

A field study of group diversity, workgroup context, and performance

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Summary

We explore how the context of an organizational workgroup affects the relationship between group diversity and various performance outcomes. In particular, we theorize and empirically examine the moderating effects of three categories of workgroup context variables: cultures (people- and competition-oriented), strategies (stability-, growth- and customer-oriented), and human resource practices (diversity- and training-oriented). We perform analyses on 1528 workgroups from a *Fortune* 500 information-processing firm. The results showed, for example, that members of groups diverse in functional background were paid higher composite bonuses when their workgroup context emphasized people-oriented cultures and lower levels of bonuses in contexts with a focus on stability-oriented strategies. In addition, members of groups diverse in level of education were awarded higher amounts of bonuses in workgroup environments that emphasized customer- and growth-oriented strategies. However, members of such groups had lower levels of composite bonuses in environments that focused on training- and diversity-oriented human resource practices. We discuss future research directions regarding diversity, workgroup context, and performance outcomes and outline some implications for managers and group leaders. Copyright © 2004 John Wiley & Sons, Ltd.

Introduction

Many management challenges arise from the intersection of two recent organizational trends: a growing preference for group work and increased diversity in the workplace (Earley & Mosakowski, 2000; Jehn, Northcraft, & Neale, 1999; Richard 2000; Thomas & Ely, 1996). The emphasis on workgroups over more traditional corporate hierarchies in organizations has become a popular strategy and is often assumed to improve effectiveness (Bishop, Scott, & Burroughs, 2000). Research has shown, for example, that workgroups are more effective owing to their capacity to adjust to new information and challenges with greater speed, accuracy, and efficiency (Cohen & Bailey, 1997). Furthermore, companies are recognizing the need to leverage the diversity of their employees in order to sustain their competitive advantages in a global marketplace (Offerman & Gowing, 1990; Thomas & Ely, 1996; Yaprak, 2002). Specifically, the international trend toward increased immigration and the globalization of firms (Johnson, 2002; Yaprak, 2002) and the domestic trend toward an aging workforce and a greater

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representation of women and minorities in the workplace (Friedman & DiTomaso, 1996; Gorski, 2002; Jackson, Stone, & Alvarez, 1993) are bringing together more people from diverse backgrounds. Thus, given these demographic and organizational trends, effective management of diversity in workgroups is an increasingly critical requirement for business success.

The challenges created by these trends are difficult to translate into solutions for managers and group leaders faced with the day-to-day supervision of diverse groups. Company leaders often presume that greater diversity will automatically lead to (often unspecified) benefits while ignoring the complicated issues of managing diverse teams (Kersten, 2000; Shaw & Barrett-Power, 1998). However, without creating a proper workgroup context conducive to realizing the value in diversity, managers may be left balancing a more complicated but no more productive workplace. Moreover, according to a review by Milliken and Martins (1996, p. 403), '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.' In order to account for such potentially harmful consequences of diversity, researchers have been looking at the intervening role of various group processes (e.g., conflict, communication, information sharing) (e.g., Bunderson & Sutcliffe, 2002; Pelled, Eisenhardt, & Xin, 1999; Smith et al., 1995). However, to more fully understand the effects of diversity in groups, the influence of contextual settings on individuals and groups in which they work also should be considered (Rousseau & Fried, 2001). Thus, more studies are needed to further investigate how context influences diverse groups to shape performance, and to provide managers and organizations with knowledge and recommendations for effective diversity management.

A Model of Group Diversity, Workgroup Context, and Performance

A notable aspect of past diversity research is the contradictory nature of the results across studies. In particular, while some prior studies show positive effects (Hoffman & Maier, 1961; Hoffman, 1978; Jehn et al., 1999; Watson, Kumar, & Michaelson, 1993), even more show that diversity can have negative effects on performance (Ancona & Caldwell, 1992; O'Reilly & Flatt, 1989; Steiner, 1972). The evidence is complicated because diversity seems to interact with a variety of other group and organizational factors (Williams & O'Reilly, 1998). Even though a few studies have looked carefully at the effects of these factors on the relationship between diversity and outcomes (cf. Chatman, Polzer, Barsade, & Neale, 1998; Jehn et al., 1999) and despite widespread public opinion of the virtues of diversity, the empirically beneficial link between diversity and group, business, or organizational performance still remains unproven. Thus, departing from prior research that focused primarily on the direct effects of diversity on performance, we explore *when* and *how* diversity affects performance and *what* organizations can do to translate diversity into positive performance outcomes. In particular, we ask the question: To what extent do contextual factors determine whether workplace diversity is beneficial or detrimental to performance? Specifically, we examine certain cultures, business strategies, and human resource practices as workgroup contexts. Below, we develop and discuss a conceptual model of diversity to illustrate the specified relationships.

Using Williams and O'Reilly (1998) as a guide to the many relevant aspects on which individuals differ, we define diversity broadly as 'any attribute that people use to tell themselves that another person is different' (Williams & O'Reilly, 1998, p. 81). Diversity is traditionally conceptualized in terms of visible differences in age, gender, and race (Hicks-Clarke & Illes, 2000). Individuals may also differ on less visible characteristics such as level of education or tenure with the company (Thatcher & Jehn, 1998; Tsui, Egan, & O'Reilly, 1992; Williams & O'Reilly, 1998). In this study, we consider group diversity along six demographic dimensions: age, gender, race, tenure with the company, level of

education, and functional background. We have chosen these variables based on previous theories of group diversity that suggest that these attributes have significant group diversity effects (e.g., Jackson, 1992; Jehn et al., 1999; Pelled et al., 1999; Tsui et al., 1992). We examine group diversity using the compositional approach (Tsui, Porter, & Egan, 2002) that conceptualizes diversity as the distribution of demographic characteristics within a group.

In this study, we examine the specific contexts of workgroups and propose that these group contexts may serve as moderators of the relationships in which a phenomenon at one level (e.g., group diversity) has an impact at another (usually lower) level (e.g., individual performance ratings) (Klein & Kozlowski, 2000; Rousseau, 1985). Mowday and Sutton (1993, p. 198) define context as 'stimuli and phenomena that surround and thus exist in the environment external to the individual, most often at a different level of analysis.' According to Johns (2001), the context of individuals and groups often works in such a way as to encourage or impede behavior and attitudes in organizational settings. Recent research on diversity has suggested that cultures, business strategies, and human resource practices may be of great importance when considering the effects of group diversity (Chatman et al., 1998; Richard & Kirby, 1997; Richard, 2000). Thus, we explore the impact of specific group-level contextual variables on the relationship between group diversity and various performance outcomes and discuss these characteristics of the workgroup environment in detail in the next section.

Much research has been done to investigate the effects that different diversity variables have upon performance (cf. Riordan, 2000; Williams & O'Reilly, 1998). In this study we focus on several outcomes such as group and individual performance, bonuses, and stock options. Group and individual performance refer to whether the productive output of the group or individual meets or surpasses specific performance goals. Bonuses are cash incentive payouts often given annually based on individual and group performance over a specified period of time. Stock options are another form of bonus as they reward the employee by awarding ownership contingent upon her continued association and satisfactory performance with the firm (Jensen & Murphy, 1990; Kerr & Kren, 1992).

Workgroup Context

Recent research has stressed the importance of specific contextual variables when modeling the relationship between diversity and performance; these are group cultures, business strategies, and human resource practices (Chatman et al., 1998; Richard & Johnson, 2001; Williams & O'Reilly, 1998). Chatman et al. (1998) explored the diversity–performance relationship across different cultures of MBA project teams and found important differences based on individualistic versus collectivistic cultural environments. Richard (2000) reported that firm-wide business strategies moderated the relationship between diversity and performance. Richard (1999) and Richard and Johnson (2001) proposed that the nature of human resource practices may also represent a crucial contextual factor that influences the diversity–performance relationship. Our study extends the existing research on group diversity by conceptualizing and empirically examining the effects of different organizational cultures, business strategies, and human resource practices as the contextual environments of workgroups.

