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**WHAT YOU SEE IS WHAT YOU GET:  
OBSERVING AND MODELING THE  
RELATIONSHIP BETWEEN READILY  
IDENTIFIABLE AND NON-IDENTIFIABLE  
HETEROGENEITY CHARACTERISTICS,  
GROUP EFFICACY, AND TEAM OUTCOMES**

**CEO PUBLICATION  
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**January 2001**

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Running Head: What you see is what you get

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**ABSTRACT**

In this study we observed and examined teams within a sample of 57 bank branches in order to better understand the consequences of two types of team heterogeneity: readily identifiable (gender and ethnicity) and non-readily identifiable (collectivism cultural values and tenure). Within these teams, collectivism heterogeneity had a curvilinear relationship with group efficacy: teams with both highest and lowest levels of collectivism heterogeneity were higher in group efficacy. Teams with higher tenure heterogeneity had higher group efficacy. Teams higher in gender heterogeneity and lower in ethnicity heterogeneity had higher team reputation among customers. In terms of outcomes, teams with higher group efficacy were significantly more effective. Mixed support was found for the mediating role of group efficacy in the relationship between heterogeneity and effectiveness. Implications for theories of social cognition, group development, and international management are discussed.

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Given the increase in the use of work teams across diverse organizational contexts, many researchers and practitioners have become intrigued by the relationship between team heterogeneity and team effectiveness (see Jackson, May, & Whitney, 1995 and Milliken & Martins, 1996 and for a review). Team heterogeneity captures the extent to which team members are different with respect to individual characteristics (Milliken & Martins, 1996). Unfortunately, findings regarding heterogeneity obtained to date have been equivocal and complex. The relationship between team heterogeneity of many different types (e.g., with regard to culture, tenure, gender, or education) and team effectiveness is sometimes positive (Hoffman & Maier, 1961; Maznevski & DiStefano, 1996; Triandis, Hall & Ewen, 1965), negative (Hoffman, 1959; Feldman, Sam, McDonald & Bechtel, 1980), or mixed based on the type of heterogeneity (Bantel & Jackson, 1989; Simons, 1995). We argue that the relationship between team heterogeneity and effectiveness is indirect and mediated by an important team characteristic – group efficacy beliefs.

Group efficacy is the extent to which a group believes that it can accomplish its tasks successfully through concerted effort (Gibson, 1999). Researchers have established that group efficacy is a meaningful and measurable group attribute and that levels of group efficacy vary even among teams that appear to have equal skills, abilities and resources (Campion, Medsker, & Higgs, 1993; Earley, 1993; Guzzo, Yost, Campbell & Shea, 1993; Zander & Medow, 1963). Group efficacy is both a cognitive product arising out of group interaction, and a motivational force in teams. Because group efficacy signals what a group thinks it can do, level of group efficacy is often related to how much effort the group expends (Bandura, 1997). Perhaps even more importantly, research has shown positive relationships between group efficacy and many

aspects of team effectiveness (Campion, et al. 1993; Gibson, 1999; Guzzo, et al. 1993; Klimoski & Mohammed, 1994). As such, group efficacy may serve as an important link between inputs of various types in teams--including team heterogeneity--and subsequent team outcomes, but this link has yet to be substantiated in systematic field research.

To begin exploring this link, we observed in their natural setting work teams that varied in the degree to which they were heterogeneous on a number of dimensions. Our observations led us to believe that differences among team members, particularly in terms of gender, ethnicity, cultural values, and tenure, affect group efficacy, and that group efficacy, in turn impacts team effectiveness and team reputation. Our model is summarized in Figure 1. This framework reflects our proposition that team heterogeneity, in and of itself, is not directly related to team effectiveness, but instead is mediated by group efficacy. We argue that when heterogeneity in terms of gender, ethnicity, cultural values and tenure is low, group efficacy will be high. Subsequently, group efficacy will be positively related to team effectiveness and reputation. Below, each component of our model is described in greater detail as we propose hypotheses to be tested in a comprehensive empirical investigation.

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Insert Figure 1 about here  
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## **TEAM OUTCOMES**

Organizations increasingly employ teams as the basic mechanism for accomplishing work (Mohrman, Cohen, & Mohrman, 1995). Teams are a special sub-category of groups, in which members share common goals, accountability, and on-going interdependence (Gibson, 2000). There are as many different kinds of work teams as there are combinations of individual personalities, skills, motivation, and creativity. Beyond the individual characteristics of team

members, there are characteristics unique to a team stemming from the synergistic quality of interaction between individual members. The level of group efficacy in teams is one such characteristic. In this paper, we are particularly interested in how group efficacy mediates compositional effects on team effectiveness and team reputation.

### **Team Effectiveness**

Group efficacy beliefs have a motivational impact on teams (Bandura, 1977). They supply a prescriptive formula for action. They often set the rules for how to act, specify goals that may be pursued, and indicate the means used to achieve these goals. As such, they may ultimately determine the direction, intensity, and persistence of group behavior (Bandura, 1986; Bar-Tal, 1990). More specifically, research suggests that collective cognitions such as group efficacy beliefs are associated with subsequent relations among group members (Zander & Medow, 1963; Larson & LaFasto, 1989); group solidarity and negotiating strength (Sayles, 1958); the group's ability to adapt (Larson & LaFasto, 1989); and group persistence and effort (Bandura, 1986; Hodges & Carron, 1992). These proximal outcomes often have implications for subsequent effectiveness.

Indeed, research over the past twenty years has demonstrated that teams with a strong collective belief in their ability are more effective. For example, Shea & Guzzo found a positive correlation between group potency beliefs and teams' customer service effectiveness (Shea & Guzzo, 1987). More recently, several other studies found support for the positive relationship between group efficacy beliefs and effectiveness in numerous organizational settings, including financial service teams (Campion et al., 1993), manufacturing teams (Little & Madigan, 1994), and hospital nursing teams (Gibson, 1999). Perhaps the strongest evidence for the importance of group efficacy was obtained by Prussia & Kinicki (1996). They found a significant positive

relationship between group efficacy and subsequent team effectiveness among their sample of brainstorming teams. Furthermore, group efficacy completely mediated the relationship between effectiveness feedback and team effectiveness. Following this body of previous research, we begin with the following basic hypothesis:

**Hypothesis 1:** Group efficacy is positively related to team effectiveness.

### **Team Reputation**

In addition, we also argue that group efficacy has an important relationship with a second team outcome – team reputation. We define team reputation as an opinion about a team formed by a team or individual who has interaction with the team. Team reputations are formed when others outside the team, such as customers or peers, engage in activity with the work team. If, for example, a customer has several experiences over time in which high team effectiveness is demonstrated, the customer is likely to have a lasting positive impression. Over time, this reputation will preserve the customer relationship. Thus reputation is an important outcome for teams because it encourages subsequent interaction. Teams with favorable reputations are likely to earn more repeat business. For example, it is important for a law firm's municipal bond team to have a positive reputation among its customers, including municipal bond sellers and buyers, in order to maintain the often tenuous relationships between provider and client.

Recent research using social network analysis has yielded information regarding the formation of reputations within the team context. In their study, Kilduff and Krackhardt (1994) found that reputation opinions were formed based on who individuals associated with, as opposed to their title or competencies. Thus, a team may have a reputation based on member associations, and team reputation is developed, in part, through impression management with those who interact with a team. A team with high group efficacy is likely to engage in more



impression management and as a result, will have a more positive reputation (Hackman, 1990).

Preliminary evidence supports this notion, suggesting that group efficacy is positively related to overall evaluations of teams by outsiders (Zander & Medow, 1963; Guzzo et al., 1993); outsiders' expectations of teams (Sayles, 1958; Hackman, 1990), and teams' future work opportunities (Hackman, 1990). Based on this evidence, we hypothesize that:

**Hypothesis 2:** Group efficacy is positively related to team reputation.

### **TEAM HETEROGENEITY**

Of the range of potential sources of heterogeneity in teams, we argue that gender, ethnicity, cultural values and tenure are the most critical. This is primarily true because these characteristics are most directly linked with collaborative information processing in teams (Jackson et al. 1995; Pelled, 1996; Pelled, Eisenhardt & Xin, 1999). Collaborative information processing allows combination of a broader array of data and more innovative outcomes, and is a critical competency in most work teams in the growing segment of knowledge and service based organizations. Indeed, the benefits derived from collaborative information processing is the very reason many organizations establish teams (Mohrman, Cohen, & Mohrman, 1995).

In their review of diversity research over the past 40 years, Williams and O'Reilly (1998) note that research examining differences in gender, age, ethnicity and tenure demonstrate consistent group process problems in particularly heterogeneous teams. Recently, however, Earley and Mosakowski (2000) found that teams with members from the same cultural background worked best together, while teams high in cultural heterogeneity also worked well together through developing a third "hybrid" culture. Teams with moderate heterogeneity had the most trouble communicating and establishing rapport, and were the least effective. Thus the

systematic impact of heterogeneity has yet to be resolved. We focus on two general categories of heterogeneity: readily identifiable and non readily identifiable characteristics (Jackson et al. 1995).

