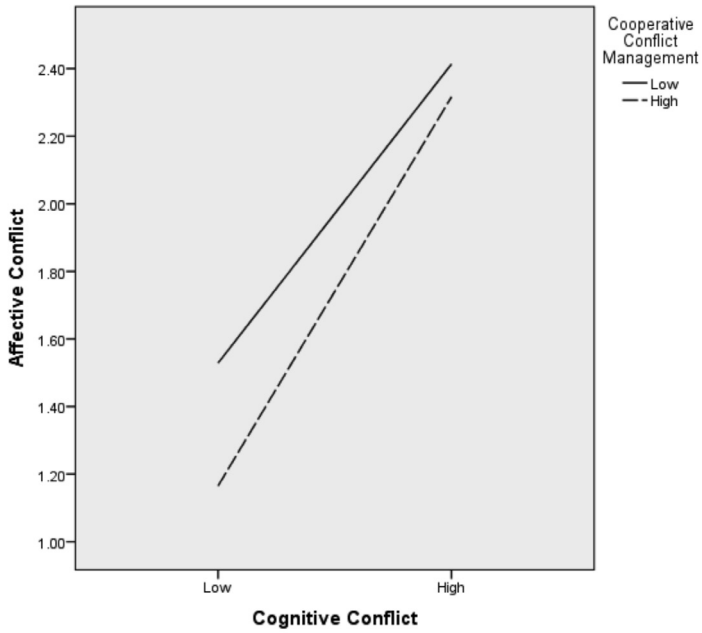

Figure 1(b): *Competitive Conflict Maagement as A Moderator in the Relationship Between Cognitive Conflict and Affective Conflict*
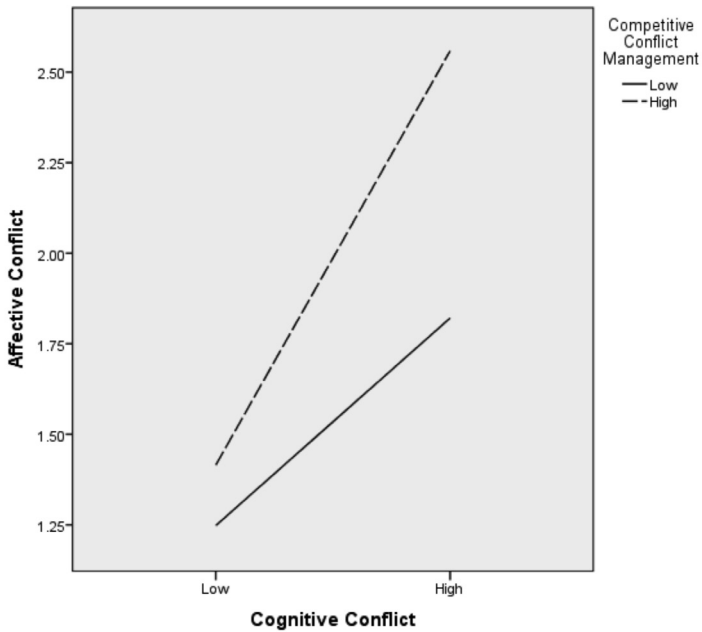
Figure 1(c): *Cooperative Conflict Management as a Moderator in the Relationship Between Process Conflict and Affective Conflict*

Figure 1(d): *Competitive Conflict Management as a Moderator in the Relationship Between Cognitive Conflict and Affective Conflict*
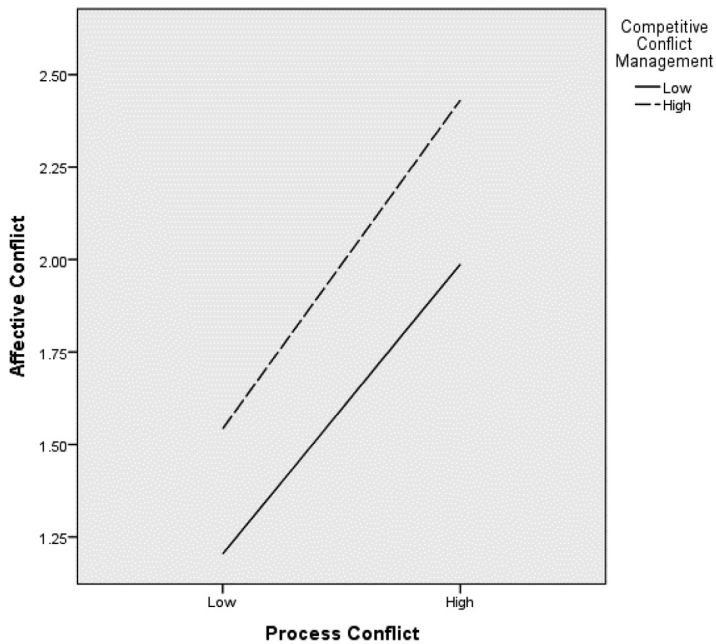
The effects of cognitive conflict (X1) on affective conflict (Y) over the range of values for cooperative conflict management (Z) were also measured. Following Aiken and West (1991), the partial derivative of affective conflict with respect to cognitive conflict as $\partial Y/\partial X_1 = .45 -.37\ Z$ was computed. The slopes significantly differed over the observed range of centered cooperative conflict management values ($-.99 \leq Z \leq .76$) as $\partial Y/\partial X_1$ is positive for values of less than 1.21 and negative for the values greater than 1.21. These results supported Hypothesis 2a.