Group cultures

Following Reichers and Schneider's (1990) definition of organizational culture, we define the workgroup cultural context as a common set of shared meanings or understandings about a group. Elements of group cultures are shared standard operating procedures, strongly held values, and

norms about patterns of group members' behaviors (Chatman & Jehn, 1994; Rousseau, 1990; Triandis & Suh, 2002). Past research on diversity suggests that group cultures may be 'a powerful way for managers to use informational and social influence processes to encourage solidarity rather than divisiveness' (Williams & O'Reilly, 1998). In particular, group culture as a social control system can moderate the impact of diversity on performance by reinforcing positive views of diversity and rewarding its presence and successful management (O'Reilly & Chatman, 1996). In one study, for example, an organizational culture supporting ethnic diversity was reported to have positive effects on performance (O'Reilly, Williams, & Barsade, 1997). Similarly, Thomas and Ely (1996) found that business leaders who develop a culture in which diversity is viewed as an opportunity to learn rather than as a legal requirement tend to have organizations (and groups) that perform better.

Two cultural orientations have recently been explored in the organizational demography literature: collectivism and individualism (e.g., Chatman et al., 1998). Collectivistic cultures emphasize cooperation, sociability, empathy, interdependence, and good interpersonal relationships (Triandis, 1995). Individualistic cultures, on the other hand, emphasize self-orientation, competition, uniqueness, autonomy, independence, and achievement (Triandis & Suh, 2002). Whereas these two focuses have received much attention in the literature as nation-, industry-, organization-, and occupation-level phenomena (e.g., Chatman & Jehn, 1994; Perlow & Weeks, 2002; Triandis & Gelfand, 1998; Workman, 2001), we argue that cultures are also an important factor of workgroup environments in organizations. Thus, we study groups operating in people-oriented cultures which emphasize collectivistic values and in competition-oriented cultures which accentuate individualistic values.

People-oriented group cultures give greater recognition to individuals who identify more with group characteristics rather than individual characteristics and place the collective above themselves (Erez & Somech, 1996). Diverse groups in people-oriented cultures will cultivate a sense of cooperation and teamwork which may reduce intergroup bias arising from demographic differences (Gaertner, Mann, Dovidio, & Murrell, 1990; Tsui et al., 1992). This usually leads to greater team commitment and less conflict—qualities that past research has attributed to improved performance (Bishop & Scott, 2000; Jehn et al., 1999; West & Wallace, 1991). Using a business simulation, Chatman et al. (1998) found that participants viewed demographic diversity as more beneficial for groups with collectivistic cultures as they were less likely to perceive differences among themselves and experience negative effects of categorization processes. The researchers proposed that these effects may occur due to common fate, shared values, and a sense of in-group membership facilitated by such cultures. Therefore, we predict that the relationship between group diversity and performance is moderated by culture such that:

Hypothesis 1: Diverse groups will be more likely to have higher levels of performance in group contexts that emphasize people-oriented cultures than in contexts that do not emphasize people-oriented cultures.

Competition-oriented cultures place greater emphasis on individual accomplishment as opposed to collective accomplishment, and may cause group members to seek differences amongst themselves to enhance their own self-image (Kim & Markus, 1999; Ng & Van Dyne, 2001). This desire to clearly delineate differences between those from diverse backgrounds may produce tensions detrimental to the efficient functioning of individuals within the group and the group as a whole (Mannix, Thatcher, & Jehn, 2001; Tsui et al., 1992). Moreover, the quest to assemble unique self-images induced by such competitive cultural contexts may inhibit group members from realizing synergistic opportunities for cooperative performance outcomes superior to those produced individually (Beersma & De Dreu, 1999). In the same business simulation cited earlier, Chatman et al. (1998) found that members of

diverse groups with individualistic cultures were more likely to perceive differences among each other and see group diversity as more harmful to effectiveness. Therefore, we predict:

Hypothesis 2: Diverse groups will be more likely to have lower levels of performance in workgroup contexts that emphasize competition-oriented cultures than in contexts that do not emphasize competition-oriented cultures.

Business strategies

Past research suggests that the type of strategy defines the amount of emphasis and resources devoted to various organizational tasks and, therefore, can be viewed as an important contextual factor for workgroups (Delery & Doty, 1996; Doty, Glick, & Huber, 1993; Ruekert & Walker, 1987). Supposedly, the type of strategy chosen can influence the relationship between diversity and the firm's performance as shown by Richard (2000). Since Richard's is the only study on diversity exploring this relationship that we are aware of, we extend his examination of firm-level diversity and performance and examine in this study workgroup-level diversity across various strategic contexts within a corporation.

To capture the effects of business strategies and investigate their predictive values, numerous typologies have been developed in the strategy literature (e.g., Miles & Snow, 1978; Porter, 1980). Like Richard (2000) we adapt Miles and Snow's (1978) typology of business strategies (e.g., prospectors and defenders), which has been shown as a valid framework for predicting the effects of corporate diversity, to our examination of workgroup context. In particular, we concentrate on three types of contextual strategies: growth-oriented strategies, stability-oriented strategies, and customer-oriented strategies (Delery & Doty, 1996; Miles & Snow, 1978; Richard, 2000). Growth-oriented strategies focus on product design and are characterized by innovation and flexibility. Stability-oriented strategies refer to strategies that focus on creating a stable domain by avoiding growth and risk-taking actions. Finally, customer-oriented strategies emphasize the development of meaningful relationships with customers.

Workgroups in growth-oriented strategic environments are expected to constantly exploit new product and market opportunities, while groups in stability-oriented strategic environments operate in a more stable environment and focus on efficiency (adapted from Morris, Cascio, & Young, 1999). Following Lumpkin and Dess (1996), we argue that diverse groups with emphasis on growth-oriented strategies support new ideas, experimentation, and creative processes and thus make possible the inclusion of views and efforts from a diverse employee population. As a result, diverse groups in such environments may produce more new products, services, and innovative solutions that can serve as their performance advantage (Oliver, 1990; Watson, Kumar, & Michaelsen, 1993). Therefore, we predict:

Hypothesis 3: Diverse groups will be more likely to have higher levels of performance in workgroup contexts that pursue growth-oriented business strategies than in contexts that do not pursue growth-oriented business strategies.

Furthermore, unlike groups in growth-oriented contexts, groups in stability-oriented strategic environments are not expected to benefit from diversity. Groups in such environments demand less innovation and focus more on efficiency achieved through centralization, specification, and vertical differentiation (Doty et al., 1993). For these groups, diversity could decelerate group processes, increase communication problems and misunderstanding, and hinder the speed and proficiency of decision-making processes (Larkey, 1996; Milliken & Martins, 1996; Williams & O'Reilly, 1998). Therefore, we predict:

Hypothesis 4: Diverse groups will be more likely to have lower levels of performance in workgroup contexts that pursue stability-oriented business strategies than in contexts that do not pursue stability-oriented business strategies.

