

DIVERSITY AND TEAM PERFORMANCE: A META-ANALYSIS

Joon Hyung Park

University of Houston

Abstract

The impact of three types of diversity proposed by Harrison and Klein (2007) – separation, variety, and disparity – on team performance (quantitative performance, innovation and general performance) was tested through meta-analysis. Results showed that the effect of disparity diversity had a significant effect on innovation, but the other diversity types had no relationships with performance.

Key Words: team diversity, group heterogeneity, performance, meta-analysis

Diversity and Team Performance: A Meta-Analysis

As the world becomes more globalized, organizations continue to become more diversified employees from different ethnicities as well as educational and functional backgrounds (Milliken & Martins, 1996). According to Harrison and Klein (2007), the volume of research on diversity doubles every five years; there were only 19 studies in 1988, but 134 in 2003.

Even with the plethora of studies on diversity, results have shown that evidence for a relationship between diversity and performance is inconclusive (Harrison, Price, & Bell, 1998). Webber and Donahue (2001) argue that one of the reasons for this is that there are no firm agreements on conceptual definition among users. Also there is a lack of a theoretical framework in this literature for understanding diversity in teams and groups. Furthermore, there are no agreements on the typology of diversity.

To address this, Harrison and Klein (2007) proposed three distinctive types of diversity: separation, variety, and disparity. Harrison and Klein's typology (2007) provides a useful theoretical framework and guidelines for diversity research, and thus I performed a meta-analysis on the relationship of diversity and performance using this theoretical framework

Theoretical background

Definition of Teams and Diversity

Webber and Donahue (2001) use "teams" and "work groups" interchangeably and define them as "collections of individuals who are interdependent, share responsibility for outcomes, and are viewed as an intact social entity (p.143)." In this study, I also use these terms interchangeably.

Researchers use “diversity” to mean as heterogeneity or dissimilarity. Some researchers describe diversity as the characteristic of a group or of an organization that represents the degree of subjective or objective differences among people in the group (van Knippenberg & Shippers, 2007). Harrison and Klein (2007,) define diversity as “the distribution of differences among the members of a unit (p.1200)” in which there is a common attribute such as age, ethnicity, or attitude. Within-unit differences can stem from differences in gender, race, age, tenure, education, functional background, marital status, values, attitudes, affect, network ties, pay, and performance (Milliken & Martins, 1996, Jehn et al., 1999, Harrison & Klein, 2007, van Knippenberg & Shippers, 2007). Thus, the variation in attributes among members in groups creates diversity.

Typology of Diversity

Different authors delineate different dimensions of diversity. For example, Jehn et al (1999) classified diversity in three categories: social (e.g., race), value diversity, and informational diversity. Milliken and Martin (1996) presented two types of diversity, observable and nonobservable diversity. When differences are salient, diversity is likely to provoke responses that are due to bias. Pelled (1996) distinguished diversity in terms of the degree of job-relatedness and visibility.

The Relationship between Diversity and Outcome variables

Relationship between diversity and performance is inconclusive. Bantel and Jackson (1989) showed the positive effects of demographic (social) diversity on problem solving whereas O’Reilly et al. (1989) found that demographic diversity was positively related to turnover. Simons et al. (1999) found negative effects of informational diversity. Bunderson and Sutcliffe (2002) examined the effects of dominant functional (informational) diversity and intrapersonal

functional diversity (the aggregate functional breadth of team members) and found that informational diversity is negatively related to information sharing and group performance whereas intrapersonal functional diversity is positively related to information sharing and group performance. Webber and Donahue (2001) followed Pelled (1996)'s classification and performed a meta-analysis on two types of diversity. They found no reliable relationships for either highly job-related or less job-related diversity with group performance.

Harrison and Klein's Within-Unit Diversity Types

Harrison and Klein (2007) urge that the construct of diversity needs to be closely examined and refined. They argue that researchers reach ambiguous conclusions (or inconsistent results) without considering each type of underlying assumptions and characteristics and provide three distinctive types of diversity.

Harrison and Klein (2007) provided a diversity typology that consisted of separation, variety and disparity. They gave an example of eight members each in three teams. Members of S team (separation) have different attitudes toward a certain research paradigm. Four members are prone to qualitative research and the other half to quantitative research. Members of V team (variety) have different educational backgrounds. Members are from different departments (finance, economics, biology or management). Members of D team (disparity) have different ranks. For example, one of the members might be a renowned professor and some members can be first year research assistants.

Figure 1 below illustrates "Types and Amounts of Three Meanings of Within-Unit Diversity".

