A LONGITUDINAL ANALYSIS OF THE EFFECTS OF TASK-RELATED DIVERSITY IN GROUPS

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Abstract

Existing research on diversity predominantly focuses on diversity in physical, demographic characteristics, although benefits commonly associated with diversity occur as a result of differences in task-related attributes. For task-related diversity to lead to the purported advantage of applying a diverse set of knowledge and perspectives on a task, two conditions must be met. First, team members must be aware of their differences creating diversity. Second, members must be able to manage their differences. This paper attempted to answer three questions. 1. Do members' perceptions of task-related diversity change over time? 2. How do the interplay between diversity and conflict change over time? 3. Do group norms reduce the negative effects and enhance the positive effects of task-related diversity on conflict? It was proposed that members' perceptions of diversity would change over time intensifying intra-group conflict experienced within the team. Diversity related group norms were proposed to moderate the relationship between diversity perceptions and intra-group conflict. A longitudinal survey study of 186 individuals from 57 teams showed that, contrary to what was hypothesized, perceptions of task-related diversity decreased over time. The results also indicate that diversity-conflict relationship intensified until about the mid-point of the groups' existence and then declined and that group norms moderated the relationship between diversity and conflict.

Keywords: Groups, task-related diversity, conflict, group norms

Öz

Takımlarda Görev-İlintili Çeşitliliğin Etkilerinin Boylamsal Analizi

Mevcut çeşitlilik yazını ağırlıklı olarak fiziksel, demografik niteliklerin çeşitliliği üzerinde durmuş, görev-ilintili çeşitliliği göz ardı etmiştir. Oysa, çeşitliliğe atfedilen yararlar çoğunlukla görev-ilintili niteliklerde çeşitlilikten kaynaklanmaktadır. Ancak görev-ilintili çeşitlilik de her zaman kendisinden beklenen faydaları sağlamıyabilir. Görev-ilintili çeşitliliğin farklı bilgi ve bakış

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açılarının göreve uygulanması sonucunu.doğurabilmesi için iki koşulun sağlanması gerekmektedir. Öncelikle, takım üyeleri çeşitlilik yaratan farklılıklarının bilincinde olmalıdırlar. İkinci olarak, takım üyeleri farklılıklarını yönetebilmelidirler. Bu çalışmanın amacı 3 soruya yanıt aramaktır. 1. Takım üyelerinin görev ilintili çeşitlilik algıları zaman içinde değişir mi? 2. Çeşitlilik ve çatışma arasındaki ilişki zaman içinde nasıl değişir? 3. Takım kuralları görev ilintili çeşitliliğin olumsuz etkilerini azaltıp, olumlu etkilerini güçlendirir mi? Bu çalışmada, takım üyelerinin çeşitlilik algılarının zaman içinde değişeceği ve bunun sonucunda takımiçi çatışmanın artacağı önerilmektedir. Çeşitlilik ile ilgili takım kurallarının ise çeşitlilik-çatışma ilişkisi üzerinde değiştirici etkileri olacağı savunulmaktadır. 57 takımdan 186 kişinin katıldığı boylamsal anket çalışması sonucunda, öne sürülen hipotezlerin aksine, görev-ilintili çeşitlilik algılarının zaman içinde azaldığı saptanmıştır. Sonuçlar, ayrıca, çeşitlilik-çatışma ilişkisinin takımların ömürlerinin ortasına kadar güçlendiğini ama ondan sonra azaldığını ve takım kurallarının çeşitlilik-çatışma ilişkisini değiştirdiğini göstermektedir.

Anahtar Sözcükler: Takımlar, görev-ilintili çeşitlilik, çatışma, takım kuralları.

