Exploring The Black Box:
The Impact of Demographic Diversity on Organizational Attachment Through Communication

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Abstract

This paper studies the demographic diversity/similarity of individuals with members of their work environments through the lens of their perceived organizational context, and uses communication as the mechanism through which employees develop organizational attachment. I investigate the black box between demographic diversity and organizational attachment from two angels. First, a process model with communication as the mediator provides one explanation of why the relationship exists. Second, this study extends the current literature on organizational demography from a group level to a perceived organizational level phenomenon by proposing and examining the importance of an individual’s “organizational reference group” as an essential conceptualization of the organizational context for organizational members. In other words, I explore how an individual’s organizational experiences are impacted by the perceived organizational context, which can be captured by the construct of organizational reference group, rather than assuming that all organizational members experience a uniform social context that includes everybody in the same organization.

Specifically, I adopt a relational demography approach and focus on demographic attributes such as age, gender, race, organizational tenure, education rather than personality, interest, or skills. Findings of this study questions the uniform effects of all demographic attributes, and suggests that communication may either reinforce, change or mediate the relationship between demographic diversity and organizational attachment.
How does demographic diversity influence organizational attachment? What is happening in the black box (Lawrence, 1997) in between? What is the appropriate context to examine the impact of demographic diversity in organizations? These intriguing and important questions still remain largely unanswered to date in the organizational demography literature. This paper aims to provide a preliminary answer by using communication as the intervening process to explain how employees develop attachment with the organization, and by arguing that in organizational settings, a broader social context, namely “organizational reference group” (Lawrence, 2003), which goes beyond that of the formal work group should be used in studying the impact of demographic diversity. In this paper, demographic diversity and demographic similarity are used interchangeable as two sides of the same coin.

Analyzing the relationship between workers' demographic variables and their behaviors and attitudes has a long tradition in industrial and organizational psychology (e.g., Schreiber, 1979). Demography researchers have established that the more similar an individual is with the members of his or social context, the easier it is to be integrated with the social unit through three major psychological processes: similarity attraction, social identification and social categorization. Most academic research concerns the impact of demographic similarity on individual, group and organizational outcomes within dyadic relationships and groups (Zenger & Lawrence, 1989; Tsui, Edgan & O’Reilly, 1992; Tsui & O’Reilly, 1989; Jackson et al., 1991; O’Reilly, Caldwell & Barnett, 1989; Pelled, 1996; Wagner, Pfeffer, & O’Reilly, 1984; Wiersema & Bird, 1993; Dwyer, Richard, & Shepherd, 1998;), with a handful of empirical studies on the organizational level (Ely, 1994; Hoffman, 1985). Nonetheless, although empirical research has made progress in understanding this complex relationship, much needs to be done to explore why and how demographic diversity leads to the outcomes that are of interest to researchers and practitioners. Researchers have studied personality trait (Flynn, Chatman & Spataro, 2001), cognitive diversity (Kilduff, Angelmar & Mehra,
conflict (Pelled, Eisenhardt & Xin, 1999), social integration (O’Reilly, Caldwell & Barnett, 1989) and other possible mechanisms through which demographic diversity works, mostly on task outcomes (Tsui & Gutek, 1999). These studies demonstrate that demographic diversity influences work related attitudes and behaviors through a variety of mechanisms. Much needs to be done to further understand how demographic diversity leads to social outcomes such as organizational attachment. This paper uses communication as a starting point to explore this black box between demographic diversity and organizational attachment. Communication is a powerful and essential mechanism through which individuals exchange information about the organization, and therefore develop attachment with it. Organizational attachment is important for organizations to reduce turnover, and for employees to make their work life more meaningful. Investigating such a process model will help us better understand the dynamics through which demographic diversity influences employees’ social experiences in organizational contexts. Organizations can learn to more effectively manage the increasingly diverse work force by influencing the communication patterns of their employees.