Figure 1 Inserted about Here

Separation. Members differ along a continuous attribute in the separation type of diversity. An attribute of this type can be a value, belief, or attitude regarding team goals and processes. The researchers predict reduced cohesiveness due to the conflict that diversity brings and eventually this leads to distrust and decreased task performance. Foundational theories for separation diversity are similarity/ attraction, social categorization, and attraction, selection and attrition (ASA) (Byrne, 1971, Tajfel, 1981, Schneider & Goldstein, 1995).

Brewer (1979) examined the effects of in-group and out-group on group outcomes. The difference in trait affects the salience of distinctions between in-group and out-group. There was increased favoritism toward in-group members whereas there was hostility toward out-group members. Sigal et al. (2000) examined the fit in trait positive affect between CEO and team members. A similar trait positive affect fit is related to positive outcomes in decision-making and financial performance. Affectively diverse in trait brings greater task and emotional conflict. Thus,

H1: The separation type of diversity will have a negative relationship with performance.

Variety. Variety type of diversity focuses on qualitative differences in members. Minimum variety occurs when all members are from the same category. Maximum variety means that all members are from distinct fields or different educational (functional) backgrounds.

The theoretical background for variety is information process theory (Hinsz et al., 1997) and cognition theory (Campbell, 1960, cited in Harrison & Klein, 2007). Members are from different pools of informational resources, and heterogeneity creates greater information richness and creativity. Thus, the predicted outcomes in variety are greater innovation, higher decision quality and increased flexibility.

Argote and Ingram (2000) argue that interactions with people who have different tacit knowledge are the source of competitiveness in firms. Hambrick et al. (1996) state that the overall effects of diversity on performance are positive in their study even though heterogeneous top management teams are slower in actions and responses. Smith et al. (1994) found that team heterogeneity in the years of education had a positive direct relationship with performance. Gibson and Vermeulen (2003) collected data from 156 teams in five pharmaceutical and medical product firms and found that heterogeneous teams were likely to engage in learning. Thus,

H2: The variety type of diversity will have a positive relationship with performance.

Disparity. Harrison and Klein (2007) state that disparity is found more common in sociology literature than organizational literature. The assumption of the disparity type of diversity is that members in groups have different levels of attributes such as pay, power, prestige and status. Minimum disparity means that each member has the same position and maximum disparity occurs when socially valued resources are relatively concentrated in one or two members.

Disparity is based on theories of deprivation (Deutsch, 1985, cited in Harrison & Klein, 2007) and tournament compensation (Lazear & Rosen, 1981). The predicted outcomes are more competition among members and resentful deviance and withdrawal. Disparity also might suppress creativity. In organizational literature, pay dispersion is the clearest example of disparity.

Bloom (1999) conducted interesting studies on pay dispersion of baseball players and found that more compressed pay dispersions are positively associated with organizational

performance. Pfeffer and Langton (1993) collected from 1,805 academic departments in 303 universities and found that more participative department governance was related to a more equal salary distribution whereas a greater tendency to work alone was associated with more disperse salary distribution. Siegel and Hambrick (2005) examined the effects of top management group pay disparity on firm performance. They found that collaboration among group members is negatively associated with larger pay disparities. Thus, disparity fosters competition among members, reduces cooperation and promotes resentful behaviors or attitudes.

H3: The disparity type of diversity will have a negative relationship with performance.

Method

Literature Search

A literature search was conducted to identify published reports that examined the relationship between diversity and performance. The articles were identified through several methods, including electronic searches of the PsychINFO (1887–2007) database.

To be inclusive, I conducted a broad search using the keywords group diversity, team diversity, team composition, heterogeneity, dispersion, dissimilarity, disagreement, inequality, homogeneity, agreement, consensus, convergence, and equality, social categorization, and information processing.

The electronic search was supplemented with a manual search of reference lists of key empirical and theoretical articles as well as reference sections from prior meta-analyses and chapters on team. In addition, I conducted a manual search for in-press articles at the *Journal of Applied Psychology*, *Academy of Management Journal*, *Administrative Science Quarterly*,

Strategic Management Journal, Journal of Management, and Organizational Behavior and Human Decision Process.

Inclusion Criteria

The abstracts obtained from the electronic search were reviewed for appropriate content and considered for inclusion in the meta-analysis. Studies were included if they involved the summarization of data and had the relevant correlations, the number of samples and reliabilities of independent and dependent variables to compute the effect size. In sum, a total of 144 correlations from 42 articles were included in this study.

Variables include in the analysis

The independent variables included heterogeneity (diversity) in age, educational, functional background, gender, racial background and tenure. I classified studies into Harrison and Klein's (2007) three types. The dependent variables included quantitative performance (financial performance measures like return on investment (ROI), return on equity (ROE), growth in market share, change in profitability), innovation (e.g., quality of ideas), and general performance (such as group effectiveness, team performance, and team project scores).

Meta-analysis procedure

The procedures used in this meta-analysis performed the techniques developed by Hunter and Schmidt (1990). For this study, meta-analysis software developed by Schmidt and Le was used. The required statistics were the individual correlations, the number of studies, and the reliabilities for the independent and dependent variables.