INTRODUCTION

Increased competitive pressures have caused organizations to expand their use of team-based structures (Campion, Medsker, and Higgs, 1993; Campion, Paper and Medsker, 1996; Cohen, and Bailey, 1997; Devine, Clayton, Philips, Dunford, and Melner, 1999; Guzzo and Dickson, 1996; Sundstrom, De Meuse and Futrell, 1990). One commonly proposed advantage of using groups is they bring together a diverse set of perspectives, information, and skills to apply on a task (Jackson, 1992). This benefit is especially expected when groups are composed of diverse members. However, research on group diversity has yielded inconsistent results (Jackson, Joshi, and Erhardt, 2003; Milliken, and Martins, 1996; Williams and O'Reilly, 1998) and group diversity has been labeled as a "double-edged sword" (Milliken and Martins, 1996, 403)

One reason for inconclusive findings might be that teams can be diverse along multiple attributes such as gender, attitudes, and expertise and each of the different varieties of diversity may lead to different outcomes (Jehn, Northcraft, and Neale, 1999). Past research distinguished between two kinds of diversity attributes-relational and task-related attributes (Jackson, 1992; Pelled, 1996; Simons, Pelled and Smith, 1999; Webber and Donahue, 2001). Diversity in relational attributes refers to differences among group members in terms of attributes that are unrelated to the task such as gender, race, and age. Task-related diversity refers to differences among team members with respect to

characteristics such as educational background, experience pertinent to the group's task, and task-related attitudes and values.

Teams that are diverse with respect to values, educational backgrounds, expertise, and other task-related attributes are more likely to contain the requisite variety of knowledge and perspectives. Relational diversity, however, will not necessarily lead to diversity in perspectives and knowledge as long as it is not associated with such differences as values, education background, and experience (Harrison, Price and Bell, 1998; Lawrence, 1997; Jehn et al., 1999). Hence, the favorable outcomes associated with teamwork usually arise from the presence of task-related diversity. Although significant advancements have been made in identifying different types of diversity and untangling their effects, a recent review (Jackson et al., 2003) indicates that diversity literature predominantly focuses on diversity in physical demographic characteristics, ignoring diversity in task-related characteristics such as values, attitudes, and cognitions (for an exception see Webber and Donahue, 2001).

Presence of task-related diversity on a team, however, does not guarantee performance. For task-related diversity to lead to favorable outcomes, group members should be able to capitalize on their differences. Leveraging diversity requires that members are aware of their differences in task-related attributes. Past research indicates that group members may not be aware of all attributes of their teammates and that members' perceptions of each other may change over time. Hence, to understand the effects of task-related diversity, members' dynamic perceptions of individual differences should be examined.

Capitalizing on task-related diversity, also, requires that group members successfully manage their differences. Previous research focused on "unmanaged diversity" (Nkomo and Cox, 1996). Perceptions of diversity occur within the context of the team and aspects of the team context can enable groups to reap the benefits of their diversity. One such aspect of the group context is diversity related group norms (Chatman and Flynn, 2001; Jehn, 1997; Williams and O'Reilly, 1998). Thus, elements of a group's context, such as group norms, may influence how perceived diversity will impact group outcomes. Group norms may help explain when perceived diversity may lead to favorable outcomes and when it may lead to negative consequences. Variables that affect the direction and/or strength of the relation between an independent variable (i.e., perceived diversity) and a dependent variable (i.e. group outcome such as conflict) should be incorporated as moderators (Baron and Kenny, 1986). The above discussion, then, suggests including group norms as moderators in the perceived diversity-outcome relationship.

This paper attempts to extend the literature on group diversity by examining members' dynamic perceptions of the less frequently examined task-related diversity in groups. To this end, the present study develops and tests a dynamic model of perceived task-related diversity, conflict, and group norms. This paper aims to answer three questions. 1. Do members' perceptions of task-related diversity change over time? 2. How do the interplay between diversity and conflict change over time? 3. Do group norms reduce the negative effects and enhance the positive effects of task-related diversity on conflict?

1. THEORETICAL BACKGROUND

Task-related diversity refers to a team's heterogeneity with respect to individual attributes that pertain to the group's task such as educational background, knowledge, skills, and abilities, as well as task-related values and attitudes. There are 2 kinds of task-related diversity-informational and value diversity (Jehn et al, 1997, 1999). Informational diversity refers to differences in knowledge bases and perspectives. Value diversity refers to differences in psychological attributes that are more construal such as values and attitudes.