### **Readily Identifiable Heterogeneity Characteristics**

The first general category of heterogeneity characteristics are easily detected based on visible observation. We argue that the primary underlying mechanism by which these characteristics influence team process and outcomes is through attitudes formed based on similarity and attraction. We draw upon these theoretical frameworks below as we outline specific hypotheses.

**Gender heterogeneity.** A key source of readily identifiable heterogeneity is gender. Teams that have members who differ with regard to gender often experience the same problems as teams with cultural value heterogeneity. In its most basic sense, a cultural group is an affiliation of people who collectively share certain norms, values, or traditions that are different from those of other groups (Cox, 1993). Although gender may not be the first characteristic we think of when we hear the word culture, it is very clear that gender is an important part of our identity and that women share certain norms that are different from those held by men. Therefore, group affiliation based on gender can be considered a type of cultural group. Similarity-attraction and social categorization theories suggest that having team members who are different in terms of gender can lead to in-group/out-group categorizations which negatively affect group process (Kramer, 1991). Research supports the argument that teams heterogeneous in gender may experience process losses and thus be less effective (Pelled, 1997). However, research on gender heterogeneity has been mixed, and in general, proportional differences are important factors in interpreting the results (Ethier & Deaux, 1994; Tsui, Egan & O'Reilly,

1992). In our study, we argue that the more heterogeneous teams are with respect to gender, the less positive member attitudes toward the team, and the less confident they will be in their abilities as a team.

**Hypothesis 3:** Gender heterogeneity is negatively related to group efficacy.

Furthermore, we argue that like past research examining other types of diversity, research investigating the impact of gender heterogeneity on teams outcomes has found mixed results in part due to ignoring the role of group efficacy beliefs in a team's effectiveness. This is because the problems that arise due to heterogeneity are often based on perceptual biases. One such bias is the *incompatibility error* (Thompson & Hastie, 1990; Northcraft, Polzer, Neal & Kramer, 1995). This error occurs when stereotypes and poor communication among diverse members of a team lead team them to misconstrue things others say, even though there is no underlying reason for disagreement on specific issues. The real problem is that team members tend to categorize themselves and others on the basis of social categories (e.g., "he is a man so he must think...."). This can result in meaningless arguing and posturing where there is no real conflict (Northcraft et al., 1995). It can also lead to competition within the team rather than collaboration (Ginn & Rubenstein, 1986). Perhaps most important, teams perceiving themselves to be in goal conflict will exhibit distrust. Eventually, communication and helping behaviors may deteriorate (Souder, 1987).

The same processes of social categorization and identification that lead to incompatibility error can also be a valuable resource. This is because social categorization based on stereotypes can sometimes reflect real underlying differences in values and attitudes that can be used by the team to provide breadth of knowledge, approaches or perspectives (Northcraft et. al. 1995). The process of social categorization only becomes divisive if it leads team members to believe that

functional conflicts are actually distributive (e.g., win-lose...I can only achieve my goals if he does not achieve his). We argue that this belief is captured in the level of group efficacy. Thus, group efficacy will mediate the impact that gender heterogeneity has on team outcomes. These outcomes include both team effectiveness and team reputation.

**Hypothesis 4:** Group efficacy mediates the relationship between gender heterogeneity and team effectiveness.

**Hypothesis 5:** Group efficacy mediates the relationship between gender heterogeneity and team reputation.

**Ethnic heterogeneity.** A second source of readily identifiable heterogeneity is ethnicity. We argue that ethnically heterogeneous teams will also have lower levels of group efficacy. Previous research indicates that ethnically heterogeneous teams experience process-related problems (Nemeth, 1986; Nemeth & Wachter, 1983). For example, one study Cox, Lobel and McLeod (1991) compared teams that were either all Anglo or ethnically diverse. When presented with a choice of behaving cooperatively or competitively, teams composed of Asian, Black, Hispanic and Anglo individuals acted more cooperatively than teams composed solely of Anglos. A second study (Riordan & Shore, 1997) found that ethnically diverse teams perceived less productivity and expressed less commitment to their teams. A third study providing evidence for this effect was conducted by Thomas, Ravlin and Wallace (1996). These researchers examined the influence of ethnic differences on process and outcomes of five ethnically homogeneous teams (all Japanese) and eight ethnically heterogeneous teams over the course of ten weeks. The Japanese participants reported significantly less positive assessments of team outcomes and processes than did their non-Japanese counterparts. The least positive assessments were those of Japanese participants in heterogeneous teams. These may have resulted from an inconsistency

between the functioning of the teams and the expectations that Japanese participants had for behavior. Based on these results, we argue the following:

**Hypothesis 6:** Ethnicity heterogeneity is negatively related to group efficacy.

We also argue that group efficacy will mediate the relationship between ethnic heterogeneity and team outcomes. In a landmark study linking ethnic heterogeneity to outcomes, McLeod, Lobel, & Cox (1996) found that the ideas produced by ethnically heterogeneous teams were rated an average of 11 percent higher than those of the homogenous teams in terms of both feasibility and overall effectiveness. However, this impact changed over time, as team progressed through their lifecycle and developed smooth interpersonal processes, leading the authors to argue that benefits in initial outcomes in homogeneous teams were due to intervening processes (McLeod, Lobel, & Cox, 1996). Nemeth and her colleagues have reached similar conclusions (Nemeth, 1986; Nemeth & Wachter, 1983). These studies lead us to propose the following hypotheses:

**Hypothesis 7:** Group efficacy mediates the relationship between ethnicity heterogeneity and team effectiveness.

**Hypothesis 8:** Group efficacy mediates the relationship between ethnicity heterogeneity and team reputation.

### **Non-readily Identifiable Characteristics**

The second category of heterogeneity captures those characteristics that are not immediately observable and must therefore be discovered through mutual interaction. These characteristics primarily influence the collaborative information processing abilities of a team and we draw upon theories of collective cognition in proposing specific relationships in the following sections.

**Cultural value heterogeneity.** As early as the 1960s, researchers began investigating the impact of cultural value heterogeneity in teams. For example, one series of studies found that culturally heterogeneous teams produced better-quality solutions to problems than did homogenous teams (Hoffman & Maier, 1961). In a second stream of research, the creativity, originality, and practicality of ideas produced by culturally homogeneous versus heterogeneous teams were compared. Results indicated that as long as the team members had similar ability levels, the culturally heterogeneous teams were more creative (Triandis, Hall & Ewen, 1965).

At the same time, research indicates that culturally heterogeneous teams have more process problems than teams that are homogenous (Hoffman, 1959; Feldman, Sam, McDonald & Bechtel, 1980). The positive conflict among team members' cognitive resources (skills, values, attitudes, personalities) is what makes heterogeneous teams creative; these conflicts are also what make it difficult for heterogeneous team members to work together effectively (Epton, Payne, & Pearson, 1985). Thus, previous research indicates that heterogeneity has different impacts on different outcomes. In most teams, however, a range of outcomes (e.g. creativity, process, etc.) are important for overall effectiveness. Thus we argue that it is critical to examine the net effect of heterogeneity on motivational processes within teams, as well as overall effectiveness.

Among the many dimensions of cultural values identified by researchers, collectivism is one of the most well researched constructs, primarily due to the effect it has on critical areas of management, including negotiations, motivation, and decision-making (Earley & Gibson, 1998; Trompenaars, 1994; Triandis, 1995). Collectivism is a construct that can be identified as an aspect of culture (Hofstede, 1984) or the self (Triandis, 1989). While individuals may vary within any culture in the extent in which they are allocentric (collectivist) or ideocentric (individualistic) (Triandis, Leung, Villareal, & Clack, 1985; Earley, 1994), the variance between

cultures tends to be greater, leading researchers to conclude that this is a cultural characteristic (Earley & Gibson, 1998).

Characteristics of collectivism include focusing on team goals with the view that individuals are by nature interdependent (Wagner, 1995). Within more collectivist societies, organizations are more likely to use worker collectives, such as work teams, in accomplishing tasks (Earley & Gibson, 1998). Collectivists commonly conform to in-group norms more readily than individualists, and also internalize these norms in such a way as to make such norm-conforming behavior automatic (Triandis, 1995).

In addition to difficulties based on attitudinal differences, culturally heterogeneous teams often report a less pleasant atmosphere and experience greater communication difficulties than homogenous teams (Fiedler, 1966). Thomas (1999) examined twenty-four multi-cultural teams performing five team tasks, and found that the degree of collectivist orientations of team members was directly related to their evaluation of group processes, including conflict, cooperation, cohesiveness, commitment, satisfaction, and trust. Members' relative cultural distance from each other also influenced their perceptions of group receptiveness. In terms of practice, Thomas (1999) suggests that these results highlight the importance of providing feedback concerning effective group processes for culturally diverse teams to reach their full potential. Effective interaction processes are important for all teams, but they may be especially critical for integrating the different viewpoints of culturally diverse teams. Maznevski and DiStefano (1996) also investigated this phenomenon. They found that the more heterogeneous the team was in terms of culture, the less shared were their initial norms for behavior.

