Diversity and conflict in teams: a contingency perspective

Jonas F. Puck*
Institute for International Business,
Department of Global Business and Trade,
WU Vienna University of Economics and Business,
Althanstr. 51, 1090 Vienna, Austria
Email: jonas.puck@wu.ac.at
*Corresponding author

Anne-Katrin Neyer
Department of Information Systems I,
Faculty of Law and Business Administration,
University of Erlangen-Nuremberg,
Lange Gasse 20, 90403 Nuremberg, Germany
Email: anne-katrin.neyer@wiso.uni-erlangen.de

Tobias Dennerlein
Research Institute for International Management (FIM-HSG),
University of St.Gallen,
Dufourstr. 40, 9000 St.Gallen, Switzerland
Email: tobias.dennerlein@unisg.ch

Abstract: Diverse teams are becoming widespread in the workplace. However, previous research shows that many organisations fail to successfully manage diversity. Using survey data collected from 27 teams in ten different countries, we investigate the link between team diversity and intra-team conflicts. Building on a contingency approach, we analyse moderating effects of the surrounding organisational context of teams, namely organisational supportiveness and openness. The results of our quantitative study show that the diversity-conflict relation strongly depends on a team’s context. This presents interesting alleys for future research and leads to implications for practice regarding the design of a team’s context.

Keywords: teams; diversity; conflict; contingencies; context.


Biographical notes: Jonas F. Puck is Full Professor of International Business at the WU Vienna University of Economics and Business. His research focuses on management and business in emerging markets, international human resource management and cross-cultural management. His research has been

Anne-Katrin Neyer is an Assistant Professor at the University of Erlangen-Nuremberg and a Senior Research Fellow at the Centre for Leading Innovation and Cooperation (CLIC) at the HHL-Leipzig Graduate School of Management. Prior to joining the University Erlangen-Nuremberg, she was a postdoctoral research fellow at the UK’s Advanced Institute of Management Research (AIM) at the London Business School. Her research focuses on interorganisational and intraorganisational cooperative systems, multinational and virtual teams, and innovation processes. She has published on these topics in journals such as Human Resource Management, International Studies of Management and Organization, European Management Journal and R&D Management.

Tobias Dennerlein is a PhD student at the University of St.Gallen (HSG), Switzerland. Prior to enrolling in the PhD programme at HSG he obtained his Diplom-Kaufmann degree (Masters equivalent) from Friedrich-Alexander-University Erlangen-Nürnberg (Germany). His research interests focus on leadership and diversity in teams.

1 Introduction

Nowadays, two ongoing trends set the stage for working in and for organisations: first, an increasing amount of work in organisations is done through teamwork (e.g. Jackson, 1996; Jehn et al., 1999; Gibson et al., 2003) rather than by individuals working alone (Marks et al., 2001). As Katzenbach and Smith (2003, p.15) state: “In any situation requiring the real-time combination of multiple skills, experiences and judgments, a team inevitably gets better results than a collection of individuals … “. Second, the labour market is becoming increasingly diverse (e.g. Cox et al., 1991; Gibson et al., 2003) due to the mobility of employees and global merger and acquisition transactions (van Knippenberg and Schippers, 2007).

The boost of diversity and the emphasis of teamwork make it necessary for organisations to learn how to use the ‘value-in-diversity’. However, previous studies show that many organisations fail to successfully manage diversity and therefore “find themselves at a competitive disadvantage” (Cox et al., 1991, p.827). In particular, diverging points of view and preferences of team members may result in opposing ideas or approaches to solve problems. Consequently, diverse teams may confront a considerable amount of intra-team conflict, and it is likely that their members will show different preferences towards dealing with these conflicts (e.g. Tjosvold and Wong, 2004). Even though empirical research has analysed how differences in teams’ composition influence team processes and outcomes as well as subjective well-being and attitudes of team members (van Knippenberg and Schippers, 2007), empirical understanding of the relationship between diversity and intra-team conflict has been limited thus far. This leads us to our first research question: How does diversity influence intra-team conflicts?
Although several factors may influence the relationship between diversity and intra-team conflicts, we focus on the critical – and surprisingly understudied – role of the contextual surrounding of teams in this study. Milliken and Martins (1996, p.403) emphasise, that diversity “appears to be a double-edged sword, increasing the opportunity for creativity as well as the likelihood that group members will be dissatisfied and fail to identify with the group”. We argue that one major weakness of existing diverse-team research is that it fails to provide an answer to the question under which contextual conditions which side of the sword reveals. Although there have been claims for a stronger consideration of contextual influence and its possible moderating role for team processes since many years (e.g. Gladstein, 1984; McGrath, 1984; Bettenhausen, 1991; Cohen and Bailey, 1997; Jelinek and Wilson, 2005), this is still a gap in literature (van Knippenberg and Schippers, 2007). However, teams are organisational units that are embedded in a larger system (e.g. a company), have fuzzy boundaries, and are therefore connected to their environmental context. Thus, they are not immune against effects from their surroundings, but rather they are influenced by actions that occur outside their boundaries. Consequently, we argue that the relationship between diversity and intra-team conflict is moderated by the contextual surrounding of the teams. This leads us to our second research question: How does the organisational context influence the relationship between diversity and intra-team conflicts?

Building on a contingency approach, we investigate the link between team diversity (i.e. informational and social-category diversity) and intra-team conflicts (i.e. relationship, task and process conflict), considering possible contingencies, i.e. moderating effects of the surrounding organisational context of teams. We focus on organisational openness and supportiveness as contingencies that may have crucial effects on team processes. We expect them to influence the diversity-conflict relationship because both variables are believed to strongly influence the way in which people interact and work with each other (Hofstede et al., 1990; Cox, 1994).

This quantitative study provides the foundation for two sets of contributions: First, we add to the current understanding of how different types of diversity influence intra-team conflicts. Second, this study contributes to an understanding that the relationship between diversity and conflicts is embedded in the organisational context and thus, may be influenced by contextual contingencies.