Team diversity should be defined in terms of members' perceptions of differences. People react on the bases of perceptions of reality, rather than reality per se (Ferris and Judge, 1991). For instance, Strauss, Barrick, and Connerley (2001) investigated the effects of actual personality similarity and perceived personality similarity on performance ratings and found perceived personality similarity, not actual personality similarity, was related significantly to performance ratings. Turban and Jones (1988) demonstrated that perceptions of, rather than actual, attitude similarity between supervisors and subordinates were uniquely related to subordinate satisfaction, performance ratings, and pay ratings. Harrison, Price, Gavin, and Florey (2002), examined "the flow of diversity's effects from actual member differences through perceived differences" (p. 1029) and found perceived diversity mediated the effects of objective diversity on social integration. These studies indicate that it is not the mere presence of a specific type of diversity within a team, but rather whether this type of diversity is perceived by team members that explains the effects of diversity on process and outcome variables.

Current research on diversity, however, emphasizes "objective" diversity ignoring "perceived" diversity (for exceptions see Harrison, Price, Gavin, and Florey, 2002; Randel, 2002). When members' perceptions of task-related differences are ignored, it is not possible to know whether group members are aware of the differences that are being studied by the researchers at the time of measurement. Members may not be aware of their differences in attributes of

interest to researchers and diversity in these attributes may not be affecting group processes. Thus, diversity calculated in terms of objective measures may not be identical to what is perceived by group members and members' perceptions of diversity may be more relevant in explaining group processes and outcomes.

Perceptions of task-related diversity are dynamic. Team members' perceptions of each other may change over time. At a given time not all individual attributes are perceived by team members. However, previous research typically ignored temporal dynamics of task-related diversity. When time was incorporated in models of diversity, it was included as a moderator. For example, Harrison and colleagues (2002, 1998) found that in high-tenured groups, members' attention shifted from demographic differences to differences in more subtle, less detectable attributes such as values and attitudes. In sum, past studies mostly concentrated on the shift from demographic differences to differences in values and attitudes and changes in perceptions of task-related diversity was not truly examined.

Teams are formed to undertake a task and their members are selected to the team because of their expertise and knowledge regarding the task at hand. Team members are required to pay attention to informational diversity starting from the early phases and some informational attributes such as functional background and tenure can be easily and quickly identified. Others, such as unique information, perspectives, and expertise may be more time consuming to detect. In effect, past research indicates that teams may experience problems at identifying and integrating the unique insights of their members. Several studies by Stasser and colleagues demonstrate that groups are ineffective at identifying and pooling the unshared information possessed by individual members (e.g. Stasser and Stewart, 1992; Stasser, Vaughan, and Stewart, 2000; Stewart and Stasser, 1998). Wittenbaum and Stasser (1996) argue that groups are especially prone to these problems early in their lives. Early in the life of a team, group members may be concerned with social acceptance and may be reluctant to share or discuss information that seems inconsistent with, or irrelevant with regard to, what others have mentioned or seem to believe (Gruenfeld et al., 1996). As a result at the early stages of a team's life, its members will not be aware of all the task-related knowledge, information, and perspectives represented on the team. Over time, as team members interact with each other, feelings of social pressure might be alleviated and the sharing of unique information might be facilitated (Gruenfeld et al., 1996). Hence, as familiarity increased team members were more willing to express exclusive perspectives/views and unique information. At the later stages of teams' lives, teams get better at identifying and pooling the unique knowledge of their members.

A common argument in diversity literature is that it takes some time for group members to realize their differences in more subtle attributes such as values and attitudes and value diversity has its effects on group processes later in teams' lives. Harrison and colleagues (2002) suggest this delayed awareness and lagged effect of value diversity arise from the need for extended and individualized interaction among group members to uncover one another's such underlying, deep-level attributes. Hence, early in team's life, perceptions of value diversity will be low because members lack prior knowledge about each other. However, as group members continue to interact with one another they will learn more about each other's values and attitudes and therefore perceptions of value diversity will be higher in the later phases of a team's development.

Drawing upon the above discussion, the following hypothesis is proposed:

Hypothesis 1: Team members' perceptions of task-related diversity will increase as a team develops.

1.1. Team Diversity-Conflict Relationship

Past research identifies intra-group conflict as a potential outcome of group diversity (e.g. Jehn et. al, 1997; Jehn et al, 1999; Pelled et al, 1999). Two types of conflict are commonly identified in groups-task and relationship conflict. Task conflict refers to disagreements among group members regarding the content of the task, including priorities, objectives, decision areas, and appropriate courses of action. Relationship conflict refers to disagreements due to interpersonal incompatibilities and disliking. Extant research indicates that different forms of diversity are associated with different dimensions of conflict (Jehn et. al, 1997; Jehn et al, 1999; Pelled et al, 1999).