We argue that diverse groups with emphasis on customer-oriented strategies may have higher levels of performance because they can benefit from utilizing the information of diverse employees to better serve the needs of their customers. Such groups can, for example, have a greater understanding of the preferences of a broader range of customers (Cox, 1993; Jackson & Alvarez, 1992; Thomas & Ely, 1996). This understanding can be attributed to the ability of group members to closely identify with and feel similar to customers who share corresponding demographic characteristics (Tajfel & Turner, 1986). Identification with customer characteristics may result in beneficial attitudinal and behavioral outcomes of employees such as cultural sensitivity and insights, and a unique understanding of customer needs. These are qualities that may help a group focusing on customer-oriented strategies to align its marketing efforts and product design with the preferences of diverse customers (Bendick, Egan, & Lofhjelm, 2001; Cox & Blake, 1991; Morrison, 1992; Richard, 2000). We also believe that such qualities, if valued within a group as is expected in such strategic environments, will enhance tolerance of diverse views and improve overall group processes and thus, performance. Therefore, we predict:

Hypothesis 5: Diverse groups will be more likely to have higher levels of performance in workgroup contexts that pursue customer-oriented business strategies than in contexts that do not pursue customer-oriented business strategies.

Human resource (HR) practices

Many HR practices are motivated by efforts to create competitive advantage through better trained employees, promoting diversity and a broader vision, being open to new ideas, and supporting employee involvement and commitment (Becker & Huselid, 1998; Ichniowski, Shaw, & Prennushi, 1997; Kochan & Osterman, 1994; MacDuffie, 1995). In this study, we focus on two types of HR practices: training-oriented and diversity-oriented. Both types of practices refer to a set of activities offered by the division or department to its employees to promote understanding of its values or practices, maintain positive relationships, and improve productivity (adapted from Enz & Siguaw, 2000; Richard & Johnson, 2001). Training-oriented practices accomplish this indirectly by honing employee job-related skills within the context of the department's values towards diversity; whereas diversity-oriented practices directly attempt to impart on employees the department's values regarding diversity.

Groups with emphasis on training-oriented HR practices may employ various training modules (e.g., new hires orientation training) in order to develop certain employees' skills to meet groups' specific challenges and needs (Klein & Weaver, 2000). Training-oriented HR practices can be viewed as any department-sponsored intervention that intends to affect group members' behaviors, cognitions, attitudes, values, and emotions (Delery & Doty, 1996; Nemetz & Christensen, 1996). Training modules in such environments provide opportunities for employees to share their experiences while acquiring various job-related skills and then creating an atmosphere where employees are more likely to process new information (Campbell, Dunnette, Lawler, & Weick, 1970). As a result, there might be a reduction of bias and tensions (Brewer & Brown, 1998) arising from demographic differences and also a change in employee views toward greater acceptance of these differences (Nemetz & Christensen, 1996). This type of group influence in diverse groups with emphasis on training-oriented HR practices might further increase their perception of similarity, promote liking, and facilitate recognition and appreciation of cultural differences (Gaertner, Rust, Bachman, Dovidio, & Anastasio, 1994). These processes are usually associated with greater employee retention, improved performance, and satisfaction (Jehn, 1995; Smith-Jentsch, Campbell, Milanovich, & Reynolds, 2001; Tsui et al., 1992). Therefore, we predict:

Hypothesis 6: Diverse groups will be more likely to have higher levels of performance in workgroup contexts that implement training-oriented human resource practices than in contexts that do not implement training-oriented human resource practices.

HR practices with emphasis on valuing diversity represent a crucial contextual factor that may bring net-added value to group processes and translate diversity into positive outcomes (Richard, 1999; Richard & Johnson, 2001). These diversity-oriented HR practices encompass programs that directly send a signal to employees about the group's values regarding diversity (Nemetz & Christensen, 1996) such as the acceptance and accommodation of various religious practices in the workplace (e.g., allowing days off for various religious holidays and special times for prayer). These values may foster cooperation and a desire to solve problems collectively, thereby creating norms of tolerance and open communication (Hopkins & Hopkins, 2002). Employees in such environments may consider diversity as a valuable asset of their workgroup and embrace differences that can enhance effectiveness through creativity and innovation (Richard & Johnson, 2001). Moreover, diversity-oriented HR practices create workgroup environments in which employees believe that their group fairly values each group member's contribution, which may eventually result in their greater commitment and productivity (Hicks-Clarke & Illes, 2000). Richard and Kirby (1997) found that diversity may have a positive effect on productivity and return on equity in firms that employ effective HR practices supporting diversity. We further argue that group diversity will be beneficial in diversity-oriented workgroup environments where clear and unambiguous signals supporting diversity are sent.

Hypothesis 7: Diverse groups will be more likely to have higher levels of performance in workgroup contexts that implement diversity-oriented human resource practices than in contexts that do not implement diversity-oriented human resource practices.

Organizational Context

Organization

The current study presents findings from a large *Fortune* 500 information-processing company with over 26 000 employees at all ranks within the organization. For more than 80 years, this company has earned a reputation as a leading global provider of messaging products and services. It specializes in processes and technologies that save customers time and money, enhance their security, and add maximum value to their mail and document processes. This company is truly global, with business facilities in 130 countries and a World Headquarters in the United States.

Mission

The company's mission emphasizes building relationships with its four constituent groups: customers, employees, stockholders, and the communities. The cornerstone of their business is total customer satisfaction by exceeding expectations for quality and value. The work environment is marked by fair opportunities and compensation, and clear communication among employees. Performance objectives are set to provide their stockholders with consistent results and enhanced stock values. Finally, the company strives to improve the quality of life in its communities and encourages employees to serve those communities.

Diversity Management

Diversity has been at the forefront of this company's social and business agenda for over half a century. In the 1980s, management realized that many minority employees were not advancing through the ranks and so created women and minority focus groups to address the issue. In the early 1990s, a

diversity task force was created to develop a strategic plan for promoting diversity. Each year this group, comprised of employees at every level and in every department of the company, helps to create diversity action plans. In the past decade, a number of other innovative practices have emerged to promote and maintain diversity within the company. For example, each department is required to submit an end-of-year report measuring how well the unit performed against its diversity objectives. This report details quantitative information on diversity initiatives, including the hiring and promotion of women and minorities, succession planning, development, retention, and training. This approach has resulted in a number of tools designed to support the company's diversity objectives. For instance, all department newsletters now cover diversity issues, employees have access to lecture series on diversity, and a 'Managing Diversity' module is taught at every manager orientation session.

Method

Organizational setting

According to textual information available from the company (e.g., annual reports, internal newsletters), efforts are made to value the talents and skills of each individual. Special emphasis is placed on recognizing the contributions of people from diverse cultures, backgrounds, and lifestyles, and creating environments in which these people feel comfortable and are treated with respect. These efforts are made in order to give the company 'a competitive advantage by harnessing the power that diversity may bring.' According to Thomas and Ely's (1996) three organizational diversity perspectives, such efforts would be aligned with the 'integration and learning' perspective. This perspective suggests that the organization is committed to diversity because it believes that it can learn from the eclectic backgrounds, knowledge bases, and experiences of different people, and can translate this knowledge and learning into positive results. We would like to note that, based on the researchers' experiences in the company and with the data collected, the two other perspectives (discrimination and fairness; access and legitimacy) are also evident in the day-to-day conversations of the company's upper management and in the rhetoric that the top managers use in public forums (e.g., speeches to employees, guest speaking at universities) and there is also much variation across business units, divisions, and even departments. The legal components representative of the 'discrimination and fairness' perspective, for example, were exhibited in numerous meetings of various departments. The 'access and legitimacy' perspective was prevalent in one-on-one interviews with upper-level executives from various divisions and in the public speeches that they made as well. They focused the reasoning for their diversity efforts on the match with their customer base and the markets they wanted to reach. Thus, this company appears to draw on all three of the Thomas and Ely's (1996) perspectives in justifying and managing its diversity efforts. Our empirical data on the contextual variables (see below in the measures section) reiterates this variance within the firm.