2 Theoretical framework and hypotheses

Previous research suggests that interactions among individuals with diverse perspectives and viewpoints about different tasks may lead to the creation of new insights and the emergence of knowledge (e.g. Levine and Resnick, 1993; Nonaka and Takeuchi, 1995). However, the challenge that teams face is to learn how to use their inherent diversity as a competitive advantage and not as a disadvantage, for example, as a trigger for conflicts within the team. The model derived for this study is based on a contingency approach, stating that outcomes of organisational structures (such as teams) do not remain stable under different external contingencies (e.g. Galbraith, 1973; Wong and Birnbaum-More, 1994). The contingency approach argues that a given situation influences a particular behaviour and that this relationship is moderated by structural conditions or – in other words – contingencies (Burns and Stalker, 1961; Lawrence and Lorsch, 1967). As given situations one may define tasks, team composition, or organisational aspects
(e.g. Gladstein, 1984). This study limits its focus on team composition aspects (i.e. demographic diversity). Thus, the situational factors of this model are the heterogeneity of teams with respect to informational and social category diversity. Team behaviours may be interactions among team members, such as communication and conflict. In this study, three different types of conflict (i.e. task, relationship and process) are considered. Finally, the model takes into account possible structural conditions (contingencies) defined by two contextual factors on the organisational level. Figure 1 summarises the research model for this study.

Figure 1  Research model

2.1 Team diversity and team conflicts

Although quite a lot of research has been done in the field of diversity in teams, relatively little is known about the relationship between diversity and team conflicts and how this relationship is moderated by contingencies on the organisational level. Hence, we develop a deeper understanding of this relationship in the remainder of the paper. To do so, we first draw on diversity literature and second, on conflict literature. In a third step, we build on organisational supportiveness and openness literature as potential contingencies moderating this relationship.

2.1.1 Diversity in teams

The concept of diversity has received ample attention from various disciplines, resulting in several excellent recent reviews of the demography, diversity, team process and performance/effectiveness, and conflict literature exist, which aim at giving possible explanations for the highly inconsistent findings of past team research (e.g. Thomas,
Diversity and conflict in teams

One explanation why previous diversity research yielded inconsistent findings may be found in the way in which the construct ‘diversity’ was defined and/or measured. For example, Garcia-Prieto et al. (2003, p.414) state, that eventually “this ‘diversity paradox’ can be explained by how diversity is defined”. While past research has generally focused on diversity as a single continuum, ranging from homogeneous to heterogeneous, more recent research has made distinctions between specific aspects of diversity (Ilgen et al., 2005). As the creation of a more comprehensive understanding of problems appears to depend on the existence of certain diversity aspects, this study focuses on two types of diversity discussed in past research: informational diversity and social category diversity (e.g. Jehn et al., 1999). According to Jehn et al. (1999, p.743) informational diversity “refers to differences in knowledge bases and perspectives that members bring to the group. Such differences are likely to arise as a function of differences among group members in education, experience, and expertise”. Individual characteristics, such as age, gender and ethnicity, form another type of diversity that has been labelled social category diversity (e.g. Jackson, 1992; Pelled, 1996). These obvious and “explicit social category membership characteristics provide a particularly salient basis by which individuals can categorise themselves and others” (Jehn et al., 1999, p.745). Each individual’s mind, cultural norms, and consequently, values are shaped as a result of social category membership (Hofstede, 2001). Thus, social category diversity may act as an indicator of distinct underlying values of team members.

2.1.2 Intra-team conflicts

Before the linkages between each of the above mentioned diversity types and conflict will be illuminated, a closer look at the literature on team conflict has to be done, as “there is still no consensus within the literature on a precise definition of conflict” (Thomas, 1992, p.653). As team members contribute to their team – willingly or unwillingly – through different kinds of inputs, such as social inputs and task inputs (e.g. Forsyth, 1983), conflict in teams is multidimensional and often categorised along the lines of relationship and task issues (e.g. Amason, 1996; Amason and Sapienza, 1997; Jehn, 1997; de Dreu and Weingart, 2003). Consequently, there seem to be at least two types of conflict – relationship and task conflicts. Relationship conflict – also referred to as affective or interpersonal conflict – is characterised by components such as tension, friction, dislike, annoyance, frustration and irritation among team members (Jehn and Mannix, 2001). It emphasises the negative emotions resulting from personal incompatibilities or disputes (Amason, 1996; de Dreu and van Vianen, 2001) and therefore, reflects the potential inability of team members to work well together (e.g. Simons and Peterson, 2000). In contrast, task conflict – sometimes referred to as substantive or cognitive conflict – consists of the expression of differences in viewpoints, ideas and opinions that are directly related to the team task and its accomplishment (e.g. Amason and Sapienza, 1997; Jehn and Mannix, 2001). Task conflict often includes the perception of disagreements among team members concerning the content of their decisions as the team moves towards a collective decision (e.g. Simons and Peterson, 2000). Recent studies have identified a third unique type of conflict, labelled process conflict (e.g. Shah and Jehn, 1993; Jehn, 1997; Jehn et al., 1999). Jehn (1997) defines
process conflict as “conflict about how task accomplishment should proceed in the work unit, who’s responsible for what, and how things should be delegated. Process conflict includes disagreements about assignments of duties or resources” (p.540).

2.1.3 Team diversity and its impact on team conflicts

Teams that form naturally in organisations use criteria such as similarity, proximity, or familiarity as bases for team formation (Jehn et al., 1999). This typically results in an over-selection of individuals from similar or shared social networks, which may have more redundant as opposed to diversified knowledge bases, perspectives and experiences (e.g. Granovetter, 1974). Consequently, it is likely that these teams lack diversity, reducing their potential for effective problem-solving, learning and new insights (e.g. Jackson, 1992). In order to increase informational diversity in the team, organisations try to actively form cross-functional teams or use techniques such as job-rotation. However, even if organisations intentionally manage team membership, teams often fail to take advantage of the potential benefits of informational diversity (Hackman, 1990). For instance, Ancona and Caldwell (1992) found lower team managers’ ratings of innovativeness in functionally diverse teams, than in homogeneous ones. Thus, diverse teams are often ineffective at capitalising on the potential benefits of their informational diversity.