Results

Before examining hypotheses, I conducted meta-analyses on relationship between each separate diversity type and performance. The correlations where the diversity categories and the

outcome measures of quantity performance, innovation, and general performance are show in Table 1.

Table 1 Inserted about Here

The first six columns of the table contain, respectively, the number of correlation coefficients, the total number of samples, the estimated true correlation (ρ), the estimated true residual standard deviation (SD_{ρ}), the upper and lower bound of the 80% credibility value for each distribution based on its true correlation, the upper and lower bound of the 95% confidence interval for each distribution, and percent variance in corrected correlation due to sampling error (% VE).

The credibility value indicates whether the validity can be generalized. When the value is large and contains zero, there is high chance of the existence of moderators. The confidence interval provides information about the accuracy of the effect size estimated from the meta-analysis, such that when the interval includes “0” we cannot conclude that the obtained correlation from the meta-analysis is significantly different from zero (Whitener, 1990).

As Table 1 shows, most of the results indicate that we cannot conclude that the obtained correlation from the meta-analysis is significantly different from zero. There is no relationship between demographic diversity in age, functional, racial background heterogeneity and performance (quantity, general performance, and innovation). As for educational, gender and tenure heterogeneity, they do show some relationships with innovation. In sum, the results show that the relationship between demographic diversity and performance is inconclusive as the diversity literature review had suggested. The possible remedy for this problem would be classifying diversity by the right typology of diversity and testing for moderating effects.

This study tested Harrison and Klein's (2007) classification of diversity. The results are presented in Table 2. As Table 2 indicates, there is no relationship between separation type of diversity and quantity performance ($\rho = -.03$, 80% CV is $-.26, .21$, 95% CI is $-.38, .32$), innovation ($\rho = -.08$, 80% CV is $-.36, .20$, 95% CI is $-.51, .35$) and general performance ($\rho = .01$, 80% CV is $-.18, .20$, 95% CI is $-.28, .30$). The results did not support H1. Further, although the relationship between variety type of diversity and innovation ($\rho = .09$, 80% CV is $-.10, .29$, 95% CI is $-.20, .38$) and general performance ($\rho = .09$, 80% CV is $-.09, .27$, 95% CI is $-.18, .36$) is positive, there are no significant relationships because the confidence interval includes zero. The results also indicate no relationship between variety type of diversity and performance. Thus we failed to support H2.

Table 2 Inserted about Here

Finally, for the disparity type of diversity, there is a negative relationship between disparity diversity and innovation ($\rho = -.14$, 80% CV is $-.22, -.05$, 95% CI is $-.23, -.003$). While there are negative relationships between disparity type of diversity and quantity performance (and innovation), these confidence intervals include zero, ($\rho = -.03$, 80% CV is $-.16, .09$, 95% CI is $-.23, .17$; $\rho = -.15$, 80% CV is $-.43, .14$, 95% CI is $-.60, .30$). Thus, H3 is only supported with innovation.

It should be noted that less than 30% of the variance in the observed correlations across studies was explained by statistical artifacts (see Table 2). Pearlman, Schmidt, and Hunter (1980, cited in Weber and Donahue, 2001) have suggested that "if 75% or more of the variance in the observed correlations across studies is explained by artifacts (sampling error, measurement unreliability, and range restriction), then the presence of a moderated relationship

is unlikely". The results show that there is likely to be the presence of moderators following the Hunter and Schmidt (1990) 75% rule.