Sample

Our sample includes 10 717 individuals in 1528 groups consisting of 3–18 employees. We relied on group process theories regarding group size (e.g., Bettenhausen, 1991; Goodman, Ravlin, & Argote, 1986) to verify that our groups of 3–18 were appropriate for the study of group diversity. We identified

the workgroups using a reporting system developed by the company, as well as the information about the structure of the divisions and departments provided by key senior staff. We verified that these are actual working groups (i.e., they interacted on a day-to-day basis, were task interdependent, identified each other as group members, and were seen by others as workgroups) by interview and observation. This is consistent with our definition of a group (see above) and with group process theories regarding group size (e.g., Goodman et al., 1986). Employees in these workgroups are responsible for monitoring the development and production, sales, marketing, and distribution of the company's products in their respective markets. Many groups are cross-functional and include the representatives from corporate administration, finance, sales, product development, software systems, and manufacturing divisions. The employees, of whom 67.6 percent are male, range in age from 18 to 82 years with a mean age of 41 years. The majority of employees (61.5 percent) are white; 24.6 percent are African American, 9.1 percent are Asian, 4.4 percent are Hispanic, and 0.4 percent are Native American. The level of education ranges from grade school to the PhD level; the modal level is a high school degree. Tenure in the company ranges from less than 1 year to 45 years, with a mean of 9.5 years.

Measures

Diversity

We use two types of group diversity measures that have been widely utilized in past studies (e.g., Jehn et al., 1999; Pelled et al., 1999): one is for categorical variables (race, gender, functional background) and another is for continuous variables (age, level of education, tenure). Following the approach suggested by Ancona and Caldwell (1992) and Teachman (1980), we use the entropy index to measure how group members are distributed across the possible categories of a diversity variable.

$$-\sum_{i=1}^S P_i (\ln P_i)$$

where P represents the fractional share of team members assigned to a particular grouping within a given characteristic and i is the number of different categories represented on a team (Ancona & Caldwell, 1992). We use the coefficient of variation (the standard deviation of the selected attribute divided by its mean) to measure the group diversity for continuous variables (e.g., age, level of education) (Allison, 1978). For example to assess tenure diversity within workgroups, we divided each group's standard deviation of tenure by the group's mean tenure.

Gender was a categorical variable coded as female = 0 and male = 1. Race was a categorical variable coded as white = 1, black = 2, Asian/Pacific Islander = 3, Hispanic = 4, Native American = 5. Age and tenure were continuous variables measured in years. Level of education was a continuous variable; we converted the company codes to numbers 1 through 8 as follows: 1 = some school; 2 = high/trade school graduate; 3 = courses beyond high school; 4 = college courses but no degree; 5 = bachelor degree; 6 = postgraduate courses but no degree; 7 = master's degree; 8 = doctorate degree. Unfortunately, the data on disciplinary background was not available. Functional background was a categorical variable coded as administrative = 1; marketing and customer service = 2; finance = 3; operations = 4.

Workgroup context

To generate measures of our group context variables, we content-analyzed company documents that were part of a human resources-sponsored program designed for managers and supervisors of workgroups to assess employee competencies (i.e., values, goals, skills, and knowledge). In order

for managers and supervisors to complete these assessments, they are provided with a guide that describes multiple competencies (see Appendix for example of competency descriptions). These competencies define the scope of management's objectives and values regarding critical aspects of the workgroup environment. According to Doty et al. (1993), managers and supervisors translate managerial objectives into the actual context of their departments and workgroups. Thus, we believe that this data is appropriate to use for specifying the workgroup context variables because the competencies assessed in the supervisor reports can serve as indirect evidence of current group environments regarding certain cultures, business strategies, and HR practices (see Appendix).

We content-analyzed these supervisor reports based on the following procedure established in prior research (Abrahamson & Hambrick, 1997; Kabanoff, 1997). First, two raters blind to the hypotheses and purpose of the study independently reviewed the guide provided by the company describing each competency. They then sorted the competencies into seven key phrase lists based on relevant organizational theories regarding group cultures, strategies, and HR practices, as well as the concepts used in the company's rhetoric (see Appendix). The level of initial agreement between the two raters was 84 percent. Second, the two raters together reviewed the descriptions and phrase lists of the context variables for each competency, discussed each definition and phrase list until they had a common understanding of it, and then refined the key phrase list for each variable studied. Third, when the key phrase lists were complete, the data was organized by department. Fourth, this data was searched for the words from the key phrase lists using the program MonoConc Pro 2.0 (Barlow, 2000) to obtain frequencies of context-variable phrase occurrence. Finally, to arrive at a score for each workgroup context variable, the percentage of total relevant hits for a particular variable representing each group were summed. This procedure allowed us to make direct quantitative comparisons of groups within various workgroup environments using established computer-aided text analysis techniques successfully employed in past organizational research (e.g., Abrahamson & Hambrick, 1997; Doucet & Jehn, 1997; Kabanoff, 1997).

We therefore rated different strategies, cultures, and HR practices for the context of each workgroup using the above procedure. In particular, we specified three different types of strategies used within the company: (1) growth-oriented strategies, characterized by innovation and flexibility; (2) stability-oriented strategies, focused on creating a stable domain by avoiding growth and risk-taking actions; and (3) customer-oriented strategies, which focus on developing and valuing customer relationships (see Appendix). Cultures of workgroups were specified as: (1) people-oriented cultures, with emphasis on common goals and shared commitment; and (2) competition-oriented cultures, which values autonomy, independence, competition, and achievement. HR practices were specified as: (1) training-oriented practices, focusing on personnel development and employee training, and (2) diversity-oriented practices, focusing on encouragement of a diverse workforce and a supportive diversity environment. See Appendix for the examples of selected key phrases for each group context variable.

Performance

As discussed earlier, workgroup contexts can influence the alignment of actions of diverse employees with performance outcomes. In this study, we used merit-based performance ratings (individual and group level), bonuses, and stock options—the most frequently used pay plans for performance in contemporary organizations (Lowery et al., 2002)—as performance outcomes variables. Performance ratings are the codes associated with an employees' performance review (e.g., 5 refers to employee's outstanding performance, and 1 refers to his or her unsatisfactory performance) and group's performance (e.g., 5 refers to outstanding performance, and 1 refers to unsatisfactory performance). Trained supervisors in this company conduct performance appraisals using predefined criteria and rating scales to gauge actual behavior and worker performance (Drazin & Auster, 1987). Bonus amounts are the actual bonus amounts paid out for the year. The yearly bonus is calculated on total base salary for

the year and includes multiple performance indicators determined by the company. Stock options refer to the number of options awarded. Because bonus amounts and stock options were highly correlated, we further averaged their standardized scores to arrive at our composite bonus measure. In addition, we conducted a series of outlier analyses (Cohen & Cohen, 1983) for our composite bonuses and thus excluded one employee (the CEO) from the analyses.

Controls

We included group size and an employee's salary as control variables. Group size has been shown to be of a great importance for group processes and outcomes (Goodman et al., 1986). Salary can account, at a general level, for the variation in type of work and, more specifically, for the effect of the company's personnel policy in providing merit raises based on an employee's position within the job range (Elvira & Graham, 2003). Both controls were obtained from the archival file data provided by the company.

Results

Table 1 displays the means, standard deviations, and correlations, respectively, among all variables. Regarding correlations between the diversity and performance variables, diversity in age and race are negatively related to all three performance outcomes. Diversity in gender is negatively related to individual and group performance ratings, and is positively associated with composite bonus measure. Tenure diversity is positively related to all performance outcomes. Diversity in functional background is positively related to individual and group performance ratings, but negatively associated with the composite bonus measure. Finally, diversity in level of education is negatively related to individual and group performance ratings.