Group efficacy is formed through the same general mechanisms as group norms, and function in a manner similar to norms in regulating behavior (Bandura, 1997). Based on these

findings, we argue that the more teams are culturally heterogeneous, particularly with regard to collectivism, the less confident they will be that they have the ability to perform at a high level.

The following hypothesis expresses this idea:

**Hypothesis 9:** Collectivism heterogeneity is negatively related to group efficacy.

Furthermore, we argue that cultural value heterogeneity, in and of itself, is not directly related to team outcomes. Instead, value heterogeneity impacts cognitive and motivational processes such as the formation of group efficacy in teams, which then impacts subsequent behavior and effectiveness. There is some evidence that value heterogeneity, in and of itself, is not responsible for how well a team works together; what matters is whether the team can communicate clearly, solve differences constructively, and generate innovative solutions (Daly, 1996). The following hypotheses express this:

**Hypothesis 4:** Group efficacy mediates the relationship between collectivism heterogeneity and team effectiveness.

**Hypothesis 5:** Group efficacy mediates the relationship between collectivism heterogeneity and team reputation.

**Tenure heterogeneity.** A second source of non-readily identifiable heterogeneity is tenure. Team tenure has been relatively neglected in the empirical literature on team effectiveness. However, a number of theoretical models have proposed that the length of time team members have been together in a team is important (Gersick, 1988; Jewell & Reitz, 1988; Tuckman & Jensen, 1977). These theories suggest that in the early stages of team formation, team members learn about one another, and develop norms for behavior relating to attendance, motivation, and communication (Feldman, 1984; Blau, 1995). As teams develop these norms,



group efficacy beliefs also are formed. Over time, the longer team members are together, the stronger these norms become.

In many teams, some members stay, other members leave, and still other members join. The literature on organization selection and attraction has demonstrated that individuals who are selected for organization participation, and those who subsequently stay, often fit better with the organization (Schneider, 1983). Existing team members may engage in attraction and selection behaviors to ensure constancy of team characteristics such as norms for values, attendance, and effectiveness. Potential team members are constantly screened by existing team members for fit relating to a variety of factors. Thus, as a team endures over time, and becomes more stable in population, members share more characteristics – in part due to norms, and in part due to the fact that individuals who are different (i.e. don't "fit") leave.

We argue that when teams have a more consistent level of tenure, they will have members who fit in terms of norms, beliefs, and expectations. Thus, as teams develop over time, a growing similarity in values will enhance a team's belief in its abilities, and similarity in team tenure will be positively related to group efficacy. On the other hand, teams with members who vary dramatically in their tenure with the team will not develop such positive expectations. The following hypothesis expresses this idea:

**Hypothesis 12:** Team tenure heterogeneity is negatively related to group efficacy.

Like the relationship between collectivism heterogeneity and team outcomes, evidence for a relationship between tenure heterogeneity and team effectiveness is mixed. For example, based on data from 199 banks, Bantel & Jackson (1989) concluded that both educational and functional heterogeneity were positively related to measures of innovation when other factors such as organization size, team size, and location of operations were held constant. Tenure

heterogeneity was not related to innovation. More recently, Simons (1995) obtained additional evidence that diversity in a team can affect communication processes, which in turn affect indicators of effectiveness. He investigated top management teams in 52 electronic component manufacturing firms. Results indicated that both educational and functional heterogeneity of a top management team interact with the debate process inside the team to influence profitability. Tenure heterogeneity was not related to profitability.

We argue that these null findings reflect a mediating process. Tenure heterogeneity, in and of itself, is not always a bad thing. Turnover in teams can introduce fresh viewpoints, thus increasing innovation, creativity and effectiveness. However, this will only be true if the heterogeneity has a positive impact on the motivational process in the teams, specifically the formation of group efficacy beliefs. Thus, we propose the following:

**Hypothesis 13:** Group efficacy mediates the relationship between tenure heterogeneity and team effectiveness.

**Hypothesis 14:** Group efficacy mediates the relationship between tenure heterogeneity and team reputation.

We now turn to an investigation of our model in a comprehensive sample of ongoing, permanent work teams that vary on heterogeneity in terms of collectivism, tenure, gender, and ethnicity.

## METHODS

**Sample.** Our sample consisted of 57 bank branches located within the greater Los Angeles area, all belonging to one international bank, with headquarters located in California. In selecting the specific branches for this study, cultural diversity was a primary factor considered,

in an attempt to find the most culturally diverse environment in which to study hypotheses related to cultural values. The resulting sample was reflective of the cultural diversity found in the Los Angeles area. Approximately 45% of the participating branches were located in communities consisting primarily of recent immigrants from Asian countries. Several communities were included, such as one with over 100,000 people who have immigrated from Vietnam over the past 10-20 years, as well as a community of Chinese immigrants near downtown Los Angeles. The remaining 55% of branches were located in a diverse range of areas, from low-income to high-income, commercial districts to residential districts, all located in the greater Los Angeles area.

From the 57 branches, 428 full and part-time employees were surveyed, of a possible sample of 515, for a response rate of 83%. The employees ranged in age from 18 to 65; the average age was 38.6 years. The sample consisted of 339 reporting female (79%), 83 reporting male (20%), reflecting the general trend in the industry. Ethnicity of employees varied significantly, as did reported country of birth, where responses ranged among 40 different countries. The average tenure in the branch was 4.6 years, in the bank 12.1 years, and in the banking industry 14.0 years.

The bank branches studied here were each autonomous entities wherein a number of individuals - full-time, part-time, and hourly employees - provided most of the primary banking services to branch customers. A branch manager was responsible for hiring and monitoring employees, and reported to a bank executive responsible for all branches in a specific district. Each district had between 25 and 35 branches, all within a specific physical region, or with a specific market focus. Operations employees within each branch monitored the transactions and paperwork of customer accounts, loan officers accepted and often approved loan applications

from customers, and customer service representatives did everything from initiating new accounts to daily transactions at the teller window. Size of branches ranged from 3 to 18 full and part-time employees, with an average of 9 employees.

Pre-survey interviews indicated that each branch considered itself a team, thus the sample size is 57 teams (one per branch). Within each team, identification with the team stemmed from several sources. First, all employees worked together in the same physical location - a branch office. Second, each employee assumed a role within their branch team and interacted on a regular basis hundreds of times each day. Third, an initiation ritual of application and hiring by the branch manager ensured that each employee was selected in part for their anticipated ability to fit in with other members of their team. Thus new employees were socialized to view themselves as part of the branch team. These characteristics suggested that a bank branch is an important team setting in which to study our model.

We conducted several manipulation checks to verify that branches were indeed teams. First, team identification was measured utilizing a modified version of the organization identification scale (Mael, 1988; Mael & Ashforth, 1992). Reliability of the measure in this study (Cronbach's Alpha) was .74. The mean for all branch teams on this measure was 4.07 (on a scale ranging from 1=low identification to 5=high identification) with a standard deviation of .76, indicating that branch employees did identify with their branch as a team. In addition to this measure, respondents were asked to respond yes or no as to whether they viewed the branch as a team; 91.3% indicated that they did see the branch as a team. These two measures provide evidence that the bank branches used in this study were viewed by the subjects as teams.

**Procedure.** Data collection was conducted by the first author over a three-month period via personal visits to each of the 57 participating branch teams. At two district-wide meetings,

the researcher described the research procedures to all 57 branch managers. In the three months following these meetings, individual appointments were made with each branch. District sales managers assisted the researcher in selecting customers for participation in the customer survey measuring branch reputation. Through sales software, customers were selected who had maintained at least one business account at the branch for a minimum of 1 year. For each branch team, the number of customers meeting these criteria ranged from 3 to 75. A maximum of 20 surveys per branch team were distributed randomly. Customers were mailed letters describing the survey signed by the District Manager on bank stationery with a survey attached. A total of 981 surveys were sent to business customers, with a response of 224 (23%), and an average of four customers per branch team. Average time customers had banked with a branch team was 10.4 years.

District Managers were asked to complete surveys regarding branch team effectiveness for each branch team in their district. District Managers also provided additional information regarding other relevant characteristics of the branch teams, including market type and market size. A 100% response rate was received from the District Managers.

**Measures.** *Gender heterogeneity* was measured by determining the standard deviation of gender within the team. Gender of participants was scored using dummy variables of 1 for female and 0 for male. The mean standard deviation for all teams was .32, and ranged from 0 to .58. *Ethnicity heterogeneity* was measured by calculating the Herfindal-Herschman Index for ethnicity. The Herfindal-Herschman Index is calculated by taking 1- the sum of squares percentage of team members in each ethnicity category (Hambrick, Cho, & Chen, 1996).

*Collectivism heterogeneity* was measured by determining the standard deviation of all team members' individual scores on collectivism. Individual scores on collectivism were

obtained using 16 items from the scale developed by Triandis (1995). The items loaded on one primary factor with an eigenvalue of 3.39 accounting for 21.2% of the variance. The reliability (Cronbach's Alpha) of this scale in this study was .72.