A possible reason, why teams often prove ineffective at capitalising on informational diversity, may be the fact that “what makes a group informational diverse may also prevent the group from realising the benefits of its informational diversity” (Jehn et al., 1999, p.744). For example, it is most likely that team members with an accounting background will differ extremely in identifying and evaluating alternative solutions from members with a R&D background. Consequently, teams with functionally diverse members are likely to face higher amounts of task and process conflicts, as disagreements about resources and delegations are more likely to arise. For instance, Jehn et al. (1997) showed that for teams with a high degree of educational diversity (i.e. educational majors) it was more difficult to agree upon how to proceed, than for teams in which the educational backgrounds of members were more similar.

Also, informational diversity may trigger the emergence of relationship conflict (Jehn and Mannix, 2001). This may happen, as sometimes team members might misinterpret or misperceive statements of other team members as attacks that may lead to relationship conflict. Furthermore, Keller (2001) showed that cross-functional teams create stress, which in turn lowers cohesiveness. The presence of increased stress levels in such teams may additionally trigger the emergence of relationship conflicts. Summarising the above, the following hypothesis is derived:

Hypothesis 1: Informational diversity will increase task, process and relationship conflict in teams.

Social category diversity (e.g. Jackson, 1992; Pelled, 1996) is likely to provoke social categorisation processes based on social identity effects (e.g. Tajfel, 1982; Tajfel and Turner, 1986). According to social identity theory, social categorisation processes take place, as team members prefer to interact with members of their own social category and thus, create positive social identity, which in turn approves membership to the respective social category (Billig and Tajfel, 1973). Through these processes, social category diversity may lead to self-segregation and/or discrimination of out-group members,
Diversity and conflict in teams

Diversity and conflict in teams, which in turn hinders team interaction and potential positive team outcomes. Thus, social identity categories provide a naturally existing basis for ‘faultlines’ (Lau and Murnighan, 1998), which in turn may trigger conflicts. Immanent between-team faultlines lead to feelings such as hostility against members that are not part of the in-group, and can manifest itself in relationship conflicts.

While Jehn et al. (1999) hypothesise a positive relationship between social category diversity and the presence of relationship conflict in teams only, this study argues that social category diversity may also account for other types of conflict. As social category diversity in teams increases, it is likely that underlying value-concepts of team members diverge. Therefore, a higher level of disagreements on various aspects of a team’s tasks may be the consequence. Disagreements – again – may arise regarding both task content (i.e. task conflict) and issues concerned with resources and/or delegation aspects (i.e. process conflict).

Hackman (1990) stated that interpersonal relationships within a team are encouraged by similar goals and values of team members. Extending the above reasoning to this notion, in a reversal conclusion, it can be argued that dissimilarity in goals and values deriving from social category diversity is likely to increase relationship conflict in teams. Furthermore, Cox (1994) argues that cultural differences may be one source of intra-team conflict. Misunderstandings and/or misperceptions will increase in teams with high social category diversity due to cognitive differences or different worldviews of distinct cultural groups. This leads to the following hypothesis:

Hypothesis 2: Social category diversity will increase task, process and relationship conflict in teams.

2.2 Moderating effects of contextual contingencies

So far, there is only limited evidence about contingencies on the work of teams (see Cohen and Bailey, 1997, for a review), although teams are obviously operating in the context of their organisational settings (e.g. Collins and Clark, 2003; Zellner-Bruhn and Gibson, 2006). Gladstein (1984), for example, showed that the compensation of team members influences team processes such as task assignment or working norms. In line with the contingency approach, Judge and Miller (1991) found firm size and the dynamics of a firm’s environment to also have an influence on the speed of decision making. Also, previous research shows, that external contingencies – i.e. the set of “overarching structures and systems external to the team that facilitate or inhibit its work” (Denison et al., 1999, p.1006) – have an important impact on internal team processes. Although existing research on organisational-level contingencies and conflicts is sparse, research more broadly concerning contexts for internal team processes supports the value of considering macro organisational context variables in studies of intra-team conflicts. For instance, organisational practices, norms, symbols and traditions are acknowledged to provide substance to collective self-perceptions (e.g. Dutton et al., 1994) influencing a team’s internal processes. Also, a number of studies show that organisational culture has strong effects on work and behaviour in firms (e.g. Erdogan et al., 2002; Ravasi and Schultz, 2006).

Thus, one major contingency of the diversity-conflict relationship may be the degree of organisational support [an element of organisational culture (Hofstede et al., 1990)], which teams receive to accomplish their tasks. When support for teams is scarce,
increased debates, for example, about the allocation of resources may be expected. It can be argued that one reason for conflicts in teams is the competition for resources (Cox, 1994). Furthermore, if teams lack important support in order to solve problems effectively or to value diversity, increased relationship conflicts may be the consequence. Additionally, as supportiveness may directly influence team learning behaviour, it is likely that teams with high degrees of organisational supportiveness will show higher empathy and thus, face less conflict caused by informational or social category diversity. Therefore, it is hypothesised:

Hypothesis 3a: High degrees of organisational supportiveness for teams will moderate the effects of informational and social category diversity on conflicts, such as to decrease the positive associations between diversity and conflict (H1 and H2).