Discussion

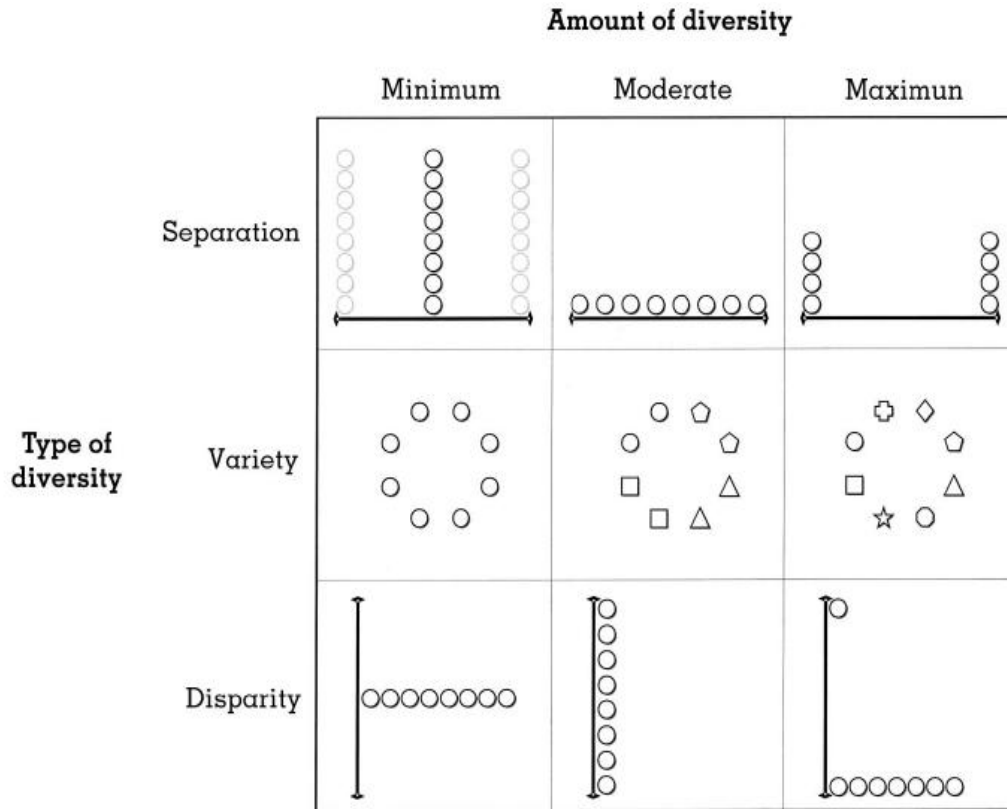
Recent meta-analyses reported with the same results as this study. Webber and Donnahue (2001) used two types of diversity attributes defined by Pelled (1996; Pelled et al., 1999) and did not find any relationship between diversity (highly job-related or less job-related diversity) and outcome variables such as cohesion and performance, as well as no moderation effects. Horwitz and Horwitz (2007) only found relationships between task-related diversity and team performance but no relationship between bio-demographic diversity and team performance or social integration. They also tested the moderating effects, and did not find any relationships.

Harrison and Klein (2007) proposed to remedy these inconsistent results or seemingly non-relationship results by differentiating three types of within-unit differences – separation, variety, and disparity. Although this study uses the classification of diversity they proposed, results were identical with previous meta-analyses studies. However, we need to be cautious interpreting this result. The present data show that moderation effects are likely to be present (%VE is less than 30). Some potential moderators could be task complexity (Bowers et al., 2000; Stewart & Barrick, 2000), team type (Cohen & Bailey, 1997), task interdependence (Burke et al., 2006; Duffy et al., 2000; Stewart & Barrick, 2000), team size (Gully et al., 1995; Magjuka & Baldwin, 1991) and methodological differences (Horwitz & Horwitz, 2007). Moderating variables may influence the magnitude and direction of these relationships. Further analyses to test the moderating effects are needed.

Another possible explanation is that the relationship between heterogeneity (diversity) and performance may be curvilinear (U-shaped) (Gibson & Vermeulen, 2003; Lau and Murnighan, 1998).

In conclusion, the results of this meta-analysis show that there is still an inconclusive relationship between diversity and performance. While this might suggest that such a relationship does not exist, it may also be that a more complex phenomenon is involved than has been expected. Future studies should continue to test other moderation effects that this study did not test and examine different outcome variables, such as cohesion or social integration.

Figure 1 Pictorial Representation of Types and Amounts of Three Meanings of Within-Unit Diversity



(Harrison, D. A. & Klein, K. J. (2007). What's the difference? Diversity constructs as separation, variety, or disparity in organizations. *Academy of Management Review*, 32(4): pg1202)

Table 1. *Meta-Analytic Results for Relationships Between Diversity Types and Outcome variables*

Outcomes Variables	<i>K</i>	<i>N</i>	ρ	SD_{ρ}	80% C.V.	95% C.I.	% VE
Age Heterogeneity							
Quantity Performance	4	811	-.04	.19	-.28, .20	-.41, .33	12
Innovation	4	1864	-.13	.15	-.32, .07	-.42, .16	10
General Performance	9	4735	.04	.14	-.14, .22	-.23, .31	11
Educational Heterogeneity							
Quantity Performance	5	2558	-.04	.06	-.12, .04	-.16, .08	33
Innovation	3	1569	.23	.02	.21, .26	.19, .27	84
General Performance	5	2788	.13	.06	.05, .21	.01, .25	36
Functional Heterogeneity							
Quantity Performance	9	1600	-.13	.12	-.29, .03	-.37, .11	28
Innovation	8	2913	.11	.14	-.07, .29	-.16, .38	14
General Performance	10	4338	.12	.15	-.07, .30	-.17, .41	11
Gender Heterogeneity							
Quantity Performance	-	-	-	-	-	-	-
Innovation	4	1798	-.26	.04	-.31, -.21	-.34, -.18	59
General Performance	14	5378	-.07	.16	-.27, .13	-.38, .24	11
Racial Heterogeneity							
Quantity Performance	-	-	-	-	-	-	-
Innovation	-	-	-	-	-	-	-
General Performance	10	2704	.04	.11	-.11, .18	-.18, .26	25
Tenure Heterogeneity							
Quantity Performance	10	3443	-.03	.10	-.16, .09	-.23, .17	24
Innovation	2	1490	-.12	.04	-.17, -.07	-.20, -.04	47
General Performance	8	3602	-.13	.23	-.43, .17	-.58, .32	5