Past studies make an invaluable contribution to the literature on diversity-conflict relationship. Nonetheless, they measure diversity in an objective and static manner. Therefore, it is not possible to know whether the kinds of diversity examined were noticed or even known by members of the teams and whether it was really the kinds of diversity examined that caused the results observed. The present research proposes that the major driver of group conflict is not the presence of a specific diversity type on a group but rather group members' perceptions of differences. Also, because extant studies were cross-sectional, it is not possible to know when the identified relationships will hold during the lifetime of a team. This study addresses how the interplay between perceived diversity and conflict changes across time.

Past research linked informational diversity to task conflict (e.g. Jehn et al., 1997, 1999; Pelled et al., 1999). Differences in education, functional background and experience are assumed to reflect differences in perspectives, knowledge, and skills and abilities, which in turn, lead to disagreements about task issues, hence task conflict. Early in a team's life, members are likely to be aware of each other's easily detectable task-related attributes such as educational and functional background and tenure. Members' unique information, knowledge, and opinions may remain unshared and unknown at this time. As a result, at this phase task conflict arising from perceptions of informational diversity will be somewhat limited.

As the group matures, members become more familiar with each other and more willing to share idiosyncratic perspectives that were previously undisclosed. As members share unique knowledge and opinions, perceptions of informational diversity will increase and the debate on task issues, hence task conflict will intensify. Gruenfeld et al. (1996) cite Arrow and McGrath (1993) who found groups with stable membership experienced more conflict more frequently compared to groups whose membership changed and was instable and ShahandJehn (1993) who found groups of friends exhibited greater emotional and task conflict than groups of strangers. Similarly, Grunfeld et al (1996) found that teams consisting of familiar members experienced more conflict. Thus, throughout a group's development, increasing perceptions of informational diversity strengthen task conflict experienced by group members and the following hypothesis is proposed:

Hypothesis 2a: As a group develops, the positive association between perceptions of informational diversity and task conflict will increase.

In mature groups, members have in-depth knowledge about each other in terms of not only knowledge and perspectives but also other more subtle psychological attributes such as values and attitudes. Past research linked value diversity to both relationship and task conflict. When group members perceive differences in attitudes and values, they may experience negative affects such as dislike and annoyance and such negative emotions were found to be associated with relationship conflict (Jehn, 1997). Perceptions of differences in terms of attributes such as values and attitudes lead to relationship conflict during the later phases of group development. Differences in values and attitudes can also trigger task conflict. Members' values and attitudes determine what they perceive the group task to be, the courses of action they think are appropriate, and how they prioritize the various objectives (Jehn et al., 1997). Differences in priorities, perceptions, and desired courses of action are associated with task conflict. Jehn and Mannix (2001) provide support for the above arguments. Their previously mentioned study found that group value consensus was

negatively related to relationship and task conflict in the middle and late time blocks. There was no significant relationship between group value consensus and relationship conflict in the early phase. Therefore, the following hypotheses are proposed:

Hypothesis 2b: As a group develops, the positive association between perceptions of value diversity and relationship conflict will increase.

Hypothesis 2c: As a group develops, the positive association between perceptions of value diversity and task conflict will increase.

1.2. Effects of Group Norms

Contemporary research on diversity proposed processes that may underlie the effects of diversity, such as conflict and social integration. However, few studies to date delineate how these processes can be managed. Research on diversity generally concentrates on "unmanaged diversity" (Nkomo and Cox, 1996) and little is known to help managers reap the benefits of diversity and avoid its limitations. Williams and O'Reilly (1998) indicate that to benefit from diversity groups should, first, resolve their differences. Van Knippenberg, De Dreu, and Homan (2004) suggest that it is not the presence or absence of conflict but instead the way conflicts are managed that determines group performance. Finally, Simons (1995) found that diversity is beneficial only when teams are able to manage conflict.

This study identifies group norms as an important contextual factor and aims to extend the literature on team diversity by examining not only how perceptions of diversity change over time but also how the interplay between perceived diversity and conflict changes as a result of group norms. According to Bettenhausen and Murnighan (1985), norms are regular behavior patterns that are relatively stable within a particular group. Norms determine the appropriateness of behavior and influence how a group's members perceive and interact with one another, approach decisions and solve problems (Chatman and Flynn, 2001). Norms are enforced and they have a powerful influence on members (Feldman, 1984). Norms develop early in the lives of groups even before members' form an understanding of the group's task (Bettenhausen and Murnighan, 1985). Bettenhausen and Murnighan, (1985) concluded that norm formation is "subtle but swift".