We argue that organisational openness [an element of organisational culture (Hofstede et al., 1990)] is a second contingency on the organisational level that may influence the diversity – conflict relation. As culture supports and guides the search and interpretation of information (Harris, 1994), organisational members respond more actively to the presence and absence of behaviours that are at the core of its culture. Secondly, culture operates as a social control mechanism (O’Reilly and Chatman, 1996). If the behaviour of team members deviates from cultural norms, this is soon realised and corrected (Sorensen, 2002). Thus, if organisational culture emphasises openness, individuals act in an environment which is characterised through openness and therefore, it is likely that they feel valued and respected (Ely and Thomas, 2001). Moreover, the minority team density (i.e. the “percentage representation of a minority group in the total population of a social system”; Cox, 1994, p.145) is likely to be higher in ‘open’ organisations as this openness may reflect a value-in-diversity perspective. Individuals in such organisations will less likely feel assimilated by co-workers or the organisation they work in. Thus, as assimilation versus preservation of micro cultural identity is a potential source of conflict in and between teams (Cox, 1994), it is likely that ‘open’ organisations will face lower levels of conflict in diverse teams. Consequently, it can be hypothesised that:

Hypothesis 3b: Organisational cultures that are ‘closed systems’ will moderate the effects of informational and social category diversity on conflicts in teams, such as to increase the positive associations between diversity and conflict (H1 and H2).

3 Methods

3.1 Data and sample

Primary data has been gathered from a sample of managers and employees that have been pre-selected according to the following conditions: Potential respondents who worked in multinational organisations were accepted to participate in the survey, only if they worked in teams that consisted of at least three members. Respondents had to answer questions assessing the variables described below on five-point Likert-type scales. Data has been processed and analysed with the statistical software SPSS 14 (Statistical Product and Service Solution).

A total of 114 members representing 27 different full teams responded to the questionnaire. Respondents had a mean age of 31.29 years (SD = 8.51), a mean company tenure of 45.73 months (SD = 63.56) and a mean team tenure of 24.60 months.
(SD = 36.61); 42.1% of the respondents were women; 18.4% of the participants were team leaders. The team size (including the team leader) ranged from three to seven individuals. Respondents were members from 27 different organisations and/or companies (from small enterprises to large multinational corporations), which were based in ten different countries (Brazil, Canada, China, Germany, Italy, Luxembourg, Singapore, Turkey, UK and USA). Respondents worked in organisations from 14 different business sectors (including public services, banking, consulting and production).

The survey was web-based. The decision for using a web-based survey is based on its advantages as stated by Dillman (2000), which are for instance, the reduction of time required for implementation and the limitations of costs for surveying additional respondents. Following the design guidelines strictly for web-based surveys by Dillman (2000) helped us to deal with potential disadvantages of this type of data collection; for instance, that not all participants are equally computer literate or that screen configurations may differ depending on the individual computer settings (Dillman, 2000). We dealt with the major concern that participants could not be reached due to wrong email addresses (Dillman, 2000) by verifying the email addresses with the team leaders. Before sending out the relevant invitation to the survey (including the survey link), each team was contacted individually to ascertain availability and disposition to participate in the survey (Dillman, 2000). Then, the official invitation email, including the survey link, was sent out. Two weeks after this first official email, a reminder was sent out to those members who had not yet responded (Dillman, 2000). To ensure the assignment and eventual aggregation of individual responses to a team level of the respective team they belong to, each hyperlink was coded with a specific team parameter (Team ID) in order to identify responses that come from one and the same team. Additionally, respondents were asked to provide a unique team name for their team in the questionnaire. Due to these provisions, all the questionnaires could be assigned to their respective Team IDs. After 12 weeks the survey was closed.

To reduce possible common method bias stemming from item characteristics, such as item context effects, item priming effects or item embeddedness (Podsakoff et al., 2003); the position of items of each construct was automatically altered by the survey software. To achieve such a ‘counterbalancing question order’ (Podsakoff et al., 2003, p.888), the position of each item relative to the other items of each construct was altered automatically and thus, different for each respondent. However, items of different constructs have not been mixed, due to complex and possible negative outcomes related to this practice.

The developed questionnaire was pilot-tested with a random sample of participants (N_t = 25) not taking part in the actual survey to ensure the clarity of the questions and instructions. To avoid ethnocentric bias (Clark et al., 1999) during the design of the questionnaire, the pilot-test sample consisted of individuals from different cultural backgrounds (i.e. from the UK, USA, Germany, Malaysia and Australia). The questionnaire has been designed using items in English language from renowned academic journals (see measures section for details). On the basis of the received pilot-test feedback, alterations to the questionnaire were implemented where necessary (for example, the introductory texts of each page and some of the labels of the scales were refined and/or modified). Also, the pilot test was used to test if the conduct of the survey in English would be an issue. This was not the case, which can be explained by the fact that all respondents were used to communicating in English in their daily work.
3.2 Measures

This section presents details on the measures used in the questionnaire. First, measures for the independent variables (i.e. informational and social category diversity) are illustrated. Second, the scales that measured the dependent variables (i.e. task, relationship and process conflict) will be presented. Third, measures of the moderator variables are explained. Finally, different control variables are illuminated.

We employed two types of work team diversity indices: one for numeric demographic data and another for categorical demographic data. All demographic data has been obtained from the online questionnaire. Following the suggestion of Allison (1978), the coefficient of variation was used to measure age diversity and the diversity of the number of years of education within each team. For example, to assess age diversity within teams, each team’s standard deviation of age has been divided by the team’s mean age. Using this approach for numerical demographic data is common practice in numerous team studies (e.g. Pelled et al., 1999; Jehn and Bezrukova, 2004).