*Tenure heterogeneity* was measured using the coefficient of variation in tenure for each branch team. This was computed by dividing the standard deviation for the number of years spent in a branch by the average number of years members had spent in a branch. This approach has been recommended in the literature examining characteristics of teams (e.g., Hambrick, Cho, & Chen, 1996). The resulting measure reflects primarily the dispersion of tenure in the team. If two teams have the same average tenure, the team with the higher standard deviation in tenure will have a higher coefficient of variation. Dividing by average tenure ensures, however, that if two teams have the same standard deviation, the team with lower average tenure will have a higher coefficient, reflecting greater heterogeneity.

*Group efficacy* was measured using a modification of a survey developed by Guzzo, Yost, Campbell, & Shea (1993). Eight items measured the extent to which members of the branch team are confident about the team's ability to accomplish tasks using a scale ranging from 1=To no extent to 5=To a great extent. A principal component analysis suggested one factor with an eigenvalue of 4.64 accounting for 58.0% of the variance. Reliability (Cronbach's Alpha) for this measure was .89. Individual scores across the nine items were averaged to arrive at a single composite group efficacy score for each individual. Then, using the approach recommended by Guzzo et al., individual scores on this measure were aggregated to the group level by taking the average of members' scores within a team.

Conceptually, group efficacy is a group-level construct, but to ensure that statistically our measure captured a group-level characteristic, we conducted numerous analyses. We first

demonstrated that there is more variance between groups than within groups using the WABA I test (Dansereau, Alutto, & Yammarino, 1984). This test compares the between-group eta to the within-group eta by computing an E ratio that can be tested for both statistical and practical significance. The group efficacy E ratio met the test of statistical significance ( $F=2.28$ ,  $df=(56,351)$   $p<.01$ ). An additional estimate of within-group interrater agreement was made using the  $r_{wg}$  analysis recommended by James, Demaree, & Wolf (1984; 1993). The  $r_{wg}$  statistic for group efficacy was .93, reflecting high inter-rater agreement. These analyses suggest it was appropriate to infer a group-level construct from our measure.

*Team effectiveness* was assessed by the district manager who managed each branch team, utilizing an instrument developed by the researchers. This instrument asked about specific task effectiveness, such as achievement of goals, as well as more subjective measures of effectiveness, such as the friendliness of the branch employees. Eight items asked respondents to rate the branch from 1=extremely low to 5=extremely high. Factor analysis revealed one primary factor with an eigenvalue of 5.35 accounting for 66.9% of variance. Reliability (Cronbach's Alpha) for this measure was .92. Scores across the eight items were averaged to arrive at a single score for each branch.

*Team reputation* was measured with a survey given to business customers of each branch team. This instrument was developed by the researchers to measure perceptions of the branch based on the experiences of the business customer with each branch team. Respondents were asked to rate each of nine items on a scale of 1=extremely low to 5=extremely high. Factor analysis revealed one factor with an eigenvalue of 7.30 accounting for 81.1% of the variance. Reliability (Cronbach's Alpha) of the nine-item measure was .97. Scores on the nine items were averaged to arrive at one reputation score for each team by each customer. Number of customer

responses for each branch ranged from one to eight. All customer responses were aggregated (averaged) for each branch team. Again, evidence to justify this aggregation was obtained by conducting the WABA I test comparing the between-group eta to the within-group eta (Dansereau, Alutto, and Yammarino, 1984). The reputation E ratio met the statistical significance test ( $F=1.53$ ,  $df=(53,168)$   $p<.05$ ). An additional estimate of within-group interrater agreement was made using the  $r_{wg}$  analysis recommended by James, Demaree, & Wolf (1984; 1993). The  $r_{wg}$  statistic for reputation was .92, reflecting high inter-rater agreement. These analyses suggest it was appropriate to infer a group-level construct.

## ANALYSIS AND RESULTS

### Group Efficacy and Team Outcomes

Hypotheses 1 and 2 were tested using correlation analysis. As shown on Table 1, the relationship between group efficacy and team effectiveness was positive and significant (Pearson's correlation=.49,  $p<.01$ ), supporting hypothesis 1. The relationship between group efficacy and team reputation was not significant, providing no support for hypothesis 2.

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Insert Table 1 about here  
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### Readily Identifiable Heterogeneity Characteristics

Hypothesis 3 and 6 exploring the relationship between readily identifiable heterogeneity characteristics and group efficacy were tested using correlation analysis. Hypothesis 3 regarding gender heterogeneity was not supported. However, it is interesting to note that although not hypothesized, gender heterogeneity was positively related to team reputation. Hypothesis 6 regarding tenure heterogeneity was supported. As proposed, the relationship between tenure



heterogeneity and group efficacy was negative and significant: the less variation in tenure, the higher the level of group efficacy.

Hypotheses 4, 5, 7, and 8 were tested by conducting hierarchical mediated regression analysis using the procedure described by James & Brett (1984). Results are reported in table 2 and 3. Hypothesis 4 proposed the mediating effect of group efficacy on the relationships between gender heterogeneity and team effectiveness. To test this hypothesis, two equations were run. In the first equation, effectiveness was regressed on group efficacy, followed by gender heterogeneity. In the second equation, effectiveness was regressed on gender heterogeneity, followed by group efficacy.

According to James & Brett (1984), our hypothesized mediating variable (group efficacy) should account for significant variance in the dependent variables in both equations. Further, gender heterogeneity should be significantly related to the dependent variables in the second, but not the first equation. Results are found in Table 2. After controlling for group efficacy, gender heterogeneity accounted for 20% of the variance, equal to the 20% accounted for prior to entering group efficacy, providing no support for the mediating effects proposed in hypothesis 4. A second set of models was run to test hypothesis 5 regarding the mediating effect of group efficacy on the relationship between gender heterogeneity and team reputation. Both before and after controlling for group efficacy, gender heterogeneity accounted for about the same amount of variance, thus, no support was obtained for Hypothesis 5.

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Insert Table 2 and 3 about here

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### **Non-readily Identifiable Heterogeneity Characteristics**

Hypothesis 9 and 12 regarding the relationship between non-readily identifiable heterogeneity characteristics and group efficacy were tested using correlation analysis. The relationship between collectivism heterogeneity and group efficacy was positive and significant, the opposite of what was predicted in hypothesis 9 (Pearson's correlation = .28,  $p < .05$ ). In order to further explore the relationship between collectivism heterogeneity and group efficacy, a post-hoc, sub-group analysis was conducted. Group efficacy means were compared for different levels of collectivism heterogeneity. Results are depicted in Figure 2. The relationship was curvilinear: group efficacy was high for teams low in collectivism heterogeneity and for teams high in collectivism heterogeneity. Teams with moderate collectivism heterogeneity were lowest in group efficacy. There was no direct relationship between ethnic heterogeneity and group efficacy providing no support for hypothesis 12. However, it is interesting to note that although not hypothesized, ethnic heterogeneity was negatively related to team reputation.

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Insert Figure 2 about here  
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Hypothesis 10, 11, 13, and 14 tested the mediating effect of group efficacy on the relationship between non-readily identifiable characteristics and team outcomes using the James & Brett (1984) analysis described earlier. Results are reported in table 4 and 5.

After controlling for group efficacy, collectivism heterogeneity accounted for 8% of the variance, whereas it accounted for 21% prior to entering group efficacy, providing support for a mediated relationship. However, James & Brett (1984) suggest that for a full mediating relationship to occur requires that the antecedent variable (collectivism heterogeneity) be significantly related to the dependent variables prior to entering the hypothesized mediator

(group efficacy), and this condition was not fully satisfied in the analyses. Thus, we received partial support for hypothesis 10.

A second set of models was run to test hypothesis 11 regarding the mediating effect of group efficacy on the relationship between collectivism heterogeneity and team reputation. No significant relationships were found between group efficacy, collectivism heterogeneity, and group reputation, and thus hypothesis 11 was not supported.

A third set of models tested hypothesis 13 regarding the mediating effect of group efficacy on the relationship between tenure heterogeneity and team effectiveness. No support was obtained for this relationship. A final set of models was run to test Hypothesis 14 regarding the mediating effect of group efficacy on the relationship between tenure heterogeneity and team reputation. No significant relationships were found between tenure heterogeneity, group efficacy, and team reputation.

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Insert Tables 4 & 5 about here  
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## **DISCUSSION**

This study makes several important contributions to our understanding of types of team heterogeneity, group efficacy, and team effectiveness and reputation. First, group efficacy was a strong predictor of team effectiveness in our study. Group efficacy also partially mediated the relationship between collectivism heterogeneity and team effectiveness. This finding supports the basic tenant of Social Cognitive Theory, that self-referent thought mediates the relationship between knowledge and action (Bandura, 1997). In other words, even though a person may possess certain skills, whether they will use them well under diverse circumstances is dependent upon the person's thought processes as he or she approaches tasks. However, our research moves

the focus of this theory from the individual to the group level of analysis, indicating that collective thought (and the resulting cognitive products such as group efficacy) mediates the relationship between collective knowledge and collective action.