In brief, this paper aims to answer the overall research question of “How does the perceived organizational context influence the relationship between demographic diversity and his or her organizational attachment through communication?” I answer this question by first clarifying the importance of putting individuals in a perceived organizational context—the organizational reference group (Lawrence, 2003), and then by testing a process model that uses communication as the mediating construct between demographic similarity and organizational attachment. Structural equation modeling is used to analyze a dataset with 537 employees from a large organization.
Theoretical Background and Hypotheses

Demography research has accumulated much understanding on the role of individuals' demographic similarity on important organizational outcomes (both social and task outcomes). In this paper, I focus on organizational attachment as one example of the social outcomes. Specifically, “demographic diversity” refers to individual differences, such as age, gender, ethnicity, education, organizational tenure and job level, among group members. Organizational attachment is an individual's psychological and behavioral involvement in the organization of which he or she is a member (adapted from Tsui, Egan & O'Reilly, 1992).

Organizational Reference Group as the Social Context for Demographic Diversity

Within an organization, organizational members experience more than one level of social context—both on the group level and the organizational level. To date, demography researchers have examined the impact of demographic diversity mostly on the group level (with dyad being a special case of a group of two). The few exceptions that study demographic diversity on the organizational level assume that all members of the same organization share one uniform understanding of the organizational context. In other words, studies to date either treat work group as the boundary for the effects of demographic diversity, or use the whole organization as one uniform social context for all organizational members without considering possible perceptual differences. This curious omission suggests that a refined conceptualization is needed to advance understanding of the impact of demographic diversity on organizational attachment.

Although Lawrence (1997) pointed out the importance of studying domain—the context within which a demographic unit is studied (p. 6)—in understanding the impact of demography on organizational outcomes, demography researchers have not made much progress in this regard. When the level of analysis is individual-within-the-group (e.g., Klein, Dansereau & Hall, 1994), that is, each individual relative to all other group members, the domain that is usually studied is the formal work group as defined in the organization chart. Relational demography, the study of
individual-within-the-group phenomena, examines the impact of an individual's demographic similarity with the rest of his or her group members on group processes and outcomes such as group cohesion, communication and social integration (e.g., Zenger & Lawrence, 1989; Tsui, Edgan & O’Reilly, 1992; Tsui & O’Reilly, 1989; Jackson et al., 1991; O’Reilly, Caldwell & Barnett, 1989; Pelled, 1996; Wagner, Pfeffer, & O’Reilly, 1984; Wiersema & Bird, 1993). Yet employees’ interaction with the organization goes well beyond the formal work group. Also, employees of the same organization may form very different perceptions of the organizational context in spite of the same organizational membership due to different compositions of their organizational reference group (Lawrence, 2003). This paper introduces an individual's perception of his or her social context—an organizational reference group (Lawrence, 2003)—as the appropriate domain to study demographic diversity. I explore how this perceived organizational context impacts individuals’ attachment with the organization, rather than assuming that all organizational members experience a uniform organizational context.

On the organizational level, demography studies have unanimously followed the notion that all employees in an organization share a uniform organizational context—the whole organization as the single source to become identified with various “psychological groups” for all organizational members (Tsui et al., 1992; Tsui & Gutek, 1999). This approach assumes that there is no distinction between individual perceptions of the organizational context. But as they also acknowledge (Tsui & Gutek, 1999, p. 101-102), in large organizations, it is impossible for employees to have direct contact with, or to be acquainted with, or to be even aware of all other organizational members. Therefore, it is misleading to use the demographic diversity of the whole organization as the single contextual variable for all employees. Rather, as Lawrence (2003) proposed, in large organizations, as it is impossible for employees to be fully aware of everybody else, employees tend to select an “organizational reference group”—defined as “the set of people that an individual perceives as belonging to his or her work environment and who define the social world of work in which he or she
engages” (Lawrence, 2003)—which includes both close and distant associations. The difference lies in the fact that, in the former stream of research, all organizational members experience one uniform “organizational context” which includes everybody in the organization. Therefore, demographic diversity in every part and every level of the organization is expected to cast the same impact on individual employees, even if the particular employee may not have a clear picture of what is going on in the whole organization. In the latter case, as employees only know a “sample” rather than the whole population of the organization, it is proposed that only those included in the organizational reference group constitute the “organizational context” of the employee. According to this new conceptualization of the organizational context, employees of the same organization may have totally different, or partially overlapping perceptions of their social context. Therefore, in this paper I recognize the importance of distinguishing the “perceived” organizational context and the “assumed” organizational context, and aim to investigate the differences in the demographic compositions of these two “contexts”, and how this “perceived” organizational context influences individual social outcomes with the organization.