Additionally, following past research (e.g. Ancona and Caldwell, 1992; Jehn et al., 1999; Pelled et al., 1999; Jehn and Bezrukova, 2004), team diversity with respect to categorical demographic data (e.g. nationality, ethnicity and gender) was measured using an entropy-based index recommended by Teachman (1980):

\[ H = -\sum_{i=1}^{I} P_i \cdot (\ln P_i) \]

The total number of categories of a variable equals \( I \), while \( P_i \) is the fraction of team members falling into category \( i \). The index captures how team members are distributed among the possible categories of a variable. For example, the gender variable has two possible categories (\( I = 2 \)): ‘1’ corresponds to a female and ‘2’ to a male individual. If a given team of ten members has three women and seven men, then \( P_1 \) equals .3, \( P_2 \) equals .7 and \( H \) equals .61. In contrast, if a team of ten members has only one woman and nine men, then \( P_1 \) equals .1, \( P_2 \) equals .9. Consequently, \( H \) equals .33, reflecting a lower diversity within the team. The higher the diversity index is, the greater the distribution of characteristics within the team, and vice versa. In this study, the Teachman (1980) index has been used to measure the diversity regarding ethnicity, functional background, position and gender of each team.

As discussed above, two aggregated team-level measures of diversity have been formed: informational diversity assessed the diversity of teams regarding education (i.e. years of major education), functional area in the organisation (e.g. marketing, finance) and position in the firm (e.g. senior management, assistant). Social category diversity assessed the heterogeneity of teams regarding sex and age. In addition, we integrated ethnic diversity in the social category diversity measure. Thus, the present study was able to extend the social category diversity measure as suggested by Jehn et al. (1999).

In this study, intra-team conflict has been measured by 11 items. Task and relationship conflict were measured by eight items based on Jehn’s (1995) intra-team conflict scale. The eight items which measured the presence of task and relationship conflict were rated on five-point Likert scales, anchored by 1 = ‘none’ and 5 = ‘a lot.’ Both constructs showed a high internal reliability (Cronbach’s \( \alpha = .82 \) and .88). Process conflict was measured by three items taken from Jehn et al. (1999; originally derived by Shah and Jehn, 1993). The items measured the presence of process conflict on five-point Likert scales, anchored by 1 = ‘none’ and 5 = ‘a lot’ (Cronbach’s \( \alpha = .81 \)). The supportiveness
of the organisational context of teams was measured, including items taken from Hyatt and Rudy (1997). Six items measured the extent to which the team members receive support from their organisational context. These items were rated on five-point Likert scales (Cronbach’s α = .89). Respondents were asked to assess team support as the extent to which the team members receive: “ … encouragement, coaching, counselling, and administrative assistance from their manager”; “ … technical and organizational assistance from their team coordinator or a designated team member”; “ … resources that make success possible”; “ … all information necessary for effective job performance”; “ … help in using the information for continuous improvement”; “ … help in upgrading knowledge, skills and abilities”.

Organisational Openness was measured on five-point Likert scales (Cronbach’s α = .60) using three items suggested by Hofstede et al. (1990).

We included two control variables because their influence on team process has been identified by past research. One important measure to include as a control variable was team size. Team research literature has noted that size is a key variable influencing team dynamics, communication and performance; and because larger teams have more potential for heterogeneity and for social loafing (e.g. Blau, 1977; Brewer and Kramer, 1986; Goodman et al., 1986; Bantel and Jackson, 1989; Jackson et al. 1991). All respondents were asked ‘What is the size of your team (including the team leader)?’

As a further control variable task type (i.e. task routiness) was included, because the nature of team tasks often influences team interactions and performance (e.g. Katz, 1982; Weingart, 1992). As complex tasks require higher levels of debate and problem-solving than routine and repetitive tasks, it is likely that task type will influence the level of conflict within teams. To assess task routiness vs. complexity of the tasks the teams in the sample dealt with, three items (reverse-coded) were included in the questionnaire, analogously to the study of Pelled et al. (1999). The Cronbach’s α in the present study was .49. While some scholars ask for values exceeding the .50 or .60 barrier, the value of .49 compares well with several other studies. For example Rahim (1983) reported the Cronbach α values for several conflict handling style scales, of which one was only .37. Thus, the task routiness scale was included in the analysis. The items, rated on five-point scales, comprised: “The technology, required skills, and information needed by the team are constantly changing.” [reverse-coded]; “During a normal work week, exceptions frequently arise that require substantially different methods or procedures for the team.” [reverse-coded]; “Frequent interaction between team members is needed to do our work effectively” [reverse-coded].

4 Results

4.1 Preliminary analysis

To check for multicollinearity, Table 1 shows the means and standard deviations as well as the bivariate Pearson correlates among all variables. Although there are significant inter-variable correlations among the independent variables, none of the coefficients exceed .40. Thus, due to the low levels of inter-variable correlation, multicollinearity does not appear to be a serious problem. Similarly, the results of using each variable as dependent variable within the regression analyses also suggested low levels of multicollinearity.
Table 1

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relationship conflict</td>
<td>2.11</td>
<td>.96</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Task conflict</td>
<td>2.32</td>
<td>.80</td>
<td>.646**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Process conflict</td>
<td>2.18</td>
<td>.92</td>
<td>.686**</td>
<td>.766**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Informational diversity</td>
<td>.56</td>
<td>.25</td>
<td>.285**</td>
<td>.236*</td>
<td>.235*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social category diversity</td>
<td>.45</td>
<td>.17</td>
<td>-3.00**</td>
<td>-1.23</td>
<td>-2.50**</td>
<td>-2.55</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supportiveness</td>
<td>3.47</td>
<td>.84</td>
<td>-2.81**</td>
<td>-3.43**</td>
<td>-3.86**</td>
<td>-0.69</td>
<td>0.052</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Openness</td>
<td>2.23</td>
<td>.95</td>
<td>-3.22**</td>
<td>-3.47**</td>
<td>-2.04*</td>
<td>0.153</td>
<td>0.027</td>
<td>-2.08*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Team size</td>
<td>4.22</td>
<td>1.51</td>
<td>-1.85*</td>
<td>-2.87**</td>
<td>-2.04**</td>
<td>-1.73</td>
<td>-0.014</td>
<td>-0.019</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Task type</td>
<td>2.49</td>
<td>.73</td>
<td>-1.10</td>
<td>-3.31**</td>
<td>-2.47**</td>
<td>-0.035</td>
<td>-0.056</td>
<td>0.152</td>
<td>-2.27*</td>
<td>-0.089</td>
<td></td>
</tr>
</tbody>
</table>

Notes:  
\( n = 114; *p < .05; **p < .01 \).
4.2 Tests of hypothesis

To test the hypotheses, hierarchical multiple regression procedures have been used. This technique can be applied when researchers want to test a theoretical model and the order of entry of variables into the equation is based on theoretical rationale (Newton and Rudestam, 1999). As this study developed a theoretical framework based on a contingency approach, this procedure seems appropriate. In total, three hierarchical multiple regression models (one for every dependent variable, i.e. task, relationship and process conflict) have been formed (e.g. Newton and Rudestam, 1999; Cohen et al., 2003).