Second, looking at findings across the types of heterogeneity, our study indicates that different types of heterogeneity have different relationships with group efficacy. We studied two different types of heterogeneity: readily identifiable characteristics (gender and ethnicity) and non-readily identifiable characteristics (culture and tenure). We found that readily identifiable characteristics were related to reputation opinions of customers. In contrast, we found that the non-readily identifiable types of heterogeneity had stronger relationships with group efficacy. These results support the arguments that gender and ethnicity themselves may not represent barriers to overcome in terms of differences within the team. Instead, customers may use these demographic characteristics as visible cues when formulating opinions regarding the quality of the team. When teams form beliefs about their ability to perform, however, these visible differences are not as salient. Only differences contributing to collaborative functioning – such as tenure and cultural value heterogeneity – relate to group efficacy beliefs. Thus, it is not appropriate to declare that heterogeneous teams will experience “x”. Instead, it is important to examine how the team members differ to understand the specific implications of heterogeneity. Future research should examine heterogeneity among a wider variety of individual characteristics, such as personality or satisfaction.

Third, our finding that group efficacy was not related to reputation is intriguing. While group efficacy was significantly related to effectiveness, this relationship did not carry over to the team’s reputation. Perhaps the process by which a customer formulates opinions regarding reputation is based on interaction with the branch manager, rather than the team. When

formulating reputation opinions, customers may use a comparative analysis. If different customers use different referents to evaluate reputation, this may also account for the lack of significance in the relationship. In addition, there may be factors affecting the team's reputation that are beyond the team's control, for example, organizational reputation as a whole. Perhaps the team is able to compartmentalize those factors that are beyond its control, and eliminate those considerations from their efficacy beliefs. However, customers may themselves take these factors into consideration when formulating opinions about reputation.

Fourth, while previous research has indicated mixed results in examining relationships between heterogeneity and team outcomes, our study helps to clarify the relationship, indicating that both low and high heterogeneity can have a positive impact on teams. We found that teams heterogeneous in terms of gender are higher in reputation. This result may reflect customer reputation opinions formed with attention to demographic qualities within a team. Because the majority (79%) of the team members were female, it is possible that when teams included both male and female members (more heterogeneous), customer opinions were higher than for teams with primarily female members. These results indicate that perceptions relating to gender may influence customer reputation opinions. Further research into the process through which customers form opinions based on team gender composition is warranted.

Our finding that collectivism heterogeneity has a curvilinear relationship with group efficacy is important and contributes to the growing body of research regarding heterogeneous (e.g., multicultural) teams in the international literature. Much of this work has proposed that heterogeneous teams form what has been referred to as a "hybrid" culture (Earley & Mosacowski, 2000; Elron, 1997). A hybrid culture in highly heterogeneous teams consists of a common method of interacting and communicating that provides the basis for exchange and

coordination so that diverse member talents and resources can be used effectively. Teams low in heterogeneity (e.g., unicultural teams) share these understandings from the onset, based on their common set of values, preferences, and cultural characteristics. In contrast, moderately heterogeneous teams do not have these commonalities, nor do they develop a hybrid culture. As a result, they often show a great deal of communication problems, conflict and low team identity, which tend to have a negative impact on team effectiveness (Jehn, Chadwick, & Thatcher, 1997).

Our results also indicate that teams varying in ethnicity are lower in reputation. The mean ethnicity index of .62 indicates that the majority of teams studied were moderately heterogeneous. If teams of moderate ethnic heterogeneity struggle to form a “hybrid” culture, then perhaps the teams with the highest heterogeneity in this study experienced coordination and communication problems perceived as detrimental by customers but not reflected in effectiveness at tasks (Earley & Mosakowski, 2000). Further examination into the dynamics of this relationship is also warranted.

Finally, the results reported here indicate that teams with different degrees of tenure do have different internal beliefs. Specifically, teams with less variation in tenure have higher group efficacy. These results have implications for theories of group development (e.g., Gersick, 1988; Jewell & Reitz, 1988), in that the focus becomes not only the amount of time the team has been existence, but the configuration of tenure among the various members of the team. Further research into tenure variation seems warranted. The practical consideration is that turnover in teams should be carefully managed.

Limitations of this study may have also contributed to lack of support for some of our hypotheses. The sample size is small, particularly for the branch teams with usable reputation data (54 out of 57 branch teams). Conducting a study using a larger number of teams may

improve our understanding of these relationships. In addition, future research on this theoretical framework would benefit from longitudinal study. By examining intact teams from start to finish, individual characteristics of team members could be measured at periodic intervals. This would allow researchers to track whether teams with members that become more similar over time have higher levels of efficacy, or alternatively if teams that have higher levels of group efficacy contain individuals who become more similar over time. Longitudinal research would also provide an opportunity to explore changes in outcome relationships, particularly when effectiveness and reputation change over time.

The possibility that other forms of heterogeneity may impact group efficacy is valid. For example, perhaps heterogeneity regarding values other than collectivism, or other group characteristics such as team identification or team norms are related to group efficacy and team outcomes. Although a curvilinear effect was found for collectivism heterogeneity and group efficacy, tenure heterogeneity appears to have a negative linear relationship with group efficacy. By investigating other forms of heterogeneity, more information could be gained regarding which forms of heterogeneity are beneficial to teams, which are detrimental, and which have more complex relationships, such as the curvilinear relationship found for collectivism heterogeneity.

Another factor to consider in the relationship between heterogeneity and group efficacy is the importance of team similarity to their leader. Guzzo, et al. (1993) argue that transformational leaders influence group efficacy. Perhaps a leader's influence is affected by tenure heterogeneity. If a team has low heterogeneity, yet is different from their leader, this may cause the team to have lower group efficacy despite the low heterogeneity. The relationships between heterogeneity of group variables, team effectiveness, and the mediating effect of group efficacy are complex, and

need examination that expands on what has been learned here. Further research into the importance of heterogeneity as it is mediated by group efficacy should be pursued.

In conclusion, this study provides us with initial understanding of the importance of different types of heterogeneity and group efficacy in teams. Efficacy affects the internal dynamics of a team as it develops a belief in itself, and this belief has a strong relationship to a team's effectiveness. Expanding our understanding of the antecedents of group efficacy, as well as the mediating effect of group- efficacy, will serve to improve our knowledge of how to create more confident, and thus more effective teams.



## REFERENCES

- Bandura, A. 1977. Social Learning Theory. Englewood Cliffs, NJ; Prentice-Hall.
- Bandura, A. 1986. Social foundations of action and thought: A social cognitive view. Englewood Cliffs, NJ: Prentice Hall.
- Bandura, A. 1997. Self-efficacy: The exercise of control. New York; W.H. Freeman & Co, Publishers.
- Bantel, K.A., & Jackson, S.E. 1989. Top management and innovations in banking: Does the composition of the top team make a difference? Strategic Management Journal, 10: 107-124.
- Bar-Tal, D. 1990. Group Beliefs. New York, NY; Springer-Verlag.
- Blau, G. 1995. Influence of group lateness on individual lateness: A cross-level examination. Academy of Management Journal, 38: 1483-1496.
- Cox, T.H., Lobel, S.A., & McLeod, P.L. 1991. Effects of ethnic group cultural differences on cooperative and competitive behavior on a group task. Academy of Management Journal, 34(4): 827-847,
- Campion, M.A., Medsker, G.J., & Higgs, A.C. 1993. Relations between work group characteristics and effectiveness: Implications for designing effective work groups. Personnel Psychology, 46: 823-850.
- Daly, C.B. 1996. Does diversity matter? Harvard Business Review, 74(3): 10-11.
- Dansereau, F., Alutto, J.A., & Yammarino, F.J. 1984. Theory testing in organizational behavior: The variant approach. Englewood Cliffs, NJ; Prentice Hall.
- Earley, P. C. 1993. East meets West meets Mideast: Further explorations of collectivistic and individualistic work groups. Academy of Management Journal, 36: 319-348.
- Earley, P.C. 1994. Explorations of the individual and the collective self: An assessment of self-efficacy and training across cultures. Administrative Science Quarterly, 39. 89-117.
- Earley, P.C. & Gibson, C.B. 1998. Taking stock in our progress on individualism-collectivism: 100 years of solidarity and community. Journal of Management, 24: 265-304.
- Earley, P.C. & Mosakowski, E.M. 2000. Creating hybrid team cultures: An empirical test of transnational team functioning. Academy of Management Journal. 43: 26-49.

Elron, E. 1997. Top management teams within multinational corporations: Effects of cultural heterogeneity. Leadership Quarterly, 8: 393-412.