Several studies suggest that norms are crucial to understanding diversity-outcome relationship (Chatman and Flynn, 2001). For instance, Chatman and associates (1998) showed that cooperative culture that highlights members' shared fate determined whether group heterogeneity influenced work

effectiveness. In their study of 20 British string quartets, Murnighan and Conlon (1991) found that quartets that allowed conflict to continue without being disruptive were more successful. Such groups were able to resolve their differences in a constructive way avoiding unnecessary disruptions interfering group's work.

Groups establish norms with respect to behaviors that ensure group survival, facilitate task accomplishment, contribute to group morale, or express the group's central values (Feldman, 1984). Perceptions of task-related diversity can be important for group performance because, if members of a team can apply a diverse set of perspectives, knowledge, and skills on the team's task, the result will be higher quality outcomes (Jackson, 1992). In addition, perceptions of value diversity can lead to interpersonal problems within the team through interpersonal dislike. Hence, teams are likely to have norms about task-related diversity.

Groups may establish norms that influence the extent to which members' idiosyncratic knowledge and perspectives are reflected on the group task. Research on teams in general assumes that a major advantage of using teams is the resultant diversity of perspectives and knowledge. However, integration of diverse perspectives may not occur naturally. For instance, Stasser and Stewart (1992) indicated that individuals were reluctant to share their unique information and that teams might have difficulty in identifying and combining their members' idiosyncratic knowledge. Presence of norms that encourage all members to contribute their ideas, that ensure everyone gets a chance to express their views, and that promote integrating and synthesizing different perspectives of members may enable teams to identify and integrate their members' diverse views and knowledge. Such norms can be called integration norms. Hence, the presence of integration norms may strengthen the relationship between informational diversity and task conflict and the relationship between value diversity and task conflict.

Hypothesis 3a: Higher levels of integration norms will enhance the positive relationship between informational diversity and task conflict.

Hypothesis 3b: Higher levels of integration norms will enhance the positive relationship between value diversity and task conflict.

Groups may, also, establish norms that influence the interpersonal relationships within the team. Teams may develop norms that prevent the development of apathy due to interpersonal differences. Norms that promote understanding of different values and preferences, that foster mutual acceptance and respect among group members, that encourage a constructive approach to

reconciling differences, that promote tolerance for differences may enable team members to develop harmonious interpersonal relationships. Such norms can be called "interpersonal harmony" norms. In effect, Hoffman and associates (1962) found members' tolerance for others' views moderated the link between heterogeneity and creativity. Thus, presence of interpersonal harmony norms helps a team experience lower levels of relationship conflict due to value diversity. Interpersonal harmony norms may weaken the positive association between value diversity and relationship conflict.

Hypothesis 3c: Higher levels of harmony norms will weaken the positive relationship between value diversity and relationship conflict.

2. METHODS

2.1. Sample

The participants of this study were approximately 348 graduating seniors enrolled in the Strategic Management class of the college of business administration of a large southwestern university in the U.S.A.. To fulfill the requirements of this class, independent of the present study, students were randomly assigned to project teams. A total of 85 such teams were formed.

This study was conducted at three administrations. A total of 332 students from 85 teams responded to the first administration. A total of 324 students from 85 teams responded to the second administration. Finally, a total of 321 students from 83 teams responded to the third administration. The response rates were 95%, 93%, and 92% for the first, second, and third administrations, respectively. However, the number of respondents and teams included in the study decreased as a result of removing careless respondents, those who left entire parts of the questionnaire blank and removing teams whose members did not respond to all three administrations. The result was a sample of 186 individuals from 57 teams. The team size varied between three and four. All the students remained in the same group throughout the semester.

2.2. Procedure

Data was gathered on three group tasks over a 14-week semester. The number of weeks into the semester for each task was as follows: task 1, five; task 2, eight; and task 3, eleven. All groups received the same set of written instructions. All members of a group received the same grade for each task. The grades on the three assignments constituted about 35% of the course grade, making the tasks critical for success in the course.