Each hierarchical regression consisted of three steps. In a first step, control variables were entered in the regression model. In a second step, the independent variables (i.e. informational and social category diversity) and the moderator variables (contingencies) were entered. This is necessary because if moderator effects are tested, one must also control for the main effect of the moderator variable itself (Baron and Kenny, 1986). In a third step, the interaction terms were entered in the regression model. Moderator effects are indicated by significant effects of interaction terms while direct effects of the moderator and the independent variable are controlled (Baron and Kenny, 1986). The question of effect size of an interaction term can either be addressed by running two independent regressions or by running a hierarchical regression: An examination of the $R^2$ change statistics and the significance of this change is equivalent to running two different regressions and subtracting the $R^2$ values (Newton and Rudestam, 1999).

Table 2 shows the results of the regressions.

Hypothesis 1 suggested a positive influence of informational diversity on all three types of conflict. In each of the three models, the introduction of the main variables yielded a highly significant change in $R^2$, indicated by the $F$ change statistic. For the case of relationship conflict, the introduction of main variables led to a change in $R^2$ of .250, which was significant at the .001 level ($F$ change 9.441). The total variance explained by the model, therefore was increased to 29.3% (adjusted $R^2$.253). Supporting Hypothesis 1, informational diversity had a positive effect (.194) on the emergence of relationship conflict in teams, which was significant at the .1 level. However, in the second model, where the introduction of the main variables led to a change in $R^2$ of .165 (significant at the .001 level, $F$ change 6.613) and thus, the model explained 33.4% of the variance (adjusted $R^2$.297), the influence of informational diversity on task conflict was positive (.116) but not significant. In the third model, predicting process conflict, the introduction of the main variables led to a change in $R^2$ of .193 (significant at the .001 level, $F$ change 7.519) and thus, the model was able to explain 31.4% of the variance (adjusted $R^2$.193). The influence of informational diversity on task conflict was positive (.165) and significant at the .1 level, as observed in the case of relationship conflict. Consequently, Hypothesis 1 was partly supported by the data (i.e. for the cases of relationship and process conflict).

Hypothesis 2 predicted a positive influence of social category diversity on all three types of conflict. As explained above, the introduction of main variables at the second step led to statistically highly significant changes in $R^2$ for each of the models. In the first model, predicting relationship conflict, social category diversity had a negative effect on the dependent variable ($-.272$), which had a significance on the .01 level. In the second model, employing task conflict as the dependent variable, social category diversity also had a negative effect, but not at a significant level. Finally, in the third model, predicting process conflict, the effect of social category diversity was negative ($-.207$) and
significant at the .01 level. Thus, Hypothesis 2 was not supported in any of the models. Although social category diversity had significant impact on two of three dependent variables, the effects were contrary to the predicted ones. Rather than positive, social category diversity had significant negative impact on the emergence of relationship and process conflict.

**Table 2** Hierarchical multiple regressions for group diversity predicting conflict moderated by contextual contingencies

<table>
<thead>
<tr>
<th></th>
<th>Relationship conflict</th>
<th>Task conflict</th>
<th>Process conflict</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1: Controls</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Team Size</td>
<td>.176†</td>
<td>.246**</td>
<td>.248**</td>
</tr>
<tr>
<td>Task Type</td>
<td>−.094</td>
<td>−.309**</td>
<td>−.225*</td>
</tr>
<tr>
<td>( R^2 )</td>
<td>.043</td>
<td>.169</td>
<td>.122</td>
</tr>
<tr>
<td>Adjusted ( R^2 )</td>
<td>.026</td>
<td>.155</td>
<td>.106</td>
</tr>
<tr>
<td>( F )</td>
<td>2.484†</td>
<td>11.325***</td>
<td>7.698**</td>
</tr>
<tr>
<td><strong>Step 2: Main effects</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Informational Div. (ID)</td>
<td>.194*</td>
<td>.116</td>
<td>.135†</td>
</tr>
<tr>
<td>Social Category Div. (SD)</td>
<td>−.272**</td>
<td>−.086</td>
<td>−.207**</td>
</tr>
<tr>
<td>Supportiveness (SUP)</td>
<td>−.196*</td>
<td>−.245**</td>
<td>−.320**</td>
</tr>
<tr>
<td>Openness (OP)</td>
<td>.255**</td>
<td>.234**</td>
<td>.088</td>
</tr>
<tr>
<td>Change in ( R^2 )</td>
<td>.250</td>
<td>.165</td>
<td>.193</td>
</tr>
<tr>
<td>( F ) change</td>
<td>9.441***</td>
<td>6.613***</td>
<td>7.519***</td>
</tr>
<tr>
<td>( R^2 )</td>
<td>.293</td>
<td>.334</td>
<td>.314</td>
</tr>
<tr>
<td>Adjusted ( R^2 )</td>
<td>.253</td>
<td>.297</td>
<td>.193</td>
</tr>
<tr>
<td>( F )</td>
<td>4.281***</td>
<td>8.947***</td>
<td>8.181***</td>
</tr>
<tr>
<td><strong>Step 3: Interaction effects</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ID ( \times ) SUP</td>
<td>.367</td>
<td>−.392</td>
<td>.162</td>
</tr>
<tr>
<td>ID ( \times ) OP</td>
<td>.447</td>
<td>.119</td>
<td>.509†</td>
</tr>
<tr>
<td>SD ( \times ) SUP</td>
<td>.222</td>
<td>.431</td>
<td>.415</td>
</tr>
<tr>
<td>SD ( \times ) OP</td>
<td>−.801**</td>
<td>−.653*</td>
<td>−.823**</td>
</tr>
<tr>
<td>Change in ( R^2 )</td>
<td>.077</td>
<td>.062</td>
<td>.093</td>
</tr>
<tr>
<td>( F ) change</td>
<td>3.132*</td>
<td>2.666*</td>
<td>4.049**</td>
</tr>
<tr>
<td>( R^2 )</td>
<td>.369</td>
<td>.397</td>
<td>.408</td>
</tr>
<tr>
<td>Adjusted ( R^2 )</td>
<td>.308</td>
<td>.338</td>
<td>.350</td>
</tr>
<tr>
<td>( F )</td>
<td>6.030***</td>
<td>6.760***</td>
<td>7.088***</td>
</tr>
</tbody>
</table>