- Ethier, K.A., & Deaux, K., 1994. Negotiating social identity when contexts change: Maintaining identification and responding to threat. Journal of Personality and Social Psychology; 67: 243-251.
- Epton, S.R., Payne, R.L., & Pearson, A.W. 1985. Contextual issues in managing cross-disciplinary research. In B.W. Mar, W.T. Newell, & B.O. Saxberg (Eds.), Managing high technology: An interdisciplinary perspective (pp. 209-230). Amsterdam: North Holland/Elsevier Science.
- Feldman, D.C. 1984. The development and enforcement of group norms. Academy of Management Review, 9: 47-53.
- Feldman, J.M., Sam, I.A., McDonald, W.F., & Bechtel, G.G. 1980. Work outcome preference and evaluation: A study of three ethnic groups. Journal of Cross-Cultural Psychology, 11: 444-468.
- Fiedler, F.E. 1966. The effect of leadership and cultural heterogeneity on group performance. A test of the contingency model. Journal of Experimental Social Psychology, 2: 237-264.
- George, J.M. (1990) Personality, affect, and behavior in groups. Journal of Applied Psychology, 75(2): 107-116.
- Gersick, C.J. 1988. Time and transition in work teams: Toward a new model of group development. Academy of Management Journal, 31: 9-41.
- Gibson, C.B. 1999. Do they do what they believe they can? Group efficacy and group effectiveness across tasks and cultures. Academy of Management Journal. 42(2): 138-152.
- Gibson, C.B. (2000). From accumulation to accommodation: The chemistry of collective cognition in work groups. Working paper, University of Southern California.
- Ginn, M.E., & Rubenstein, A.H. 1986. The R&D production interface: A case study of new product commercialization. Journal of Product Innovation Management, 3: 158-170.
- Guzzo, R.; Yost, P; Campbell, R.J.; & Shea, G. 1993. Potency in groups: Articulating a construct. British Journal of Social Psychology, 32: 87-106.
- Hackman, J.R. 1990. Groups that work (and those that don't). San Francisco, CA: Jossey-Bass Publishers.
- Hambrick, D.C., Cho, T.S., & Chen, M. 1996. The influence of top management team heterogeneity on firms' competitive moves. Administrative Science Quarterly, 41(4): 659-684.

- Hodges, L. & Carron, A.V. 1992. Collective efficacy and group performance. International Journal of Sport Psychology, 23(1): 48-59.
- Hoffman, L.R. 1959. Homogeneity of member personality and its effect on group problem-solving. Journal of Abnormal and Social Psychology, 58: 27-32.
- Hoffman, L.R. & Maier, N.R.F. 1961. Quality and acceptance of problem solutions by members of homogeneous and heterogeneous groups. Journal of Abnormal and Social Psychology, 62: 401-407.
- Hofstede, G. 1984. Culture's Consequences. Newbury Park; Sage Publications.
- Jackson, S.E., May, K.E. & Whitney, K. 1995. Understanding the dynamics of diversity in decision-making teams. In R.A. Guzzo & E. Salas (Eds.) Team Effectiveness and Decision Making in Organizations, pp. 204-261, San Francisco, CA: Jossey Bass.
- James, L.R. & Brett, J.M. (1984) Mediators, moderators, and tests for mediation. Journal of Applied Psychology, 69(2): 307-321.
- James, L.R., Demaree, R.G., & Wolf, G. (1984) Estimating within-group interrater reliability with and without response bias. Journal of Applied Psychology, 69(1): 85-98.
- James, L.R., Demaree, R.G., & Wolf, G. (1993)  $r_{wg}$ : An assessment of within-group interrater agreement. Journal of Applied Psychology, 78(2): 306-309.
- Jehn, K.A., Chadwick, C., & Thatcher, S.M.B. 1997. To agree or not to agree: The effects of value congruence, individual demographic dissimilarity, and conflict on workgroup outcomes. The International Journal of Conflict Management, 8: 287-305.
- Jewell, L. and Reitz, J. 1988. Group decision making. In Katz, R. (Ed), et al. Managing professionals in innovative organizations: A collection of readings. Cambridge, MA; Ballinger Publishing Co/Harper & Row Publishers, pp. 247-261.
- Kilduff, M. & Krackhardt, D. 1994. Bringing the individual back in: A structural analysis of the internal market for reputation in organizations. Academy of Management Journal, 37: 87-108.
- Klimoski, R. & Mohammed, S. 1994. Team mental model: Construct or metaphor? Journal of Management, 20: 403-437.
- Kramer, R. 1991. Intergroup relations and organizational dilemmas: The role of categorization processes. In B. Staw and L. Cummings (Eds.), Research in Organizational Behavior. 13: 191-228.

- Larson, C.E. & LaFasto, F.M.J. 1989. Teamwork: What must go right, what can go wrong. Newbury Park, CA: Sage.
- Little, B.L. & Madigan, R.M. 1994. Motivation in work teams: A qualitative and quantitative exploration of the construct of collective efficacy. Paper presented at the 1994 Academy of Management Meeting, Dallas, TX.
- Mael, F. 1988. Organizational identification: Construct re-definition and a field application with organizational alumni. Unpublished doctoral dissertation, Wayne State University, Detroit.
- Mael, F. & Ashforth, B.E. 1992. Alumni and their alma mater: A partial test of the reformulated model of organizational identification. Journal of Organizational Behavior, 13. 103-123.
- Maznevski, M.L. & DiStephano, J. 1996. The mortar in the mosaic: A new look at composition, process, and performance in decision-making groups. Presented at the Academy of Management Conference, Cincinnati, OH.
- McLeod, P.L., Lobel, S.A., & Cox, T.H. 1996. Ethnic diversity and creativity in small groups. Small Group Research, 27(2): 248-264.
- Meglino, B.M., Ravlin, E.C., and Adkins, C.L. 1992. The measurement of work value congruence: A field study comparison. Journal of Management, 18:33-43.
- Milliken, F.J. & Martins, L.L. 1996. Searching for common threads: Understanding the multiple effects of diversity in organizational groups. Academy of Management Review, 21: 402-433.
- Mohrman, A.M.; Cohen, S.G.; & Mohrman, S.A. 1995. Designing team based organizations. San Francisco, CA; Jossey-Bass.
- Nemeth, C.J. 1985. Dissent, group process, and creativity. Advances in Group Processes, 2: 57-75.
- Nemeth, C.J. 1986. Differential contributions of majority & minority influence. Psychological Review, 93: 23-32.
- Nemeth, C.J., & Wachter, J. 1983. Creative problem solving as a result of majority versus minority influence. European Journal of Social Psychology, 13: 45-55.
- Northcraft, G.B., Polzer, J.T., Neale, M.A., and Kramer, R.M. 1995. Diversity, social identity, and performance: Emergent social dynamics in cross-functional teams. In S.E. Jackson and M.N. Ruderman (Eds.), Diversity in Work Teams (pp. 69 - 96). Washington, D.C.: American Psychological Association

- Pelled, L. 1997. Relational demography and perceptions of group conflict and performance: A field investigation. International Journal of Conflict Resolution.
- Pelled, L.H. 1996. Demographic diversity, conflict and work group outcomes: An intervening process theory. Organization Science, 7(6): 615-631.
- Pelled, L.H., Eisenhardt, K.M., & Xin, K.R. 1999. Exploring the black box: An analysis of work group diversity, conflict and performance. Administrative Science Quarterly, 44: 1-28.
- Prussia, G.E. & Kinicki, A.J. 1996. A motivational investigation of group effectiveness using social-cognitive theory. Journal of Applied Psychology, 81: 187-198.
- Riordan, C. & Shore, L. 1997. Demographic diversity and employee attitudes: Examination of relational demography within work units. Journal of Applied Psychology; 82: 342-358.
- Sayles, L.R. 1958. The behavior of industrial work groups. New York; Wiley.
- Schneider, B. 1983. Interactional psychology and organizational behavior. In L.L. Cummings & B.M. Staw (Eds) Research in Organizational Behavior, vol. 5. Greenwich, CT; JAI Press.
- Shea, G.P. & Guzzo, R.A. 1987. Group effectiveness: What really matters? Sloan Management Review, 28: 25-31.
- Simons, T. 1995. Top management team consensus, heterogeneity and debate as contingent predictors of company performance: The complementarity of group structure and process. Academy of Management Best Paper Proceedings, 62 - 66.
- Snarey, J.R. 1985. Cross-cultural universality of social-moral development: A critical review of Kohlbergian research. Psychological Bulletin, 97. 202-232.
- Souder, W.E. 1987. Promoting an effective R&D/marketing interface. Research Management, 23: 10-15.
- Thomas, D.C. 1999. Cultural diversity and work group effectiveness: An experimental study. Journal of Cross-cultural Psychology, 30(2): 242-263.
- Thomas, D.C., Ravlin, E.C., & Wallace, A.W. 1996. Effect of cultural diversity in work groups. Research in the Sociology of Organizations, 14: 1-33.
- Triandis, H. C. 1989. The self and social behavior in differing cultural contexts. Psychological Review, 96: 506-520.
- Triandis, H.C. 1995. Individualism and Collectivism. Boulder, CO; Westview Press.