Note. *K* = number of correlations; *N* = total sample size; ρ = the estimated true correlation; SD_{ρ} = the estimated true residual standard deviation; 80% C.V. = the upper and lower bound of the 80% credibility value for each distribution based on its true correlation; 95% C.I.: the upper and lower bound of the 95% confidence interval for each distribution; % VE = percent variance in corrected correlation due to sampling error.

Table 2. *Meta-Analytic Results for Relationships Between Harrison and Klein's Diversity Types and Outcome variables*

Outcomes Variables	<i>K</i>	<i>N</i>	ρ	SD_{ρ}	80% C.V.	95% C.I.	% VE
Separation							
Quantity Performance	9	1540	-.03	.18	-.26, .21	-.38, .32	15
Innovation	7	5003	-.08	.22	-.36, .20	-.51, .35	3
General Performance	36	14244	.01	.15	-.18, .20	-.28, .30	12
Variety							
Quantity Performance	10	3867	-.04	.14	-.20, .13	-.31, .23	13
Innovation	16	4116	.09	.15	-.10, .29	-.20, .38	16
General Performance	17	7560	.09	.14	-.09, .27	-.18, .36	12
Disparity							
Quantity Performance	10	3443	-.03	.10	-.16, .09	-.23, .17	24
Innovation	3	1622	-.14	.07	-.22, -.05	-.23, -.003	30
General Performance	9	3583	-.15	.23	-.43, .14	-.60, .30	6

Note. *K* = number of correlations; *N* = total sample size; ρ = the estimated true correlation; SD_{ρ} = the estimated true residual standard deviation; 80% C.V. = the upper and lower bound of the 80% credibility value for each distribution based on its true correlation; 95% C.I.: the upper and lower bound of the 95% confidence interval for each distribution; %VE = percent variance in corrected correlation due to sampling error.

References

References marked with an asterisk indicate studies included in the meta-analyses.

- *Ancona, D. G. & Caldwell, D. F. (1992). Demography and design: Predictors of new product of team performance. *Organization Science*, 3(3): 321-341.
- Allison, P. D. (1978). Measures of inequality. *American Sociological Review*, 43, 865-880.
- Argote, L. & Ingram, P. (2000). Knowledge Transfer: A Basis for Competitive Advantage in Firms. *Organizational Behavior and Human Decision Processes*, 82(1): 150-169.
- *Bantel, K. A. (1994). Strategic planning openness: The role of top team demography. *Group & Organization Management*, 19(4): 406.
- * 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.
- *Barkema, H. G. & Shvyrkov, O. (2007). Does top management team diversity promote or hamper foreign expansion? *Strategic Management Journal*, 28(7): 663-680.
- Barry, B. & Stewart, G. L. (1997). Composition, process, and performance in self-managed groups: The role of personality. *Journal of Applied Psychology*, 82(1): 62-78.
- *Barsade, S. G., Ward, A. J., Turner, J. D. R., & Sonnenfeld, J. A. (2000). To Your Heart's Content: A Model of Affective Diversity in Top Management Teams. *Administrative Science Quarterly*, 45(4): 802-836.
- Blau, P. M. (1977). *Inequity and heterogeneity*. New York: Free Press.
- *Bloom, M. (1999). The performance effects of pay dispersion on individuals and organizations. *Academy of Management Journal*, 42(1): 25.
- Bowers, C. A., Pharmed, J. A., & Salas, E. (2000). When Member Homogeneity Is Needed in Work Teams: A Meta-Analysis. *Small Group Research*, 31(3): 305-327.
- Brewer, M. B. (1979). In-group bias in the minimal intergroup situation: A cognitive-motivational analysis. *Psychological Bulletin*, 86(2): 307-324.
- Brodbeck, F. C., Kerschreiter, R., Mojzisch, A., & Schulz-Hardt, S. (2007). Group decision making under conditions of distributed knowledge: The information asymmetries model. *Academy of Management Review*, 32(2): 459-479.
- Burke, S. S., Stagl, K. C., Klein, C., Goodwin, G. F., Salas, E., & Halpin, S. M. (2006). What type of leadership behaviors are functional in teams? A meta-analysis. *Leadership Quarterly*, 17: 288-307.
- Byrne, D. (1971). *The attraction paradigm*. New York: Academic Press.