Notes: † \( p < .1 \); * \( p < .05 \); ** \( p < .01 \); *** \( p < .001 \).

N = 114, standardised coefficients shown.

Hypothesis 3a proposed that high degrees of organisational supportiveness for teams will moderate the effects of informational and social category diversity on conflicts, such as to decrease the positive associations between diversity and conflict. The data revealed no significant interaction effect between supportiveness and diversity for any type of conflict. Hence, Hypothesis 3a was not supported by the data.
Hypothesis 3b stated that organisational cultures that are ‘closed systems’ will moderate the effects of informational and social category diversity on conflicts, such as to increase the positive associations between diversity and conflict. In regards to informational diversity, only one significant interaction effect was found in any of the models and on a low level of significance. However, regarding the interaction effects of organisational culture and social category, significant negative interaction effects for all three types of conflict were revealed by the data. In addition, the introduction of the diversity-context interaction terms was able to significantly add to the variance explained by the main effects of diversity and context variables in all three models. Thus, Hypothesis 3b was partly supported by the data.

5 Discussion

Our study extends previous research on the relationship between diversity and team processes to the setting of diversity – intra-team conflict linkages. In general, our findings reinforce the importance of research into a more distinctive understanding of diversity (e.g. Garcia-Prieto et al., 2003) as well as the importance of contingency factors as contextual settings for diverse teams. We turn now to discussing the implications of our key findings in more detail.

First, this study suggests that informational diversity has a positive influence on the emergence of relationships and process conflict whereas no significant influence was found for task conflict (partly support of Hypothesis 1). The non-significant effect on task conflict is very surprising, as the study of Jehn et al. (1997) demonstrated that differences in educational background increased task-related discussions in teams. Furthermore, as knowledge bases differ and disagreements about task-related issues are likely to arise, higher levels of task conflict should be the consequence. However, positive relationships were only found for the effects of informational diversity on relationship and process conflict. One explanation might be that relationship and process conflicts have been triggered by task conflict and were the dominant type of conflict in the respective teams at the point of the survey. Another explanation might be that due to social categorisation processes (e.g. Tajfel, 1982) on the basis of team members’ educational or functional background or the heterogeneity of education, individuals have only little empathy for members of other social categories. Thus, relationship conflict may be the predominant type of conflict.

Secondly, Hypothesis 2 proposed that social category diversity will increase task, process and relationship conflict in teams (and thus, predicting a positive effect of social category diversity). According to social identity theory, one may expect that it is likely that individuals group themselves due to social categorisation processes and prefer to interact with members of their own social category (e.g. Billig and Tajfel, 1973; Tajfel, 1982). However, the data did not support the predicted relationship and thus, revealed extremely opposing effects of social category diversity. We found two explanations for the counter-intuitive findings that individuals do not group themselves due to social categorisation processes and do not prefer to interact with members of their own social category. First, it might be that respondents of this survey were individuals with high
cultural empathy and eventually had much experience in dealing with intercultural issues. Given the tendency towards a global business environment, it is much more likely that individuals working together in a diverse team have international experience they can rely on, as this was the case a few years ago. In negotiation-simulations across various countries, Bird and Stevens (2003) show that within the world business community, an identifiable and homogenous group is emerging that shares a common set of values, attitudes, norms and behaviours, which overrule the diverse cultural backgrounds of the individuals. Cross-cultural differences no longer matter in every single situation as culturally-experienced individuals know how to deal with cross-cultural issues in team interactions (Neyer and Harzing, 2008). They might therefore value diversity and see it as an opportunity to learn about foreign cultures and apply a value-in-diversity perspective. In this case, social category diversity may not be causal for the emergence of any type of conflict involved. Secondly, it might be the case that respondents of this survey were members of organisations that highly value diversity (Ely and Thomas, 2001). Therefore, this study suggests, similar to Williams and O’Reilly (1998) and Jehn et al. (1999) that the effects of diversity go beyond simple main effects. To gain a deeper understanding of potential contingencies as contextual surrounding of the diversity-conflict relations, we tested the moderating effects of organisational supportiveness and organisational openness.

The results of this study show that effects of diversity on team processes can vary significantly depending on organisational level contingencies. Interestingly, we have not found a significant moderating effect of organisational supportiveness on the diversity-conflict relation. We expected that teams which benefit from a high degree of supportiveness by their surrounding organisational context, i.e. resources, counselling, etc. are able to effectively deal with opposing viewpoints (both social category and informational diversity) and thus, may prevent conflicts to arise. However, our analysis shows that these HR-oriented tools do not moderate the diversity-conflict relation. Our assumption that organisational supportiveness is an important contingency in the diversity-conflict relation is thus, not supported by our data. Second, our data reveal that organisational openness significantly moderates the relation between social category diversity and all types of conflicts. This supports the findings of past research (e.g. Hofstede et al., 1990; Cox, 1994; Ely and Thomas, 2001; Lovelace et al., 2001) that there are dimensions of organisational cultures that have a considerable impact on team functioning. Contrary to that finding, only a weak interaction effect on the relation between informational diversity and process conflict was found, while effects on task and relationship conflict were not significant. Effects of informational diversity on conflict thus, do not depend on this specific contingency in our study. In combination with the results of Hypothesis 3a, this finding can be interpreted as a first hindsight that the contingencies of the diversity-conflict relation differ depending on the type of diversity observed.