Surveys were administered to all group members immediately after the completion of each of the three group assignments before the groups received any feedback on their performance. These surveys inquired about perceptions of diversity, the level of intra-group conflict, group norms, and some demographic information (first administration only).

All the students were assured that their responses to the surveys would be completely confidential and that these responses would not have any effect on the grades they would receive on their group assignments. Group members were asked to respond to the items in each survey from the perspective of their observations in their groups for the period during which they had performed the task (Watson, Kumar, and Michaelsen, 1993). Responses given by each group member were averaged to produce the relevant measures for each group. To ensure anonymity, students were asked not to write their names on the surveys. Instead a unique identification number was developed for each participant.

Questionnaires were distributed during class time and students were allowed to complete them in class. Sealable envelopes addressed to the researcher were provided to the participants. Questionnaires were collected in closed envelops by the teaching assistants or the course instructor who sent them to the researcher. In each administration questionnaires were distributed to all students. Finally, the course instructor gave extra-credit to participants per each survey filled.

2.3. Measures

A survey was developed to measure all the variables. To operationalize perceived diversity, a scale developed by Harrison and his colleagues (1998), that asked group members to reveal how different they perceived their teammates to be was used. Participants were asked to rate their teams in terms of how similar they thought their team was with respect to such dimensions of diversity as, importance placed on team goals, preference for teamwork, attitudes toward school, work experience, major, task-related knowledge, and skills and abilities. A 5-point rating scale anchored by 1 = "Very similar" and 5= "Very different" was used. A sample item is "How similar, do you think, are members of your team with respect to importance placed on team goals?" Then, responses to relevant dimensions were averaged to form composite measures of each type of diversity. Perceived value diversity was calculated by averaging the responses to items on importance placed on team goals, preference for teamwork, and attitudes toward school. Perceived informational diversity was calculated by averaging the responses to items on knowledge, major, experience, and skills and abilities.

To capture the dynamic nature of diversity, group members were asked to evaluate their team's diversity throughout the semester. Each questionnaire contained all the dimensions of perceived informational diversity (e.g. major and experience) and perceived value diversity (e.g. preference for teamwork and attitudes toward school) as described above. However, in each questionnaire participants were asked to give their perceptions based on their observations for the period during which they completed each one of the tasks.

To operationalize relationship conflict and task conflict, the Intragroup Conflict Scale developed by Jehn (1995) was used. A sample item from this scale is "How much conflict of ideas is there in your work group?" A 5-point scale anchored by 1 = "None" and 5 = "A lot" was used.

A scale assessing diversity-related norms has not been developed prior to the present research. However, Chatman, Polzer, Barsade, and Neale, (1998), Nkomo and Cox (1996), Thatcher and Jehn (1998), and Williams and O'Reilly (1998) provided ideas of some relevant items. To develop a scale measuring diversity-related norms, literature on group diversity was reviewed. A sample item from this scale is "My team discourages prejudiced comments." A 5-point scale anchored by 1 = "Strongly Disagree" and 5 = "Strongly Agree" was used.

3. RESULTS

3.1. Measurement

The items for each construct were examined by means of exploratory factor analysis to insure that the construct could be measured by summing the items. Some items were dropped in order to accommodate this requirement. The results of this analysis along with a measure of reliability are presented in Tables 1 – 3. All constructs demonstrated adequate reliability although the alpha for task conflict was at the lower bound of acceptability (Nunnally, 1967). Measures of each construct were formed by averaging the respective item scores.

3.2. Analysis

A variety of techniques were used to test the hypotheses. For hypotheses H1, analyses of variance were used to examine the level of value diversity and informational diversity across the three time periods of the study. The results are presented in Table 4 and Table 5, respectively. Although the mean differences achieve significance for each construct, it is clear that the

significance derives from time period 2 and time period 3. Moreover, the direction of change is in the opposite direction of that hypothesized.

Hypotheses 2a, 2b and 2c, dealing with the impact of types of diversity on types of group conflict, were tested by examining a regression of conflict on diversity for each time period. The resulting explained variance is reported in Table 6. Hypothesis 2a proposes that as a group develops, the positive association between perceptions of informational diversity and task conflict will increase. In partial support of Hypothesis 2a, results indicate that informational diversity is positively related to task conflict in time1 (t = 0.04, p<0.05; see Table6) and in time 2 (t = 0.08, p<0.05; see Table6). However, informational diversity is not significantly related to task conflict in time 3.