**Relational Demography: Starting to Put Individuals into Social Context**

Since late the 90’s, researchers have indicated that diversity research must consider not only individual demographic variables, but also situational variables that comprise the social context within which the individual operates (e.g., Kanter, 1977; Wagner, Pfeffer, & O’Reilly, 1984). The argument is that individual demographic variables, by themselves, may not adequately reflect the full meaning and impact of diversity within a work setting, especially because most individuals work within social context such as groups. Therefore, a complete examination of diversity needs to address individuals within the context of this social environment. One theory that provides a basis for predicting how individual demographic characteristics and the social context interact is relational demography (Mowday & Sutton, 1993; Riordan & Shore, 1997).
Relational demography proposes that it is an individual's demographic attributes relative to those within his or her work environment rather than his or her demographic attributes independent of those others that predict individuals’ work-related attitudes and behaviors. The level of an individual’s similarity or dissimilarity in demographic attributes to the composition of his or her social unit is proposed to affect the individual’s work-related attitudes and behaviors. Thus, the same individual demographic characteristic may yield different work-related attitudes in different social contexts. For example, Zenger and Lawrence (1989) found that the more similar an individual’s age is relative to the ages of the other members of his or her project group, the more frequently the individual communicates with other members concerning technical issues. Although still at an early stage, the relational demography approach illustrates the importance of embedding individuals in their social context. Therefore, this paper focuses on relational, rather than simple and compositional approaches in studying demography.

Table 1 shows the demographic approaches that can be used to study demographic diversity on the different levels of analysis. As illustrated in Table 1, there is ample evidence that the demographic context within formal work groups and the whole organization affect individuals’ behaviors and attitudes at work. What remains unanswered from Table 1 is an analysis that uses the perceived organizational context—organizational reference group—that functions beyond the scope of the formal work groups to affect employees’ organizational attachment. As argued above, over time, advancements in the demography literature have collectively led to the conclusion that relational demography is a useful approach to study the influence of demographic diversity (Tsui & Gutek, 1999). Therefore, this paper attempts to answer questions represented by the third column—i.e., “how does the demographic context on the “perceived” organizational level affect individuals’ organizational attachment with the organization”?

Insert Table 1 about Here
Theoretical underpinning of relational demography

Underlying the concept of relational demography is the construct of demographic similarity/diversity that characterizes the degree to which an individual's demographic attributes are shared by other members of a social unit. Historically, the conceptual foundation for research on relational demography within social units (e.g., Tsui et al., 1992) has been social identity theory (Tajfel, 1978), self-categorization theory (Turner, 1982, 1984), and the similarity-attraction paradigm (Byrne, 1971). On the organizational level, especially when the organization is too large for employees to establish interpersonal interactions with all other members, social identity theory and self-categorization theory are more relevant than similarity-attraction paradigm. This is because the similarity-attraction paradigm requires interpersonal interaction, while social identity and self-categorization theory allow for impersonal identification with certain demographic groups without necessarily engaging in direct contact. These theories as they pertain to relational demography are briefly discussed below.

Both social identity and self-categorization theories propose that an individual's self-definition or self-identity is determined, in part, by his or her group memberships. It is worth noting that the mechanisms through which demographic diversity influences employees on these two levels are different. Group level demographic diversity influences organizational attachment through interpersonal interaction and identification, and organizational level demography works through impersonal categorization and identification without necessarily engaging in direct contact.