Similarly, also examined were the effects of cognitive conflict (X_1) on affective conflict (Y) over the range of values for competitive conflict management (Z). The study computed the partial derivative of affective conflict with respect to cognitive conflict as $\partial Y/\partial X_1 = .45 -.36\ Z$. The slopes significantly differed over the observed range of centered competitive conflict management values ($-1.36 \leq Z \leq 1.81$) as $\partial Y/\partial X_1$ is positive for values of less than 1.25 and negative for the values greater than 1.25. These results supported Hypothesis 2b.

The moderating effect of cooperative conflict management (Z) on the relationship between process conflict (X) and affective conflict (Y) was examined. The partial derivative of affective conflict with respect to cooperative conflict management was $\partial Y/\partial X_1 = .41 -.25\ Z$. The slopes significantly differed over the observed range of centered cooperative conflict management values as $\partial Y/\partial X_1$ is positive for values of less than 1.64 and negative for the values greater than 1.64. These results supported Hypothesis 3a.

Finally, the study also examined the effects of process (X_1) on affective conflict (Y) over the range of values for competitive conflict management (Z). The partial derivative of affective conflict with respect to process conflict was $\partial Y/\partial X_1 = .41 -.21\ Z$. The slopes significantly differed over the observed range of centered process conflict values as $\partial Y/\partial X1$ is positive for values of less than 1.95 and negative for the values greater than 1.95. These results supported Hypothesis 3b.

The interaction plots suggested that the type of conflict management strategy acted as a moderator in the relationship between cognitive conflict and affective conflict and between process conflict and affective conflict. Figure 1(a) portrayed that at lower levels of cooperative conflict management strategy cognitive conflict leads to higher levels of affective conflict than at the higher levels of cooperative conflict management strategy. The interaction plot on Figure 1(b) suggested the reverse, such that at lower levels of competitive conflict management strategy, cognitive conflict lead to lower levels of affective conflict. When competitive conflict management strategy is 'high', cognitive conflict is associated with higher levels of affective conflict.

The interaction graph on Figure 1(c) showed a different result. At 'high' levels of a cooperative conflict management strategy, lower levels of process conflict lead to lower levels of affective conflict. In contrast, when the cooperative management style was 'high', high process conflict lead to high affective conflict. That means cooperative conflict management strategy can be particularly beneficial as long as process conflict is low. It is surprising that at higher levels of process conflict, lower levels of a cooperative conflict management strategy lead to lower levels of affective conflict than at high cooperative conflict management strategy levels. This phenomenon is difficult to explain. Finally, the interaction graph in Figure 1(d) revealed that when competitive conflict management strategy is 'low', process conflict is associated with lower levels of affective conflict than at higher levels of a competitive conflict management strategy. This

can be expected because competitive conflict management strategy adds to the process conflict in influencing the affective conflict. These results supported the interaction hypotheses. The summary of empirical results is presented in Figure 2 below.

Figure 2: *Empirical Model*
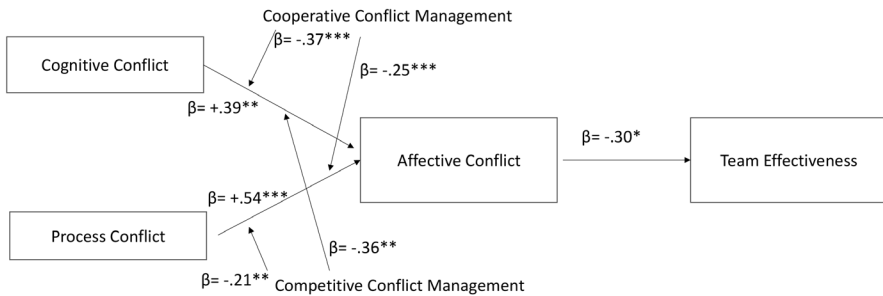
The summary of all hypotheses is captured in Table 3.