Hypothesis 2b states that as a group develops, the positive association between perceptions of value diversity and relationship conflict will increase. Results indicate that value diversity is positively related to relationship conflict in all three time periods (time1: t = 0.02, time2: t=0.27, time3: t=.08, p<0.05; see Table6). However, the impact of value diversity on relationship conflict grows from time 1 to time 2, but declines from time 2 to time 3. Thus, Hypothesis 2b is partially supported.

Finally, Hypothesis 2c predicts that as a group develops, the positive association between perceptions of value diversity and task conflict will increase. Results indicate that value diversity is positively related to task conflict in all three time periods (time1: t = 0.06, time2: t=0.19, time3: t=.04, p<0.05; see Table6). However, the impact of value diversity on task conflict grows from time 1 to time 2, but declines from time 2 to time 3. Thus, Hypothesis 2c is also partially supported. In sum, the relationship between diversity and conflict is positive. However, hypotheses 2a-2c appear to be partially supported in that the impact of diversity on conflict grows from time 1 to time 2, but declines from time 2 to time 3.

The final hypotheses, those dealing with the moderating effect of norms, were examined by splitting the sample into high and low groups (median split) based on the value of the norms. The relationship between conflict and diversity was then examined within each group, this time utilizing simple correlation between the constructs. For purposes of this analysis, data was pooled across time periods. The results are reported in Table 7.

Hypotheses 3a and 3b predict that higher levels higher levels of integration norms will enhance the positive relationship between informational and value diversity and task conflict. In support of Hypotheses 3a and 3b, results indicate that integration norms moderated the effect of the two types of

diversity (informational and value) on task conflict. Thus, informational diversity and value diversity are more likely to lead to task conflict when integration norms are high than when such norms are low.

Hypothesis 3c proposes that stronger harmony norms would weaken the effect of value diversity on relationship conflict and this was, indeed, the case. Results show that harmony norms moderate the effect of value diversity on relationship conflict; value diversity is less likely to lead to relationship conflict when harmony norms are high than when such norms are low.

3. DISCUSSION

This paper had three objectives: to examine whether perceptions of task-related diversity changed as teams develop; to analyze the dynamic interplay between different types of task-related diversity and different types of group conflict; and to investigate whether norms reduce the negative effects and enhance the positive effects of task-related diversity on conflict. Predictions of the present study received mixed support, although it was able to demonstrate that perceptions of task-related diversity do change over time and that the interplay between diversity and conflict is dynamic.

Hypotheses 1 proposed that perceptions of task-related diversity will be increase as teams develop. It was expected that as members interacted both value and informational diversity would increase. The results indicate that, for the present study's sample, perceptions of value and informational diversity decreased, rather than increased, over the lives of the teams. Hence hypothesis 1 was not supported. This finding is inconsistent with existing research which indicates that deciphering others' values and idiosyncratic opinions require an extended period of interaction (e.g. Gruenfeld et al., 1996; Harrison et al., 2001, 1998). One reason for this unexpected finding could be that the students who make up the teams in this study already know each other and familiar with each other's values and perspectives. Although students were randomly put to teams by authors of this study, familiarity was not controlled.

This study demonstrated that that task-related diversity and conflict were positively related (Hypotheses 2a-2c). The results indicate that the positive association between members' perceptions of task-related diversity and the two kinds of conflict first increased, as predicted, reaching to the highest level at the midpoint of groups' lives but then, contrary to expectations, decreased. Hence, the positive association between diversity and conflict was highest at the midpoint. This finding seems to be in line with Gersick's (1988, 1989) argument that midpoint is a turning point for groups. At the midpoint groups

engage in debates and experience increased conflict, as a result of which they develop new ways of tackling their tasks. After this period, groups focus on implementing the decisions made at the midpoint.

Finally, the present study shows that diversity can be managed so as to reap its benefits (i.e. task conflict) and avoid it disadvantages (i.e. relationship conflict). Groups may develop norms that help them minimize relationship conflict as a result of differences in values and attitudes and at the same time can develop norms that capitalize on the diversity of perspectives, knowledge, and skills available.