- Triandis, H. C., Leung, K., Villareal, M.J.& Clack, F.L. 1985. Allocentric versus idiocentric tendencies: Convergent and discriminant validation. Journal of Research in Personality, 19: 395-415.
- Triandis, H.C., Hall, E.R., & Ewen, R.B. 1965. Member heterogeneity and dyadic creativity. Human Relations, 18: 33-55.
- Tsui, A., Egan, T., & O'Reilly, C. 1992. Being different: Relational demography and organizational attachment. Administrative Science Quarterly; 37: 549-579.
- Trompenaars, F. 1994. Riding the Waves of Culture: Understanding diversity in global business. London, England; Irwin Professional Publishing.
- Tuckman, B.W. & Jensen, M.C. 1977. Stages of small group development revisited. Group and Organizational Studies, 2: 419-429.
- Wagner, J. 1995. Studies of individualism-collectivism: Effects on cooperation in groups. Academy of Management Journal, 38:152-172.
- Watson, E.W., Kumar, K. & Michaelson, L.K. 1993. Cultural diversity impact on interaction process and performance: Comparing homogeneous and diverse task groups. Academy of Management Journal, 36: 590-606.
- Williams, K.Y. & O'Reilly, C.A. 1998. Forty years of diversity research: A review. Research in Organizational Behavior. 20:77-140
- Zander, A.W. & Medow, H. 1963. Individual and group aspiration. Human Relations. 16: 89-105.

**TABLE 1**  
**Means, Standard Deviations, Intercorrelations, and Alpha for Key Variables**

| Variable                      | Mean | SD  | 1           | 2           | 3           | 4           | 5    | 6   | 7   |
|-------------------------------|------|-----|-------------|-------------|-------------|-------------|------|-----|-----|
| 1. Group efficacy             | 4.18 | .38 | <b>0.89</b> |             |             |             |      |     |     |
| 2. Team Effectiveness         | 3.43 | .77 | .49**       | <b>0.92</b> |             |             |      |     |     |
| 3. Team Reputation            | 3.33 | .66 | .13         | .20         | <b>0.97</b> |             |      |     |     |
| 4. Collectivism Heterogeneity | .94  | .39 | .28*        | .21         | .15         | <b>0.72</b> |      |     |     |
| 5. Tenure Heterogeneity       | .94  | .29 | -.24+       | -.02        | -.14        | -.11        | N/A  |     |     |
| 6. Gender Heterogeneity       | .32  | .22 | -.01        | .20         | .27*        | -.20        | -.05 | N/A |     |
| 7. Ethnicity Heterogeneity    | .62  | .16 | .03         | -.01        | -.26*       | .11         | .03  | .00 | N/A |

\*\* significant p<.01

\* significant p<.05

+ significant p<.10



**TABLE 2**  
**Heirarchical Regression Analysis of Team Effectiveness and Team Reputation**  
**with Group efficacy and Gender Heterogeneity**

| <b>Effectiveness Model 1</b> |  | <b>Step 1</b> | <b>Step 2</b> | <b>Reputation Model 1</b> |       |
|------------------------------|--|---------------|---------------|---------------------------|-------|
| Group Efficacy               |  | .49**         | .49**         | Group Efficacy            | .13   |
| Gender Heterogeneity         |  |               | .20+          | Gender Heterogeneity      | .28*  |
| R <sup>2</sup>               |  | .24           | .28           | R <sup>2</sup>            | .10   |
| F                            |  | 17.05**       | 10.37**       | F                         | 2.71+ |
| Df                           |  | 1,55          | 2,54          | Df                        | 2,51  |
| ▲R <sup>2</sup>              |  |               | .04+          | ▲R <sup>2</sup>           | .08*  |
| ▲F                           |  |               | 3.05+         | ▲F                        | 4.41* |
| <b>Effectiveness Model 2</b> |  | <b>Step 1</b> | <b>Step 2</b> | <b>Reputation Model 2</b> |       |
| Gender Heterogeneity         |  | .20           | .20           | Gender Heterogeneity      | .27*  |
| Group Efficacy               |  |               | .49**         | Group Efficacy            | .15   |
| R <sup>2</sup>               |  | .04           | .28           | R <sup>2</sup>            | .10   |
| F                            |  | 2.22          | 10.37**       | F                         | 4.21* |
| Df                           |  | 1,55          | 2,54          | Df                        | 2,51  |
| ▲R <sup>2</sup>              |  |               | .24**         | ▲R <sup>2</sup>           | .02   |
| ▲F                           |  |               | 17.84**       | ▲F                        | 1.19  |

+p≤.10; \*p≤.05; \*\*p≤.01

Note: Table contains standardized regression coefficients (beta).

**TABLE 3**  
**Heirarchical Regression Analysis of Team Effectiveness and Team Reputation**  
**with Group Efficacy and Ethnicity Heterogeneity**

| <b>Effectiveness Model 1</b> |  | <b>Step 1</b> | <b>Step 2</b> | <b>Reputation Model 1</b> |  | <b>Step 1</b> | <b>Step 2</b> |
|------------------------------|--|---------------|---------------|---------------------------|--|---------------|---------------|
| Group Efficacy               |  | .49**         | .49**         | Group Efficacy            |  | .13           | .15           |
| Ethnicity Heterogeneity      |  |               | -.03          | Ethnicity Heterogeneity   |  |               | .27*          |
| R <sup>2</sup>               |  | .24           | .24           | R <sup>2</sup>            |  | .02           | .09           |
| F                            |  | 17.05**       | 8.40**        | F                         |  | .94           | 2.48+         |
| Df                           |  | 1,55          | 2,54          | Df                        |  | 1,52          | 2,51          |
| ▲R <sup>2</sup>              |  |               | .00           | ▲R <sup>2</sup>           |  |               | .08*          |
| ▲F                           |  |               | .04           | ▲F                        |  |               | 4.41*         |
| <b>Effectiveness Model 2</b> |  | <b>Step 1</b> | <b>Step 2</b> | <b>Reputation Model 2</b> |  | <b>Step 1</b> | <b>Step 2</b> |
| Ethnicity Heterogeneity      |  | -.01          | -.03          | Ethnicity Heterogeneity   |  | -.26*         | -.27*         |
| Group Efficacy               |  |               | .49**         | Group Efficacy            |  |               | .15           |
| R <sup>2</sup>               |  | .00           | .24           | R <sup>2</sup>            |  | .07           | .09           |
| F                            |  | 0.01          | 8.40**        | F                         |  | 3.72*         | 2.48+         |
| Df                           |  | 1,55          | 2,54          | Df                        |  | 1,52          | 2,51          |
| ▲R <sup>2</sup>              |  |               | .24**         | ▲R <sup>2</sup>           |  |               | .02           |
| ▲F                           |  |               | 16.79**       | ▲F                        |  |               | 1.22          |

+p≤.10; \*p≤.05; \*\*p≤.01

Note: Table contains standardized regression coefficients (beta).

**TABLE 4**  
**Hierarchical Regression Analysis of Team Effectiveness and Team Reputation**  
**with Group Efficacy and Collectivism Heterogeneity**

| <b>Effectiveness Model 1</b> | <b>Step 1</b> | <b>Step 2</b> | <b>Reputation Model 1</b>  | <b>Step 1</b> | <b>Step 2</b> |
|------------------------------|---------------|---------------|----------------------------|---------------|---------------|
| Group Efficacy               | .49**         | .47**         | Group Efficacy             | .13           | .11           |
| Collectivism Heterogeneity   |               | .08           | Collectivism Heterogeneity |               | .13           |
| R <sup>2</sup>               | .24           | .24           | R <sup>2</sup>             | .02           | .04           |
| F                            | 16.87**       | 8.53**        | F                          | .94           | .93           |
| Df                           | 1,54          | 2,53          | df                         | 1,52          | 2,51          |
| ▲R <sup>2</sup>              |               | .00           | ▲R <sup>2</sup>            |               | .02           |
| ▲F                           |               | .38           | ▲F                         |               | .91           |
| <b>Effectiveness Model 2</b> | <b>Step 1</b> | <b>Step 2</b> | <b>Reputation Model 2</b>  | <b>Step 1</b> | <b>Step 2</b> |
| Collectivism Heterogeneity   | .21           | .08           | Collectivism Heterogeneity | .15           | .13           |
| Group Efficacy               |               | .47**         | Group Efficacy             |               | .11           |
| R <sup>2</sup>               | .04           | .24           | R <sup>2</sup>             | .02           | .04           |
| F                            | 2.50          | 8.53**        | F                          | 1.20          | .93           |
| Df                           | 1,54          | 2,53          | df                         | 1,52          | 2,51          |
| ▲R <sup>2</sup>              |               | .20**         | ▲R <sup>2</sup>            |               | .01           |
| ▲F                           |               | 13.96**       | ▲F                         |               | .66           |

+p≤.10; \*p≤.05; \*\*p≤.01.

Note: Table contains standardized regression coefficients (beta).