Table 3: *Summary of Hypotheses*

H1	There will be a negative relationship between affective conflict and team effectiveness.	**Supported**
H2	There will be a positive relationship between cognitive conflict and affective conflict. .	**Supported**
H3	There will be a positive relationship between process conflict and affective conflict.	**Supported**
H2a	Cooperative conflict management style moderates the relationship between cognitive conflict and affective conflict such that the relationship is more negative at higher levels of cooperative conflict management than at lower levels.	**Supported**
H2b	Competitive conflict management style moderates the relationship between cognitive conflict and affective conflict such that the relationship is more positive at higher levels of competitive conflict management style than at higher levels.	**Supported**
H3a	Cooperative conflict management style moderates the relationship between process conflict and affective conflict such that the relationship is more positive at lower levels of cooperative conflict management than at higher levels.	**Supported**
H3b	Competitive conflict management style moderates the relationship between process conflict and affective conflict such that the relationship is more positive at higher levels of competitive conflict management style than at lower levels.	**Supported**

Discussion

The role of conflict management approaches in the inter-relationship between cognitive, affective, and process conflicts was examined in this research. Furthermore, the results also corroborated previous research that found there is a negative relationship between affective conflict and team effectiveness. Existing research has pointed out that managing conflict is very important in strengthening relationships and providing a positive working environment among teams in order to resolve strategic issues and solve problems (Jehn, 1997; Tjosvold, Poon, & Yu, 2005). One of the preconditions for the positive effect of conflict was management of these conflicts constructively (Lovelace et al., 2001). The results also supported the finding that discussion arising from content gradually results in person-based or affective conflict. One notable contribution of the present study was the finding of a positive effect of process conflict on affective conflict. Team members, when engaged in discussion about how to allocate resources in view of limited or scarce resources, can often confront each other aggressively, which then can result in affective conflict. It is not uncommon for functional managers to argue about the allocation of resources to their respective functional areas and therefore make a CEO's ability to resolve the conflicts difficult. The present research also dwells on how conflicts are managed (either through a cooperative conflict management approach or a competitive conflict management approach) and how the management approach influences the effects of cognitive conflict and process conflict on affective conflict.

When members encourage a 'we are in this together' attitude in resolving conflict, the positive effect of cognitive conflict on affect conflict will be reduced and vice versa. In this case, team members treat conflict as a mutual problem to solve. On the other hand, when team members demand that others agree to their position, the positive effect of cognitive conflict on affective conflict will be intensified. Similarly, when members work on the process of implementing decisions and decide about the optimal allocation of resources that are beneficial to all members and to the organization, the positive effect of process conflict on affective conflict will be reduced. In contrast, when one of the team members, for example the Vice President of Marketing, demands greater allocation of resources relative to other functional managers and insists that other members agree with this position, process conflict is aggravated by the competitive conflict management approach, resulting in a higher level of affective conflict. This study thus supported the moderating hypotheses that cooperative and competitive conflict management approaches have their respective effects on affective conflict.

Implications for Conflict Theory and Strategic Decision Making Research
The present study had implications for both strategic decision making research and conflict theory. Earlier researchers focused on cognitive conflict and affective conflict and their effects on decision outcomes (Amason, 1996; De Dreu & Weingart, 2003; Dooley & Fryxell, 1999; Jehn, Northcraft, & Neale, 1999). The previous researchers also focused on trust as a moderator in the relationship between the group process variables and decision outcomes (Parayitam & Dooley, 2007, 2009). However, process conflict has remained an under-researched area in the strategic management literature (Tjosvold et

al., 2006). This study focused on the moderating effect of types of conflict management strategies in the relationship between cognitive conflict and affective conflict and process conflict and affective conflict.

Limitations and Future Research

The study did contain limitations. Since the research was based on surveys, the limitations of surveys are inherent. For example, common method bias and social desirability bias need to be addressed. The study argued, however, that the respondents were unable to guess the hypotheses and thus responded in a socially desirable manner; hence, common method variance was not considered a major problem in this study (Podsakoff et al., 2003). As it is becoming increasingly difficult to get data from top management teams of companies, the present research focused on teams that have participated in a simulated strategy game in a strategy capstone course. It is believed that as long as the members accurately characterize their teams, data from the student population should not be a major limitation. Another limitation was social desirability bias. To address this, the respondents were informed about the survey's confidentiality and anonymity (Konrad & Linnehan, 1995). Another potential problem was the generalizability of the findings. However, to the extent to which the decision-making process in this study was similar to organizations across various industries, the results can be generalizable.

Despite these limitations, the present study offered several avenues for future research in the conflict and strategic decision making literature. First, researchers need to study the power dynamics among the team members and the influence of CEO power on trust, conflict, and agreement-seeking in influencing the decision outcomes. Since the research presented in this paper focused on strategic decisions, it would be useful to study group behavior when teams engaged in routine and simple tasks where members do not have a considerable stake in the outcome of the decisions, and see the interrelationships between the group process variables and decision outcomes. Increasing understanding of the role of process conflict in the relationship between various group process variables and organizational outcomes, together with the types of conflict management styles could have very significant implications for management.

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