There are a number of limitations of this study. First participants of this study were students. Although tasks involved were similar to tasks tackled by real-world teams, the consequences had much less serious outcomes. Therefore, it is not known if the findings of this study can be generalized to other settings. Future research should try to test the model proposed here using other samples. Another limitation was that the extent to which participants were already familiar with each other was not controlled in this study. Future research should incorporate member familiarity as a control variable. Finally, data for the present study came from questionnaires which make the results of this study prone to common source bias. Therefore, the conclusions drawn here should be interpreted cautiously.

CONCLUSION

Literature on groups suggests that task-related diversity is beneficial to groups. However, diversity research generally focuses on differences in visible, relational attributes. The present research attempted to longitudinally examine the neglected task-related diversity. As groups mature, it was expected that more task-related attributes are perceived by group members and as a result the relationship between diversity and conflict was expected to intensify. The results alert researchers and managers to the importance of midpoint in groups' development and also suggest that diversity and conflict relationship can be managed by developing diversity norms.

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APPENDIX

Table 1: Results of Exploratory Factor Analysis of Conflict Items (loadings)

Item	Task Conflict ($\alpha = .60$)	Relationship Conflict ($\alpha = .88$)
1. How much conflict of ideas is there in your work group?	0.85182	
2. How frequently do you have disagreements within your work group about the task of the project you are working on?	0.53317	
3. How often do people in your work group have conflicting opinions about the project you are working on?	0.83003	
4. How much relationship tension is there in your work group?	0.84326	
5. How often do people get angry while working in your groups?	0.92195	
6. How much emotional conflict is there in your work group?	0.92110	

Table 2: Results of Exploratory Factor Analysis of Perceived Diversity Items* (loadings)

Item	Value Diversity ($\alpha = .74$)	Informational Diversity ($\alpha = .67$)
How similar, did you think, members of your project team with respect to goals	0.79061	
How similar, did you think, members of your project team with respect to attitudes	0.83418	
How similar, did you think, members of your project team with respect to preferences	0.80130	
How similar, did you think, members of your project team with respect to experience		0.61284
How similar, did you think, members of your project team with respect to major		0.48641
How similar, did you think, members of your project team with respect to skills and abilities		0.85272
How similar, did you think, members of your project team with respect to task-related knowledge		0.84419

*The following items were dropped from the perceived value diversity scale:
How similar, did you think, members of your project team with respect to personality
How similar, did you think, members of your project team with respect to values

Table 3: Results of Confirmatory Factor Analysis of Diversity Norms Items

Item	Harmony Norms	Integration Norms
1. My team discourages prejudiced comments.	0.77865	
2. My team encourages team members to reconcile their Differences in a constructive manner	0.82834	
3. My team promotes tolerance for differences.	0.79114	
4. My team encourages all team members to contribute their ideas		0.84095
5. My team makes sure that quieter members get a chance to express their ideas.		0.81184
6. My team integrates the different perspectives of team members.		0.81288

Table 4: Analysis of Value Diversity Levels across Time

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	5.49	2.74	5.78	0.0033
Error	555	263.69	0.47		
Corrected Total	557	269.18			

Mean Value Diversity time 1:		2.45
Mean Value Diversity time 2:		2.44
Mean Value Diversity time 3:		2.23

Table 5: Analysis of Informational Diversity across Time

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	4.59	2.29	5.43	0.0046
Error	555	235.11	0.42		
Corrected Total	557	239.70			

Mean Informational Diversity time 1:		2.93
Mean Informational Diversity time 2:		2.94
Mean Informational Diversity time 3:		2.74

Table 6: R² from Regressing Conflict on Diversity[1]

Dependent Measure	Predictor	R^2 t1	t2	t3
Relationship Conflict	Value Diversity	.02*	.27*	.08*
Task Conflict	Value Diversity	.06*	.19*	.04*
Task Conflict	Information Diversity	.04*	.08*	.01

[1]All regression coefficients are positive
* Significant at □ < .05.

Table 7: Correlations between Conflict and Diversity within Moderator Splits[1] of Norms

Norm	Relationship	Norm Group Low	High
Harmony	Value Diversity and Relationship Conflict	.31	.12
Integration	Information Diversity and Task Conflict	.04	.16
Integration	Value Diversity and Task Conflict	.15	.23

[1]Median value