To consider the significance of the descriptive data on each criterion measure, we conducted supplementary analyses and obtained correlations between employee attributes (means and variances) and all workgroup context and performance outcomes measures. Some of our results indicated that the means and SDs of group tenure and level of education were negatively correlated with customer- and stability-oriented business strategies, while they were positively correlated with growth-oriented business strategies. The means and SDs of group functional background (percentage of employees in marketing and sales) were negatively associated with both types of cultures, while the means and SDs of group functional background (percentage of employees in operations) were positively associated with them. The means of group gender (percentage of males) and group race (percentage of whites) were positively associated (SDs in turn, had negative correlations) with training-oriented HR practices, while they were negatively correlated (SDs in turn, had positive correlations) with diversity-oriented HR practices. The means and SDs of group tenure and level of education were positively associated with all performance outcomes. We further examine the relationships between diversity, workgroup context, and various performance outcomes using hierarchical regression analyses.

Group diversity and performance outcomes moderated by workgroup context

We conducted a series of hierarchical regression analyses to test the moderating effects of context on the diversity–performance link. Step 1 of the hierarchical regression contains control variables (group size and salary), Step 2 includes the main effects of the group diversity variables, Step 3 includes all seven context variables, and Step 4 includes seven interactions by diversity variable for each context

Table 1. Means, standard deviations, and zero-order correlations among variables

Correlations	Mean (N = 10717)	SD (N = 10717)	Mean (N = 1528)	SD (N = 1528)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Group Size	9.33	4.53	7.01	4.03	—	-0.09**	0.15**	0.24**	0.09**	0.15**	0.10**	0.03	0.02	0.05*	-0.06*	0.03	0.02	0.02	0.01	-0.07*	-0.11**
2. Salary	35 407.46	26 420.55	36 517.07	22 633.99	-0.08**	—	-0.29**	-0.18**	-0.06*	0.07**	0.01	-0.05	-0.50**	0.62**	-0.31**	0.35**	0.52**	-0.11**	0.04	0.59**	0.60**
3. Diversity in Age	0.23	0.08	0.23	0.09	0.14**	-0.28**	—	0.18**	0.14**	0.15**	0.05*	0.04	0.17**	-0.28**	0.11**	-0.24**	-0.20**	0.07**	-0.25**	-0.09**	
4. Diversity in Race	0.55	0.39	0.50	0.39	0.24**	-0.16**	0.20**	—	0.13**	0.04	0.00	0.12**	0.15**	-0.20**	0.01	-0.25**	-0.12**	-0.11**	0.15**	-0.25**	
5. Diversity in Gender	0.46	0.25	0.45	0.27	0.07**	-0.07**	0.19**	0.16**	—	0.02	-0.02	0.03	0.01	-0.18**	0.04	-0.23**	-0.12**	-0.23**	0.14**	-0.14**	
6. Diversity in Tenure	0.59	0.27	0.57	0.28	0.12**	0.07**	0.12**	0.00	0.01	—	0.11**	0.05*	-0.09**	0.13**	0.01	0.12**	0.11**	0.06*	-0.05*	0.13**	
7. Diversity in Function	0.39	0.29	0.37	0.31	0.06**	0.05**	0.02*	-0.06**	-0.04**	0.12**	—	-0.02	-0.04	-0.05*	0.19**	0.15**	-0.08**	0.09**	-0.19**	0.16**	
8. Diversity in Education	0.39	0.21	0.39	0.27	0.05**	-0.06**	0.07**	0.16**	0.04**	0.02	-0.05**	—	0.07**	-0.12**	-0.06*	-0.18**	0.05	-0.10**	0.14**	-0.10**	
9. Customer-Oriented Strategies	8.09	0.69	8.09	0.68	0.00	-0.36**	0.20**	0.14**	0.01	-0.10**	-0.09**	0.10**	—	-0.55**	0.00	-0.57**	-0.44**	0.55**	0.15**	-0.39**	
10. Growth-Oriented Strategies	6.14	1.72	6.09	1.70	0.07**	0.48**	-0.34**	-0.22**	-0.21**	0.15**	-0.02	-0.13**	-0.49**	—	-0.67	0.50**	0.83**	-0.10**	0.19**	0.53**	
11. Stability-Oriented Strategies	4.92	0.71	4.94	0.70	-0.07**	-0.23**	0.13**	0.03**	0.03*	-0.01	0.17**	-0.04**	-0.04**	-0.68**	—	0.24**	-0.72**	0.27**	-0.79**	-0.11**	
12. People-Oriented Cultures	11.82	1.96	11.79	1.96	0.04**	0.29**	-0.31**	-0.25**	-0.27**	0.17**	0.17**	-0.21**	-0.58**	0.51**	0.23**	—	0.30**	0.26**	-0.66**	0.52**	
13. Competition-Oriented Cultures	3.14	0.93	3.13	0.98	0.04**	0.41**	-0.26**	-0.14**	-0.12**	0.12**	-0.05**	-0.07**	-0.44**	0.86**	-0.73**	0.32**	—	-0.26**	0.47**	0.40**	
14. Training Focused HR Practices	4.78	0.84	4.76	0.81	-0.01	-0.04**	-0.09**	-0.11**	-0.28**	0.08**	0.07**	-0.09**	0.58**	-0.06**	0.20**	0.22**	-0.25**	—	-0.55**	0.14**	
15. Diversity Focused HR Practices	3.97	0.41	3.96	0.42	0.02*	0.00	0.10**	0.14**	0.19**	-0.08**	-0.19**	0.15**	0.16**	0.19**	-0.79**	-0.66**	0.45**	-0.51**	—	-0.21**	
16. Performance Ratings	3.20	0.80	3.21	0.59	-0.05**	0.44**	-0.22**	-0.19**	-0.12**	0.10**	0.11**	-0.10**	-0.26**	0.37**	-0.12**	0.37**	0.32**	0.09**	-0.12**	—	
17. Composite Bonus Measure	-0.04	0.75	-0.0009	0.56	-0.06**	0.56**	-0.05**	-0.04**	0.02*	0.04**	-0.03**	-0.003	-0.14**	0.14**	-0.08**	0.03**	0.15**	-0.07**	0.06**	0.13**	

* $p < 0.05$; ** $p < 0.01$.

Individual-level correlations are reported in the lower triangle.

Group level correlations are reported in the upper triangle.

Table 1a. Hierarchical multiple regressions for group diversity predicting performance outcomes moderated by context (main effects)

	Group performance rating ($N = 1528$)	Individual performance rating ($N = 10\,717$)	Composite bonus ($N = 10\,716$)
Step 1: Controls			
Group size	-0.009	-0.013	-0.02*
Salary	0.591***	0.442***	0.555***
R^2	0.509	0.197	0.322
Adjusted R^2	0.504	0.197	0.322
F	399.027***	1014.456***	2541.801***
Step 2: Diversity main effects			
Age Diversity (A)	-0.077***	-0.102***	0.119***
Race Diversity (R)	-0.127***	-0.087***	0.033***
Gender Diversity (G)	-0.078***	-0.064***	0.037***
Tenure Diversity (T)	0.098***	0.079***	-0.012
Function Diversity (F)	0.143***	0.076***	-0.051***
Education Diversity (E)	-0.060**	-0.045***	0.025**
Change in R^2	0.068	0.042	0.022
F change	28.496***	76.703***	57.944***
R^2	0.418	0.239	0.331
Adjusted R^2	0.415	0.238	0.331
F	132.264***	325.057***	663.588***
Step 3: Context main effects			
Customer-oriented strategies (CusBS)	-0.084	-0.023	-0.020
Growth-oriented strategies (GrowBS)	0.256	0.276**	0.122
Stability-oriented strategies (StabBS)	0.194	0.177**	0.423***
People-oriented cultures (PeoOC)	0.051	-0.003	-0.050
Competition-oriented cultures, (CompOC)	0.126	0.116	-0.059
Training-oriented HR practices (TraHR)	0.215	0.119	0.097
Diversity-oriented HR practices (DivHR)	0.018	-0.032	0.401***
Change in R^2	0.091	0.054	0.028
F change	38.886***	90.507***	67.309***
R^2	0.509	0.293	0.360
Adjusted R^2	0.504	0.292	0.359
F	101.397***	228.732***	400.667***

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

interaction (e.g., gender diversity \times diversity-oriented HR practices, gender diversity \times training-oriented HR practices, etc). Table 1a presents the hierarchical regression analyses that test the main effects of group diversity and context on performance outcomes. The regressions are continued in Tables 1b1 through 1b3, which present the interaction effects on each performance outcome variable.