- * Bunderson, J. S. & Sutcliffe, K. M. (2002). Comparing alternative conceptualizations of functional diversity in management teams: Process and performance effects. *Academy of Management Journal*, 45(5): 875-893.
- *Cady, S. H. & Valentine, J. (1999). Team Innovation and Perceptions of Consideration: What Difference Does Diversity Make? *Small Group Research*, 30(6): 730-750.
- Campbell, D. T. (1960). Blind variation and selective retention in creative thought as in other knowledge processes. *Psychological Review*, 67: 380-400.
- *Carpenter, M. A. & Fredrickson, J. W. (2001). Top management teams, global strategic posture, and the moderating role of uncertainty. *Academy of Management Journal*, 44(3): 533-545.
- *Cavarretta, F. (2007). Better, Best or Worst Team? Linking Intra-Team Diversity to Extreme Team Performance. *INSEAD Working Papers Collection* (56): 1-47.
- *Chatman, J. A. & Flynn, F. J. (2001). The influence of demographic heterogeneity of the emergence and consequences of cooperative norms in work teams. *Academy of Management Journal*, 44(5): 956-974.
- *Chowdhury, S. (2005). Demographic diversity for building an effective entrepreneurial team: is it important? *Journal of Business Venturing*, 20(6): 727-746.
- Cohen, S. G., & Bailey, D. E. (1997). What makes teams work: Group effectiveness research from the shop floor to the executive suite. *Journal of Management*, 23: 230-290.
- *Cummings, J. N. (2004). Work Groups, Structural Diversity, and Knowledge Sharing in a Global Organization. *Management Science*, 50(3): 352-364.
- *Curseu, P. L., Schrujier, S., & Boros, S. (2007). The effects of groups' variety and disparity on groups' cognitive complexity. *Group Dynamics: Theory, Research, and Practice*, 11(3): 187-206.
- Deutsch, M. (1985). *Distributive justice: A social psychological perspective*. New Haven, CT: Yale University Press.
- *Devine, D. J., Clayton, L. D., Philips, J. L., Dunford, B. B., & Melner, S. B. (1999). Teams in Organizations: Prevalence, Characteristics, and Effectiveness. *Small Group Research*, 30(6): 678-711.
- *Drach-Zahavy, A. & Somech, A. (2001). Understanding team innovation: The role of team processes and structures. *Group Dynamics: Theory, Research, and Practice*, 5(2): 111-123.
- *Drach-Zahavy, A. & Anit, S. (2002). Team heterogeneity and its relationship with team support and team effectiveness. *Journal of Educational Administration*, 40(1): 44.
- Duffy, M. K, Shaw, J. D., & Stark, E. M. (2000). Performance and satisfaction in conflicted interdependent groups: When and how does self-esteem make a difference? *Academy of Management Journal*, 43: 772-782.
- Gaertner SL, Dovidio JF. (2000). *Reducing Intergroup Bias. The Common Ingroup Identity Model*.

Philadelphia, PA: Psychol. Press

Gibson, C. & Vermeulen, F. (2003). A Healthy Divide: Subgroups as a Stimulus for Team Learning Behavior. *Administrative Science Quarterly*, 48(2): 202-239.

Gully, S. M., Devine, D. J., & Whitney, D. J. (1995). A meta-analysis of cohesion and performance: Effects of level of analysis and task interdependence. *Small Group Research*, 26: 497-520.

Guzzo, R. A. & Dickson, M. W. (1996). Teams in organizations: Recent research on performance and effectiveness. *Annual Review of Psychology*, 47(1): 307.

* Hambrick, D. C., Cho, T. S., & Chen, M.-J. (1996). The influence of top management team heterogeneity on firms' competitive moves. *Administrative Science Quarterly*, 41(4): 659.

* Harrison, D. A., Price, K. H., & Bell, M. P. (1998). Beyond relational demography: Time and the effects of surface- and deep-level diversity on work group cohesion. *Academy of Management Journal*, 41(1): 96-107.

* Harrison, D. A., Price, K. H., Gavin, J. H., & Florey, A. T. (2002). Time, teams, and task performance: Changing effects of surface- and deep-level diversity on group functioning. *Academy of Management Journal*, 45(5): 1029-1045.

Harrison, D. A. & Klein, K. J. (2007). What's the difference? Diversity constructs are separation, variety, or disparity in organizations. *Academy of Management Review*, 32(4): 1199-1228.

Hinsz, V. B., Tindale, R. S., & Vollrath, D. A. (1997). The emerging conceptualization of groups as information processes. *Psychological Bulletin*, 121(1): 43-64.

Horwitz & Horwitz. (2007). The Effects of Team Diversity on Team Outcomes: A Meta-Analytic Review of Team Demography. *Journal of Management*, 33(6): 987-1015.