According to self-categorization theory (Turner, 1987), categorization is foundational to cognitive process (see, e.g., Brewer, 1979; Brewer & Miller, 1984; Pettigrew, 1979; Tajfel, 1978, 1982). Human perception relies heavily on categories and categorization of both people and things. It is through categorizing that we see meaningful patterns in the wide array of stimuli with which we are confronted. This categorization is “a fundamental aspect of thought” (Gudykunst, 1994: 112-113). It is worth noting that social identification and social categorization do not necessarily require
direct interpersonal interactions. This forms the basis for the argument that organizational level demography may directly influences individuals through categorizing people by salient demographic attribute, and also identification with this social identity (e.g., female, or black). Researchers label such groups as “psychological groups” (Tsui & Gutek, 1999).

Categorization, however, is based on selective perception (Abelson et al., 1968). We see some things and ignore others. This selectivity in perception leads to the conclusion that in large organizations, when it is impossible for all members to interact with each other, perception matters through selecting organizational reference groups. Therefore, the difference in perception of the organizational context is key in understanding the impact of organizational diversity on attachment.

Once categories are formed, they guide, although they do not entirely circumscribe, observation and they can have an effect as well on both memory and integration. Past research has found that the existence of categories is associated with the designation of “out groups” (those who are thought of as not like ourselves and who are not favored) (Brewer & Miller, 1988). The selectivity of information used to make categorical distinctions leads to both social stereotyping (Fiske, 1987; Tajfel, 1981), in which negative pre-judgments are often made about out group members and positive pre-judgments about in group members, and processes of attribution in which we favorably interpret our own behaviors but unfavorably interpret those of out groups (Pettigrew, 1979). In general, "self-categorization theory assumes that people evaluate self-defining categories [such as gender] positively and are motivated to maintain such evaluations. Positive evaluation of self categories is associated with positively evaluating others who fit within the same category (Jackson et al., 1992, p. 77)”. In general, then, demographic characteristics may be relevant categories that individuals use as part of their self-identity in the context of a given social unit, such as an organization or a work group (Tsui et al., 1992). The social unit may be more attractive to the individual if it is composed of others whose demographic profiles are consistent with the categories that the individual has chosen to categorize him- or herself (Tsui et al., 1992). For example, if an
individual uses gender as a category for self-definition, the individual may be most attracted to and satisfied in groups that are composed of members of the same gender category because the group contains an important part of the individual's existing self-identity (Tsui et al., 1992). Conversely, a social unit will be less attractive to the individual if it is inconsistent with the individual's own demographic categories and, thus, self-identity. A situational setting, such as a work group, in which an individual is dissimilar to a majority of the members may make the individual uncomfortable because of the increased awareness that the characteristics of his or her social identity are different from others and, thus, result in lower attitudes and behaviors (Mullen, 1983).

Each of the previously discussed theories underlying relational demography suggest that individuals’ work-related attitudes and behaviors may be affected by the degree to which the individuals’ demographic characteristics are similar to those of others in their social units. On the group level, demographic similarity leads to more personal interactions and therefore higher levels of organizational attachment through similarity attraction and identification with the group. The mechanism (Lawrence, 1997) through which demographic similarity yields its influence is mostly communication with other group members. On the organizational level, demographic similarity influences organizational attachment through depersonalized social categorization and identification with the whole organization. As the categorization process involves selection of certain information, perception matters. In this broader level of social context, individuals may have close, communication based relationships and may also have distant, awareness based relationships. The mechanism (Lawrence, 1997) through which demographic similarity works on organizational attachment, therefore, involves communication with members beyond the formal work group. Figure 1 summarizes this hypothesized conceptual model.