Hypothesis 1, predicting that diverse groups would be more likely to have higher levels of performance in the workgroup contexts that emphasize people-oriented cultures than in contexts that do not emphasize people-oriented cultures, was partially supported. As shown in Table 1b3, this type of culture moderated the effects of group diversity in functional background on composite bonuses; members of these groups were paid higher amounts of composite bonuses in the departments that cultivated people-oriented cultures. Unlike what was expected, groups diverse in level of education had lower amounts of composite bonuses in contexts that focused on people-oriented cultures than in those without such emphasis (see Table 1b3). Furthermore, while the interaction coefficient between age diversity and people-oriented cultures appeared significant and in the predicted direction, we do not have sufficient evidence to conclude that this is a statistically significant result based on Cohen and Cohen's (1983) regression significance standards as the F change statistic failed to reach statistical significance.

Table 1b1. Step 4, group diversity variables \times context variables interactions on group performance ratings, $N = 1528$

Step 4	Group performance					
	(Age \times Context)	(Gender \times Context)	(Race \times Context)	(Tenure \times Context)	(Function \times Context)	(Education \times Context)
Var ^a \times CusBS	-1.746	-4.011	-0.141	-3.479	5.748	3.588*
Var \times GrowBS	-0.480	-1.266	-0.150	-1.142	1.866	0.222
Var \times StabBS	-1.153	-1.500	-0.233	-1.418	2.551	-0.714
Var \times CompOC	0.227	-0.273	-0.015	-0.418	0.734	0.475
Var \times PeoOC	-0.439	0.842	0.463	0.411	-1.741	-0.463
Var \times DivHR	-1.308	1.775	0.423	1.478	-3.264	-3.920
Var \times TraHR	0.214	1.833	0.113	1.061	-2.443	-1.850*
Change in R^2	0.003	0.006	0.001	0.006	0.003	0.005
F change	1.617	2.653*	0.580	2.544*	1.134	1.977
R^2	0.446	0.496	0.495	0.496	0.507	0.494
Adjusted R^2	0.442	0.490	0.489	0.491	0.501	0.488
F	100.869***	84.586***	84.312***	84.813***	88.531***	84.022***

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.^a'Var' stands for a certain group diversity variable (e.g., Var = age diversity, gender diversity). See column heading for identification of the diversity variable that corresponds to the interaction specified in the row heading.

Table 1b2. Step 4, Group diversity variables \times context variables interactions on individual performance ratings, $N = 10717$

Step 4	Individual performance					
	(Age \times Context)	(Gender \times Context)	(Race \times Context)	(Tenure \times Context)	(Function \times Context)	(Education \times Context)
Var ^a \times CusBS	1.213	-1.998	-0.595	-1.870	1.137	1.233
Var \times GrowBS	0.325	-0.591	-0.267	-0.709	0.412	-0.019
Var \times StabBS	0.496	-0.680	-0.646	-0.814	0.597	-0.596*
Var \times CompOC	0.222	-0.256	0.018	-0.193	0.210	0.153
Var \times PeoOC	-0.247	0.689	0.139	0.240	-0.759	-0.202
Var \times DivHR	-1.435	1.357	-0.424	0.739	-0.994	-1.664
Var \times TraHR	-0.614	0.943	0.166	0.554	-0.540	-0.731
Change in R^2	0.002	0.002	0.001	0.002	0.002	0.001
F change	3.739***	2.699**	1.863	3.662**	2.793	1.807
R^2	0.288	0.287	0.289	0.288	0.292	0.287
Adjusted R^2	0.286	0.286	0.288	0.286	0.291	0.285
F	196.487***	195.883***	197.757***	196.568***	200.917***	195.317***

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.^a'Var' stands for a certain group diversity variable (e.g. Var = age diversity, gender diversity). See column heading for identification of the diversity variable that corresponds to the interaction specified in the row heading.

Table 1b3. Step 4, group diversity variables \times context variables interactions on composite bonus measure, $N = 10716$

Step 4	Composite bonus measure					
	(Age \times Context)	(Gender \times Context)	(Race \times Context)	(Tenure \times Context)	(Function \times Context)	(Education \times Context)
Var ^a \times CusBS	-1.945	1.511	0.995	-0.615	-0.188	1.325*
Var \times GrowBS	-0.662*	0.164	0.004	0.065	-0.672*	0.407**
Var \times StabBS	-1.206**	-0.184	-0.506	0.058	-1.231***	0.039
Var \times CompOC	-0.356	0.234	0.094	-0.212	-0.140	0.388
Var \times PeoOC	0.895*	-0.494	-0.097	0.585	0.951*	-0.615*
Var \times DivHR	1.568	-1.953*	-1.349	0.991	-0.088	-2.590**
Var \times TraHR	0.759	-0.798*	-0.452	0.325	-0.036	-0.990**
Change in R^2	0.001	0.001	0.001	0.003	0.003	0.005
F change	1.554	1.909	1.701	7.206***	8.337***	11.065***
R^2	0.357	0.353	0.353	0.356	0.359	0.357
Adjusted R^2	0.356	0.352	0.352	0.355	0.358	0.359
F	349.638***	343.782***	124.904***	347.661***	351.882***	349.669***

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.^aVar' stands for a certain group diversity variable (e.g. Var = age diversity, gender diversity). See column heading for identification of the diversity variable that corresponds to the interaction specified in the row heading.

Hypothesis 2, predicting that diverse groups would be more likely to have lower levels of performance in departments with competition-oriented cultures than in contexts that do not emphasize competition-oriented cultures, was not supported.

Hypothesis 3, predicting that diverse groups would be more likely to have higher levels of performance in workgroup contexts that pursue growth-oriented business strategies than in contexts that do not pursue growth-oriented business strategies, was partially supported. Growth-oriented strategies moderated the effects of group diversity in level of education on composite bonuses; this type of diversity was more beneficial in departments with a strong focus on growth-oriented strategies than in those without that focus (see Table 1b3). Unlike what was expected, groups diverse in functional background were awarded lower amounts of composite bonuses in contexts that focused on growth-oriented strategies than in those without such emphasis. In partial support of Hypothesis 4, predicting that diverse groups would be more likely to have lower levels of performance in workgroup contexts that pursue stability-oriented business strategies than in contexts that do not pursue stability-oriented business strategies, we found that members of the groups diverse in functional background were more likely to receive lower composite bonuses in departments with a focus on stability-oriented business strategies (see Table 1b3). Hypothesis 5, predicting that diverse groups will be more likely to have higher levels of performance in workgroup contexts that pursue customer-oriented business strategies than in contexts that do not pursue customer-oriented business strategies, was partially supported. Groups diverse in level of education were awarded higher amounts of composite bonuses within the departments that focused on customer-oriented strategies (see Table 1b3) than in the departments without such emphasis.