Hunter, J.E., & Schmidt, F.L. (1990). *Methods of meta-analysis: correcting error and bias in research findings*. Newbury Park, CA: Sage Publication.

Ilggen, D. R., Hollenbeck, J. R., Johnson, M., & Jundt, D. (2005). Teams in organizations: From input-process-output models to IMO models. *Annual Review of Psychology*, 56(1): 517-543.

Jackson S.E. (1992). Team composition in organizational settings: issues in managing an increasingly diverse work force. In *Group Process and Productivity*, ed. S Worchel, W Wood, JA Simpson, pp. 136-80. Newbury Park, CA: Sage

*Jehn, K. A., Clint, C., & Sherry, M. B. T. (1997). To agree or not to agree: The effects of value congruence, individual demographic dissimilarity, and conflict on workgroup outcomes. *International Journal of Conflict Management*, 8(4): 287.

*Jehn, K. A., Northcraft, G. B., & Neale, M. A. (1999). Why Differences Make a Difference: A Field Study of Diversity, Conflict, and Performance in Workgroups. *Administrative Science Quarterly*, 44(4): 741-763.

- *Jennifer, A. C., Jeffrey, T. P., Sigal, G. B., & Margaret, A. N. (1998). Being different yet feeling similar: The influence of demographic composition and organizational culture on work processes and outcomes. *Administrative Science Quarterly*, 43(4): 749.
- *Keller, R. T. (2001). Cross-functional project groups in research and new product development: Diversity, communications, job stress, and outcomes. *Academy of Management Journal*, 44(3): 547-555.
- Kerr, N. L. & Tindale, R. S. (2004). Group performance and decision making. *Annual Review of Psychology*, 55(1): 623-655.
- Locke, K. D. & Horowitz, L. M. (1990). Satisfaction in interpersonal interactions as a function of similarity in level of dysphoria. *Journal of Personality and Social Psychology*, 58(5): 823-831.
- Lau, D. C., & Murnighan, J. K. (1998). Demographic diversity and faultlines: the compositional dynamics of organizational groups. *Academy of Management Review*, 23 (2), 325-340.
- *Lovelace, K., Shapiro, D. L., & Weingart, L. R. (2001). Maximizing cross-functional new product teams' innovativeness and constraint adherence: A conflict communications perspective. *Academy of Management Journal*, 44(4): 779-793.
- Magjuka, R. J., & Baldwin, T. T. (1991). Team-based employee involvement programs: Effects of design and administration. *Personnel Psychology*, 44: 793-812.
- *Martins, L. L., Frances, J. M., Batia, M. W., & Susan, R. S. (2003). Racioethnic diversity and group members' experiences: The role of the racioethnic diversity of the organizational context. *Group & Organization Management*, 28(1): 75.
- *Mason, C. M. (2006). Exploring the Processes Underlying Within-Group Homogeneity. *Small Group Research*, 37(3): 233-270.
- *Mayo, M., Pastor, J. C., & Meindl, J. R. (1996). The effects of group heterogeneity on the self-perceived efficacy of group leaders. *The Leadership Quarterly*, 7(2): 265-284.
- McGrath, J. E., Berdahl, J. L., & Arrow, H. (1995). Traits, expectations, culture, and clout: The dynamics of diversity in work groups. In S. E. Jackson & M. N. Ruderman (Eds), *Diversity in work teams: Research paradigms for a changing workplace*: 17-45. Washington, DC: American Psychological Association.
- 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(2): 402-433.
- *Mohammed, S. & Angell, L. C. (2004). Surface- and deep-level diversity in workgroups: examining the moderating effects of team orientation and team process on relationship conflict. *Journal of Organizational Behavior*, 25(8): 1015-1039.
- Mohammed, S. & Angell, L. C. (2003). Personality Heterogeneity in Teams: Which Differences Make a Difference for Team Performance? *Small Group Research*, 34(6).