Insert Figure 1 about Here
Empirical Findings in Relational Demography

Past research on the effect of demographic diversity in groups tends to focus on the composition of the entire work group on some demographic attributes; or in other words, homogeneity or heterogeneity on certain demographic variables. In this body of research, independent variables that have been studied include age, company tenure, education, functional background, industry experience and tenure on the team. Studies in this research stream focus on two main categories of outcomes—social outcomes and task outcomes (Tsui & Gutek, 1999). Specifically, variables that have been studied include turnover (Jackson et al., 1991), innovation and adaptation, change and firm performance, satisfaction (Wharton & Baron, 1987, 1991), commitment (Tsui et al., 1992), frequency of communication (Zenger & Lawrence, 1989), performance evaluation and absenteeism. These research studies use formal groups in organizations such as R&D teams (e.g., Ancona & Caldwell, 1992), top management teams (e.g., Bantel & Jackson, 1989; Smith et al., 1994; Hambrick, Cho & Chen, 1996). They also include project teams (Zenger & Lawrence, 1989), work groups (Konrad, Winter & Gutek, 1992; Pelled, 1996; Riordan & Shore, 1995) or “high involvement” teams (Magjuka & Baldwin, 1991).

At the organizational level, the general research question is: would the demographic composition of the organization influence the social psychological reactions of individuals? Research at this level is far less in quantity compared with those at the dyad and group level—the number of studies at the organizational level remains single digit up to date. Among the relatively fewer studies at the organizational level (Hoffman, 1985; Pfeffer & O’Reilly, 1987; Alexander et al., 1995), variables that have been studied include gender, race, age, company tenure and educational level. Outcome variables include organizational attachment (measured by psychological commitment, absenteeism, and intent to stay) and turnover, (interpersonal, organizational and inter-organizational) communication, and social relations at work.
Organizational Reference Group: The “Perceived” Organizational Context

In organizational settings, the constant process of social exchange between employees and the organization, and the social comparison with other organizational members is by no means limited within the boundary of the formally defined work groups in the organizational chart. As early as in 1980, Moch argues that supervisors have little impact on friendship patterns. They are likely to have little impact on who employees take as a relevant comparison group for determining relative deprivation. They surely will have little effect on how comparable others fare because these people are likely to be linked to the employees outside of the work setting. Similarly, if we look beyond the formal work groups yet limit the discussion to organizational settings, supervisors do not have any control over who employees socialize with outside the formal work group. Therefore, limiting the consideration for employees’ social context in an organization to only the formal work group fails to capture the whole picture, if not leading to wrong conclusions.

In reality, although employees are usually “formally” assigned to a work group by the organizational chart, nobody is restricted to only interact with members from that group. As a matter of fact, employees are free to choose any member from the organization to include in his or her “perception” of the organization, which can be expected to cast more impact on the organizational life of the employee. Research has shown that individuals exhibit clear and consistent preferences for similar others in selection of social partners in a free choice situation (Burt & Reagans, 1997; Lincoln & Miller, 1979). Therefore, it is highly possible that different organizational members in the same organization may have very different perception of the firm. It is conceptually interesting to distinguish the “perceived” organizational context from the “assumed”, uniform organizational context, and to investigate the possible impact this “perceived” organizational context might have on employees’ organizational attachment. In other words, to study employees’ organizational attachment, it is imperative to clarify what actually consists of the context of such processes before researchers can draw any meaningful conclusions on what impacts they might have on them.
Organizational reference group, as discussed below, provides a starting point to probe this intriguing question.

Organizational reference group (Lawrence, 2003) refers to “the set of people that an individual perceives as belonging to his or her work environment and who define the social world of work in which he or she engages”. As described by Lawrence, (2003),

An individual’s organizational reference group includes everyone he or she thinks of when answering the question: Who works here? It incorporates the individual’s co-workers, friends, enemies, and acquaintances as well as people with whom the individual has no direct contact, such as those he or she sees in the next building or knows only through stories, reputation and email. The individual’s inferences about the attitudes, values, and beliefs of the rest of the organization are largely based on these people. They constitute the “social frame of reference” (Merton, 1968) through which he or she receives information, interprets work-related experiences, and makes decisions to act. From the reference group, employees generate their understanding of the corporate culture, norms, career paths, social comparison, etc.