**TABLE 5**  
**Heirarchical Regression Analysis of Team Effectiveness and Team Reputation**  
**with Group Efficacy and Tenure Heterogeneity**

| <b>Effectiveness Model 1</b> | <b>Step 1</b> | <b>Step 2</b> | <b>Reputation Model 1</b> | <b>Step 1</b> | <b>Step 2</b> |
|------------------------------|---------------|---------------|---------------------------|---------------|---------------|
| Group Efficacy               | .49**         | .51**         | Group Efficacy            | .13           | .11           |
| Tenure Heterogeneity         |               | .10           | Tenure Heterogeneity      |               | -.13          |
| R <sup>2</sup>               | .24           | .25           | R <sup>2</sup>            | .02           | .04           |
| F                            | 16.87**       | 8.75**        | F                         | .94           | .90           |
| df                           | 1,54          | 2,53          | Df                        | 1,52          | 2,51          |
| ▲R <sup>2</sup>              |               | .01           | ▲R <sup>2</sup>           |               | .02           |
| ▲F                           |               | .72           | ▲F                        |               | .86           |
| <b>Effectiveness Model 2</b> | <b>Step 1</b> | <b>Step 2</b> | <b>Reputation Model 2</b> | <b>Step 1</b> | <b>Step 2</b> |
| Tenure Heterogeneity         | -.02          | .10           | Tenure Heterogeneity      | -.15          | -.13          |
| Group Efficacy               |               | .51**         | Group Efficacy            |               | .11           |
| R <sup>2</sup>               | .00           | .25           | R <sup>2</sup>            | .02           | .03           |
| F                            | .02           | 8.75**        | F                         | 1.15          | .90           |
| df                           | 1,54          | 2,53          | Df                        | 1,52          | 2,51          |
| ▲R <sup>2</sup>              |               | .25**         | ▲R <sup>2</sup>           |               | .01           |
| ▲F                           |               | 17.47**       | ▲F                        |               | .67           |

+p≤.10; \*p≤.05; \*\*p≤.01

Note: Table contains standardized regression coefficients (beta).

**FIGURE 1**  
Research Framework

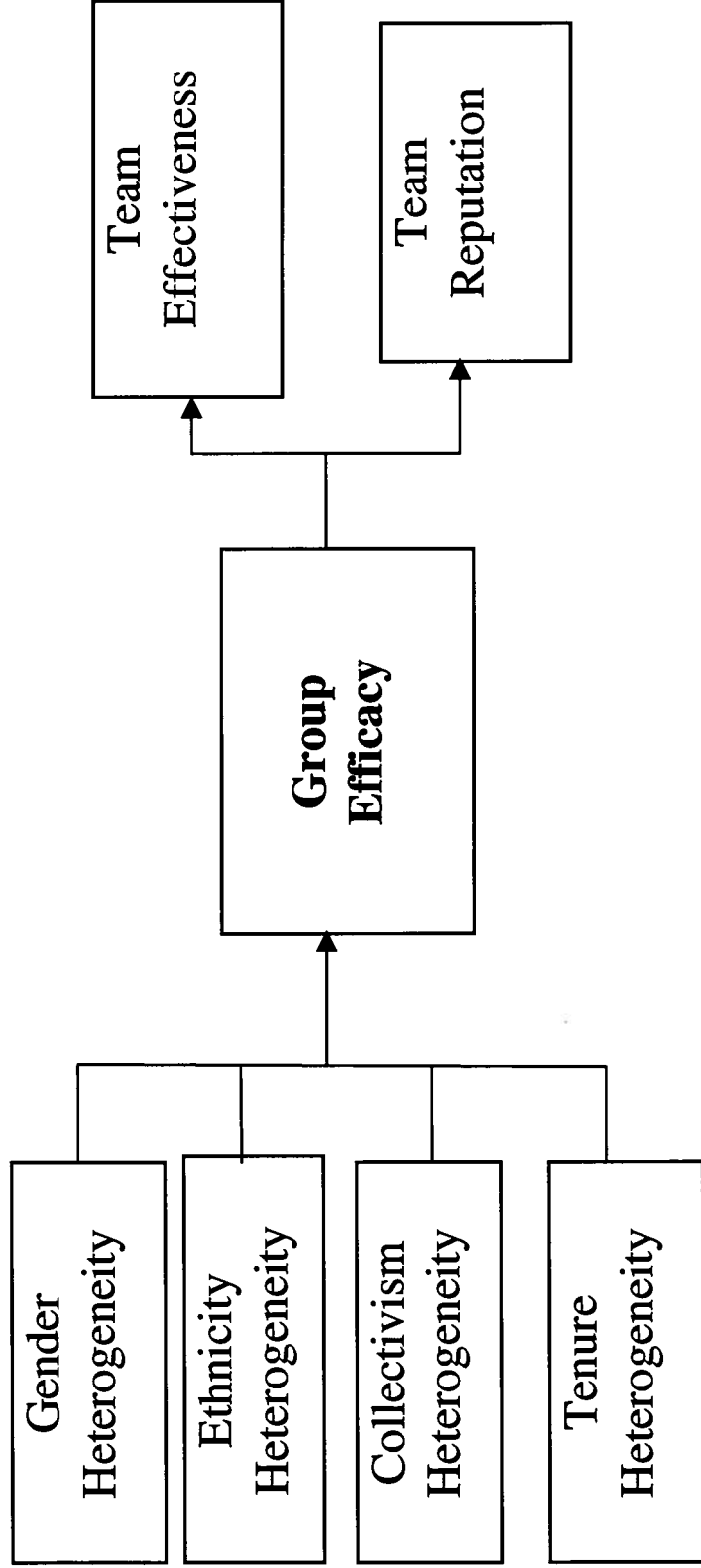
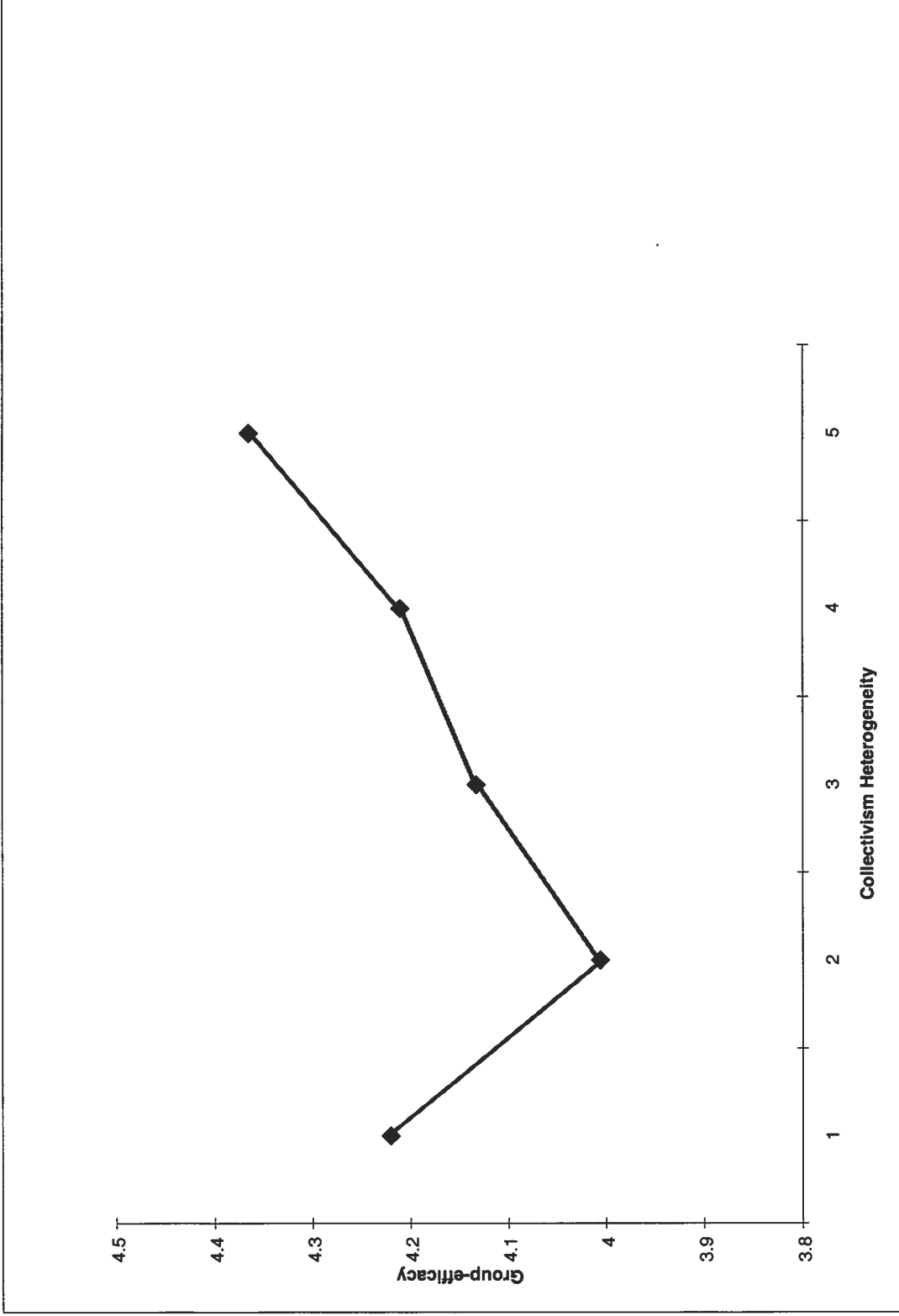


FIGURE 2



Group Efficacy Means Based on Levels of Collectivism Heterogeneity