This also suggests some preliminary implications for practice. The finding that organisational openness moderated the relationship between social category diversity and all three types of conflict shows that managers and/or organisations might be able to influence the emergence of conflict in teams by intentionally creating organisational cultures that impede conflict in teams. Secondly, anticipating the result that informational
Diversity and conflict in teams

Diversity was positively related to relationship conflict may be crucial for team managers or organisations in order to effectively manage employee’s differences in informational background. If it is possible for team managers to predict the effect of team diversity on the emergence of conflicts in teams, they might be able to prevent conflicts by implementing appropriate team techniques or by creating a context that impairs the appearance of conflict.

However, when interpreting the results of the study, one has to be aware that the effect of conflict in teams is not always dysfunctional. Whereas one strand of research clearly shows that conflict can be detrimental for team performance (e.g. Bettenhausen, 1991; Jehn, 1997; Jehn et al., 1999; De Dreu and Weingart, 2003), another strand of research suggests that conflict can enhance team performance under certain conditions. For instance, Jehn and Mannix (2001, p.238) found in a longitudinal study that, “teams performing well were characterised by low but increasing levels of conflict, low levels of relationship conflict, with a rise near project deadlines, and moderate levels of task conflict at the midpoint of group interaction”. Additionally, Simons and Peterson (2000) summarise the literature by noting that groups who experience task conflict tend to make better decisions, as such conflict encourages greater cognitive understanding of the issue being considered. Therefore, a single focus on the avoidance of conflict seems to be not sufficient. Companies may thus combine their activities to reduce conflict with efforts to teach effective conflict handling styles (Kellermanns et al., 2008) and diversity management techniques to enhance the performance of their diverse teams. For example, companies should explicitly inform their employees about the value that lies in diversity, as pro-diversity beliefs can positively affect the performance of diverse teams (Homan et al., 2007). In summary, a more nuanced understanding of when what type of conflicts turns out to be fruitful or not, is needed.

6 Limitations and future research directions

As with most research, our study has several limitations. One limitation is the relatively small sample size. Even though we found strong and significant effects in our sample, future studies should try to analyse contingencies using a larger sample, including teams and team members from different countries. In addition, the index calculated to measure diversity employed in this study might be limited by some aspect. For example, the adopted Teachman (1980) entropy-based index is not a standardised index. Thus, problems of aggregation might occur when overall measures of diversity have been formed. Also, the study included no measure of underlying diversity (Jackson et al., 2003), such as value diversity, which was explicitly considered by Jehn et al. (1999). Thus, the present study employs diversity indices as proxies for underlying value diversity, which might in fact differ among individuals, even within specific cultures (e.g. transnational subcultures). Additionally, a limitation might be the focus on organisational supportiveness and openness as contingencies. Future research should look at other organisational-level contingencies as contextual moderators for the diversity-conflict relation. One way to discover relevant contingencies may be a mixed-method approach: qualitative research techniques could be applied to derive relevant
contingencies; quantitative methods could then be used to test the effects against a larger sample. Also, future research might investigate the effects of organisational culture in more detail, as significant moderator effects of organisational openness on the emergence of process conflict has been found in the present study. This could be achieved by including all of the 18 practice items of organisational culture, identified by Hofstede et al. (1990). Hence, further knowledge regarding other dimensions of organisational culture could be revealed. Additionally, further measures of organisational contingencies, such as business strategies, business sector, and similar, could be included. Finally, future studies should explicitly test for performance effects when analysing the relation between diversity and conflict to strengthen the implications for both theory and practice.

Despite these limitations, a major strength of our study was its design. Whereas most past studies were limited to single organisations and/or teams and did not test diversity effects across different organisational contexts, our study covered teams from various countries, business sectors, and organisations. An additional strength was our use of ‘real world’ work team data given the extensive use of student samples or top management teams (e.g. Bantel and Jackson, 1989). Finally, this research provides (to the best of our knowledge) one of the first full tests of the relation of diversity and different types of conflicts while considering contingencies factors as potential moderators. By testing these important relationships, our study offers important implications for future conceptual and empirical work on this topic.

7 Summary

The main purpose of this study was to investigate the link between team diversity (i.e. informational and social category diversity) and intra-team conflicts (i.e. relationship, task and process conflict), considering possible contingencies, for example, moderating the effects of the surrounding organisational context of teams. By analysing 27 teams from 10 different countries in our quantitative study, we can derive three lessons learned. The first lesson learned is that within a globalised business community, social category diversity among individuals might be overruled by the establishment of a common set of values, attitudes, norms and behaviours of the internationally operating business people. The second lesson learned is that the organisational context in which the teams are operating influences the diversity-conflict relation. More importantly, our findings show that different types of organisational contingencies, i.e. organisational supportiveness and openness have different influences on the diversity-conflict relation. Additionally, and this is the third lesson learned, our findings reveal that the extent of the influence of the organisational context differs depending on the type of diversity, i.e. informational or social category diversity. This has important implications for research and practice. From a research perspective, the results of our study show that more research needs to be done to examine additional contingencies of the diversity-conflict relation. From a practitioner’s perspective, this paper leads to a number of consequences for the design of team contexts, such as a supportive surrounding.
References


Galbraith, J.R. (1973) Designing Complex Organizations, Addison-Wesley, Reading, UK.


Diversity and conflict in teams


J.F. Puck, A-K. Neyer and T. Dennerlein