Hypothesis 6 predicted that diverse groups would be more likely to have higher levels of performance in workgroup environments that implemented training-oriented human resource practices than in contexts that did not implement training-oriented human resource practices. As opposed to what was expected, groups diverse in level of education were awarded lower amounts of composite bonuses within the departments with an emphasis on training-oriented HR practices (see Table 1b3). Hypothesis 7 predicted that diverse groups would be more likely to have higher levels of performance in workgroup contexts that implemented diversity-oriented human resource practices than in contexts that did not implement diversity-oriented human resource practices. Again, unlike what was expected, we found that diversity-oriented HR practices did moderate the effects of group diversity in level of education on composite bonuses, such as members of these groups were awarded lower amounts of composite bonuses in the departments that implemented the diversity-oriented HR practices (see Table 1b3).

Discussion

In this field study, we examine the moderating effects of workgroup contexts on the relationship between group diversity and various performance outcomes using a sample of 1285 workgroups from a *Fortune* 500 information-processing company. We add to the literature on group diversity by looking at the environments of workgroups with respect to their specific cultures (people- or competition-oriented), strategies (growth-, stability-, or customer-oriented), and HR practices (training- or diversity-oriented).

Discussion of results

Our results revealed that members of groups diverse in functional background were more likely to have higher levels of composite bonuses in the departments that cultivated people-oriented organizational

cultures. This is consistent with our predictions and suggests that people-oriented workgroup environments emphasizing collectivity and group work can actually facilitate the alignment of actions of diverse employees with desired performance outcomes. One possible explanation for this effect is that group members in such environments may be less likely to categorize themselves based on their functional background and accompanying social status. They are more likely to be concerned with their group success (Workman, 2001), to recognize the contributions of all members regardless of their area of expertise, to experience high-quality information exchanges, and to exhibit less withdrawal behaviors. As a result, group members in such environments may generate more sales, shorter response times, less error rates, and more customer satisfaction and quality—performance aspects typically associated with bonuses (Lowery et al., 2002; Thompson, 2004).

We found no results regarding diverse groups operating in competition-oriented cultural environments. One possible explanation for why competition-oriented cultures did not moderate the effect of group diversity on performance is that the individualistic values (which characterize competition-oriented cultures) can be inherently in conflict with the synergy usually generated out of group work. For example, from supplementary textual information made available by the company, we found that group members in competition-oriented environments believe that their ‘culture of ownership’ is what drives them to success. A call for the culture of competition and ownership may essentially promote a sense of ‘self’ above and beyond a collective sense of ‘we.’ Furthermore, members within such contexts can be seen as a constellation of individuals working independently with only necessary and minimal interaction with one another. The theories explaining workgroup interaction all assume that negative effects of diversity can be attributed to conflicts that arise from negative stereotypes or biases and escalate as group members interact within their group (Williams & O’Reilly, 1998). Perhaps, in such environments (e.g., competitive, individualistic), there may not be sufficient conditions for conflicts to arise and affect outcomes negatively due to this minimal interaction among group members.

An alternative explanation for the absence of a competitive culture effect is that it is possible that certain structural or job characteristics (e.g., Loher, Noe, Moeller, & Fitzgerald, 1985) may affect the way in which culture moderates the relationship between diversity and performance. For example, employees in some extremely profit-oriented departments (e.g., sales) working in competitive group environments may have more room to be different and focus on individual accomplishments than those in more bureaucratized departments (e.g., administrative or accounting), but working in otherwise identical groups. While the environment may be competitive in both cases (for example, in sales a competition culture may foster competitive attitudes over the clientele, whereas in administrative departments such a culture may reflect one’s desire to retain his/her job), each unit’s competition culture is a function of its respective job settings. As such, an employee in an administrative department may value diversity less than an employee in a sales department if the specific job criteria in the administrative departments are not directly tied to diversity. Future research should investigate the resulting impact of competition culture *and* job characteristics on the relationship between group diversity and outcomes.

Regarding the effects of strategic environments, we found that groups diverse in level of education were more likely to have higher levels of composite bonuses in the departments that pursued growth-oriented business strategies than in those that lacked such focus. This finding supports our hypothesis, predicting that diverse groups will perform better in work environments that focus on creativity and innovation than in those that do not. A possible explanation is that growth-oriented groups need to embrace diversity as a resource to further fuel creativity and innovation of their groups, on which they depend for success. We further found that groups diverse in functional background performed worse in stability-oriented strategic environments than in environments that did not focus on stability and efficiency. Perhaps such groups either discourage diversity or prefer not to embrace it so that they may better maintain the stable status quo that allows them to successfully strive for peak efficiency. Thus,

when a group composed of, for example, functionally diverse members operates in stability-oriented work environments, the broad scope of members' functions and experience might derail a group from its track, thereby resulting in lower performance. Finally, we found that group members diverse in level of education received higher amounts of composite bonuses in environments that emphasized customer-oriented business strategies than in those that did not. These results are consistent with our initial argument that employees in these groups can better understand the preferences of a broader range of customers and align their marketing efforts and product design with customers' preferences.

Some more puzzling results were obtained with respect to the moderating effects of training- and diversity-oriented HR practices. Contrary to what was expected, groups diverse in level of education performed worse in environments with an emphasis on training- and diversity-oriented HR practices. A possible explanation is that when these groups are placed in environments that focus on training-oriented and diversity HR practices, the costs of such HR practices may exceed the benefits produced, leading to a net reduction in performance. It may also be that groups that were the focus of training and diversity practices had correspondingly higher expectations placed on them, and so their performance indicators are low because they were judged against this higher standard. Another explanation is that these HR practices might be introduced for groups in which members are viewed as needing such support. For example, an organization may make an effort to compensate for educational or skill deficiencies of group members by offering specialized training that brings employees up to the required standards (Moskos & Butler, 1996). Or a group may be identified as needing to focus on diversity because it has problems, thus suggesting an already existing negative relationship or low performance selection criteria. Future research should examine why certain groups are selected for specific HR practices and what the implications are for implementing such programs and practices in these groups.

Our results also show no moderating effects of workgroup contexts for group diversity in age, tenure, gender, and race.¹ One possible explanation for these effects can be seen in the nature of our workgroups: already existing groups with relatively long life spans. In such groups the differences in age, race, gender, and tenure may have become less relevant and important over time as group members cooperate with each other and spend a substantial amount of time performing together in specific contexts. For example, Harrison, Price, Gavin, and Florey (2002) have shown that as group members collaborate, the effects of surface-level diversity (e.g., gender, race) on group outcomes become much weaker than the effects of deep-level diversity (e.g., values, personalities).

Limitations of the study

The strengths of the current research (e.g., data collected from an actual workplace setting, multiple methodologies) are accompanied by potential weaknesses. Some limitations of this study are common in demography studies that use archival file data. For instance, one limitation of this study is that the data on a person's place of birth was not available, and thus our operationalization of race may be limited. The background and experiences of a white person born and raised in Russia differ from those of one born in the United States. In this study we excluded the sample of foreign employees working overseas and limited our analyses to the sample of employees working in the United States; however, we could not check whether the latter employees were born and raised in the United States. Second, while we were able to construct reliable measures of workgroup context variables using content analysis of company documents, no direct measures of these variables were available. Future research should use employee survey data and interviews that allow a more thorough understanding of how

¹Please note that we considered five racial categories (coded as white = 1, black = 2, Asian/Pacific Islander = 3, Hispanic = 4, Native American = 5).

workgroup context shapes effects of group diversity. Next, as is common in any archival study, our results may be somewhat limited because of missing data. For example, due to turnover, new hires, and non-responsive employees, we could not attain complete responses from all group members in order to fully specify our context variables. These are just a few limitations that are often associated with field studies using archival data collections. We believe our study has an advantage, however, over many archival studies because we did have useful and relevant text data on workgroup context, something often missing in large archival datasets.