- * O'Reilly III, C. A., Caldwell, D. F., & Barnett, W. P. (1989). Work Group Demography, Social Integration, and Turnover. *Administrative Science Quarterly*, 34(1): 21.
- Pearlman, K., Schmidt, F. L., & Hunter, J. E. (1980). Validity generalization results for tests used to predict job proficiency and training success in clerical occupations. *Journal of Applied Psychology*, 65 (4), 373–406.
- Pelled, L. H. (1996). Demographic Diversity, Conflict, and Work Group Outcomes: An Intervening Process Theory. *Organization Science*, 7(6): 615.
- *Pelled, L. H., Cummings, T. G., & Kizilos, M. A. (2000). The Influence of Organizational Demography on Customer-Oriented Prosocial Behavior: An Exploratory Investigation. *Journal of Business Research*, 47(3): 209-216.
- * 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): 1.
- Pfeffer, J. & Langton, N. (1988). Wage Inequality and the Organization of Work: The Case of Academic Departments. *Administrative Science Quarterly*, 33(4): 588.
- Priem, R. L., Lyon, D. W., & Dess, G. G. (1999). Inherent Limitations of Demographic Proxies in Top Management Team Heterogeneity Research. *Journal of Management*, 25(6): 935.
- Randel, A. E. (2002). Identity salience: a moderator of the relationship between group gender composition and work group conflict. *Journal of Organizational Behavior*, 23(6): 749.
- *Richard, O., McMillan, A., Chadwick, K., & Dwyer, S. (2003). Employing an innovation strategy in racially diverse workforces: Effects on firm performance. *Group & Organization Management*, 28(1): 107.
- Rosenthal, R. (1995). Writing Meta-Analytic Reviews, *Psychological Bulletin*, Vol. 118, No.2, 183-192.
- *Sargent, L. D. & Sue-Chan, C. (2001). Does Diversity Affect Group Efficacy?: The Intervening Role of Cohesion and Task Interdependence. *Small Group Research*, 32(4): 426-450.
- *Schippers, M. C., Den Hartog, D. N., Koopman, P. L., & Wienk, J. A. (2003). Diversity and team outcomes: the moderating effects of outcome interdependence and group longevity and the mediating effect of reflexivity. *Journal of Organizational Behavior*, 24(6): 779-802.
- Schneider, B., & Goldstein, H. W. (1995). The ASA framework: An update. *Personnel Psychology*, 48: 747–773.
- * Siegel, P., A. & Hambrick, D., C. (2005). Pay Disparities Within Top Management Groups: Evidence of Harmful Effects on Performance of High-Technology Firms. *Organization Science*, 16(3): 259.
- Sigal, G. B., Andrew, J. W., Jean, D. F. T., & Jeffrey, A. S. (2000). To your heart's content: A model of affective diversity in top management teams. *Administrative Science Quarterly*, 45(4): 802.

- * Simons, T., Pelled, L. H., & Smith, K. A. (1999). Making use of difference: Diversity, debate, and decision comprehensiveness in top management teams. *Academy of Management Journal*, 42(6): 662-673.
- *Smith, K. G., Smith, K. A., Olian, J. D., Sims, H. P., Jr., & et al. (1994). Top management team demography and process: The role of social integration and communication. *Administrative Science Quarterly*, 39(3): 412.
- *Somech, A. (2006). The Effects of Leadership Style and Team Process on Performance and Innovation in Functionally Heterogeneous Teams. *Journal of Management*, 32(1): 132-157.
- Stewart, G., & Barrick, M. R. (2000). Team structure and performance: Assessing the mediating role of intrateam process and the moderating role of task type. *Academy of Management Journal*, 43: 135-148.
- Tajfel, H. (1981). *Human groups and social categories: Studies in social psychology*. Cambridge: Cambridge University Press.
- Tsui, A. S., Egan, T. D., & O'Reilly, C. A., III. (1992). Being different: Relational demography and organizational attachment. *Administrative Science Quarterly*, 37(4): 549.
- * Van der Vegt, G. S. & Janssen, O. (2003). Joint Impact of Interdependence and Group Diversity on Innovation. *Journal of Management*, 29(5): 729-751.
- *Van der Vegt, G. S. & Bunderson, J. S. (2005). Learning and performance in multidisciplinary teams: The importance of collective team identification. *Academy of Management Journal*, 48(3): 532-547.
- Van Knippenberg, D., De Dreu, C. K. W., & Homan, A. C. (2004). Work Group Diversity and Group Performance: An Integrative Model and Research Agenda. *Journal of Applied Psychology*, 89(6): 1008-1022.
- Van Knippenberg, D. & Schippers, M. C. (2007). Work Group Diversity. *Annual Review of Psychology*, 58: 515-541.
- Webber, S. S. & Donahue, L. M. (2001). Impact of highly and less job-related diversity on work group cohesion and performance: a meta-analysis. *Journal of Management*, 27(2): 141-162.
- Wegner, D. M. (1986). Transactive memory: A contemporary analysis of the group mind. In B. Mullen & G. R. Goethals (Eds.), *Theories of group behavior* (pp. 185–205). New York: Springer-Verlag.
- Whitener, E. M. (1990). Confusion of confidence intervals and credibility intervals in meta-analysis. *Journal of Applied Psychology*, 75 (3), 315–321.
- Williams K.Y., & O'Reilly C.A. (1998). Demography and diversity in organizations: a review of 40 years of research. *Research in Organizational Behavior*. 20: 77-140.
- *Yeh, Y.-J. & Chou, H.-W. (2005). Team composition and learning behaviors in cross-functional teams. *Social Behavior & Personality: An International Journal*, 33(4): 391-402.