We also realize that our performance measures may have different antecedent predictors. For example, composite bonuses can be based on 'hard' performance numbers such as sales, response times, customer satisfaction, quality, error rates, etc., while individual performance ratings may indicate a more subjective perception of an employee's performance by his or her supervisor, who may conform to certain types of norms and values. This might be one reason we obtained different levels of significance in effects when testing hypotheses predicting the effects of diversity variables on such performance outcomes moderated by the workgroup context. Unfortunately, we do not have the detailed information on the nature of our performance outcomes measures (e.g., to what extent bonuses or stock options are based on quality, sales, etc.; what criteria are used for the evaluation of employee performance) to provide a more elaborate discussion of the effects we observed, but suggest that future research take this into account.

Future research directions

In addition to some of the future research directions we suggest in our discussion of this study's limitations, we would like to mention a few more general directions for future research on group composition and context. Overall, our findings are consistent with past diversity research in that there are mixed main effects of the different diversity characteristics on different performance outcomes (see Table 1a; cf. Williams & O'Reilly, 1998). To remedy the shortcomings of past diversity research and the inconsistency in results, further developments of alternative ways in which group diversity can be conceptualized and operationalized are needed. One of the most intriguing advancements along these lines comes from a theory of group faultlines introduced by Lau and Murnighan (1998). Group faultlines occur in groups when a group splits into two subgroups based on the alignment of one or more demographic attributes (e.g., race and gender). Past diversity studies have often ignored individuals' multiple demographic characteristics (e.g., gender, race, age) and the alignment of these characteristics across group members, which can be crucial for understanding the effects of group composition on workgroup context and outcomes. The theory of group faultlines allows group composition researchers to make predictions about group interactions based on multiple member demographic characteristics and their alignment within the group. While the faultline construct is an intriguing new conceptualization of group composition, future research should gear towards its empirical testing to help explain the mixed results past research has found between diversity and performance. In addition, this theory offers interesting avenues for the study of the effects of group and organizational context on the group composition–performance relationship.

Furthermore, the current study considers the influence of contextual variables separately and assumes the independent effect of each of these variables. However, we agree with Richard (2000) and believe that future multilevel research should investigate the backdrop of business strategies, human resource practices, and cultures as a system of combined contextual factors. This research should be done within a configurational framework that would seek the most effective alignment of human resource practices, business strategies, and organizational cultures for group diversity to be beneficial. In addition, our findings suggest that we should look not only at workgroup environments

where a group operates, but also at the processes occurring *within* the group. For example, past theory and research have often based effects of diversity characteristics on the interpersonal interactions and specific group processes such as communication and conflict when defining the link between group diversity and performance (Jehn et al., 1999; Williams & O'Reilly, 1998).

Implications for managers

This study is aimed at assessing the conditions and providing evidence for managers of how to achieve higher levels of performance through effective management of a diverse workforce. Our findings suggest that managers may capitalize on certain types of demographic diversity in groups if they take into account the appropriate workgroup environment. For instance, an ideal workgroup environment for groups that are diverse in functional background should emphasize a sense of group identity and common fate, and foster good relationships. Managers of such groups should avoid placing their groups in a stability-oriented environment with an extremely high focus on efficiency because this may interfere with employees' productivity. In cases where diverse groups already operate in stable environments, managers may leverage diversity by encouraging and implementing common, specific, and status-quo task goals so that the differences present are focused on a team meta-goal of maintaining stability and efficiency. Our findings further suggest that diversity in level of education can be beneficial in workgroup environments that support customer-focused values and emphasize change and innovation. Managers of such groups should consider creating a more flexible, customer-oriented environment in which these diverse group members are given sufficient time to embrace and capitalize on their differences. In sum, we suggest that companies can improve the performance of their groups and individuals by establishing and promoting specific work environments in which a particular type of diverse group can thrive.

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Author biographies

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Appendix: Selected key phrases and descriptions of competencies for workgroup context variables

1. Growth-oriented strategies:

Examples of key phrases (competencies): *Creativity, Risk Taking, Change Champion*

Description of a competency (e.g. creativity): Easily generates new ideas and sees interrelationships among issues, able to put information together that doesn't look like it goes together; displays 'out-of-the-box' thinking; uses existing resources in new ways to achieve results.

Behaviors:

- Approaches problems with curiosity and open-mindedness
- Stimulates creative ideas from others
- Generates innovative ideas and solutions to problems
- Uses existing resources in innovative ways to achieve results

2. Stability-oriented strategies:

Examples of key phrases (competencies): *Quick Decision Analysis, Business Acumen*

Description of a competency (e.g., quick decision analysis): Make decisions quickly and efficiently under tight deadlines and pressure when needed, applies intellectual rigor and honesty in making decisions.

Behaviors:

- Makes timely decisions
- Makes sound decisions based on adequate information
- Knows when to stop analyzing and make a decision
- ‘Thinks on feet’ to make decisions quickly and efficiently

3. Customer-oriented strategies:

Examples of key phrases (competencies): *Customer Focus, Ethics & Values*

Description of a competency (e.g. customer focus): Develops strategy, product and service definitions based on rigorously identified customer needs; continually searches for ways to bring value to customer; anticipates future needs that the customer may not have identified yet.

Behaviors:

- Meets commitments to customers
- Seeks feedback from customers
- Communicates in the customers language
- Develops product and service offerings on rigorous analysis of customers needs

4. People-oriented cultures:

Examples of key phrases (competencies): *Creating Followership, Relationship Building*

Description of a competency (e.g., creating followership): Inspires others to follow toward a common goal; creates enthusiasm and desire to excel; fully engages others; builds confidence; moves the organization ahead as one entity rather than separate parts.

Behaviors:

- Fosters the development of a common vision
- Conveys trust in people’s competence do their jobs
- Creates an environment that makes work enjoyable
- Pulls everyone together for organization to be successful.

5. Competition-oriented cultures:

Examples of key phrases (competencies): *Courage and Accountability, Competitive Thinker*

Description of a competency (e.g., courage and accountability): Puts self on the line to deal with important problems; willing to be confrontational and engage in healthy conflict; stands firm when necessary; takes ownership for decisions and actions; admits mistakes willingly.

Behaviors:

- Takes a stand and resolves important issues
- Acts decisively

- Is assertive
- Accepts responsibility for own mistakes

6. Training-oriented human resource practices:

Examples of key phrases (competencies): *Communicator, Coach and Develop*

Description of a competency (e.g., communicator): Practices and fosters open communication and interactive listening; communicates clearly both orally and in writing in formal and informal settings; presents well-structured, organized presentations.

Behaviors:

- Delivers well-prepared presentations
- Clearly expresses ideas and concepts in writing
- Adapts communications to fit the situation/audience

7. Diversity-oriented human resource practices:

Examples of key phrases (competencies): *Valuing diversity*

Description of a competency (e.g., valuing diversity): Creates a work environment that reflects respect for everyone's contributions; demonstrates and fosters respect for each person whatever that person's background.

Behaviors:

- Values the talents and skills of others
- Recognizes and utilizes the contributions of people from diverse backgrounds
- Creates an environment in which people from diverse backgrounds feel comfortable
- Helps people from diverse cultures/backgrounds/lifestyles succeed