As discussed in detail in Lawrence (2003), organizational reference groups extend beyond the employee’s social network in the workplace because they include people with whom individuals have no direct contact (Lawrence, 2003)—those “distant, extended associations”—those delineated by “awareness” as well as by communication” (p. 4). Also as argued in the same article,

“When organizational theories move beyond dyadic relationships and small groups, they tend to assume that all individuals experience a common social context. Yet, the set of people who define one individual’s organizational experience may vary significantly from that of another. How do individuals sort through the broader set of people represented in an organizational reference group and how does this broader definition of social context influence behavior?”

This means that by taking into consideration the potential differences in individual perception, researchers need to revise their assumption that all organizational members experience the same social context that comprises everybody in the same organization.

Conceptually, an individual’s organizational reference group may not include the entire organization, but the people it does include largely generate his or her view of the organization as a whole. As organizational reference group is the group from which the individual forms his or her
“perception” of the organization, the demographic characteristics of this particular group are expected to directly influence the organizational attachment through interpersonal communication. Interpersonal communication with organizational reference group members lead to social identification, while social categorization leads to impersonal identification with the salient group based on demographic attributes such as age, race or gender. The social categorization process may also lead to social comparison, which may also determine organizational attachment through perceptions of justice or feelings of deprivation. Fact is, research shows that employees working for the same organization “select” and define their own “reference” groups, and therefore more social categorization and identification is based on this perceived organizational context rather than the assumed, exclusive organization that includes every single member. In other words, members of the same work group may have different “reference” groups, from which they gather, access and interpret information about the organization they work for. Therefore, employees develop organizational attachment with the organization through 1) interpersonal interaction with formal group members; 2) interpersonal interaction with members outside the formal group, but in the perceived organizational context; 3) depersonalized social identification with their chose psychological group as defined by their perception of the organization through the organizational reference group. Through all these three processes, the communication pattern of the employee with other members of the organization is “shaped” by the perception of the broad organizational context, which in turn leads to the outcome variable, organizational attachment.

Organizational Attachment

Organizational attachment is defined as an individual's psychological and behavioral involvement in the organization of which he or she is a member (adapted from Tsui, Egan & O’Reilly, 1992). Behaviors such as absence (Rhodes and Steers, 1990), attitudes such as reduced psychological commitment (Mowday, Porter, and Steers, 1982), and cognitions or thoughts of
leaving the social unit (Rusbult et al., 1988) may be behavioral and psychological responses to the reduced attractiveness of a particular social category. Following other relational demography research, yet recognizing that job satisfaction is usually an antecedent to organizational commitment, I include job satisfaction, psychological commitment, and intent to stay in my measure of organizational attachment.

It is important to study organizational attachment because this is the variable that management could exert influence on to reduce turnover. The personal and organizational costs of leaving a job are often very high. Given alternatives, people stay if they are satisfied with their jobs and committed to their organizations and leave if they aren’t. Although managers cannot control factors such as job alternatives, they can try to elevate work attitudes such as organizational attachment.

The research investigating the traditional attitude-driven process and its component parts has been extensive. Maertz and Campion (1998) and Hom and Griffeth (1995) provide excellent reviews. The two most frequently tested attitudinal constructs have been job satisfaction and organizational commitment. Both constructs receive considerable attention from industrial and organizational psychologists, management scientists, and sociologists. Thousands of studies had been done on job satisfaction alone by the time Locke prepared his study (Locke, 1976). Among other topics, job satisfaction and/or organizational commitment have been shown or argued to be related to productivity, attendance at work, turnover, retirement, participation, labor militancy, sympathy for unions, and psychological withdrawal from work. In general, empirical results suggest satisfaction and commitment have consistent, statistically significant, and negative relationships with turnover (e.g., Jaros, 1997).

Although the relationship between organizational commitment and job satisfaction is rather controversial, findings provide ample evidence that job satisfaction is a significant predictor of
organizational commitment in the existing literature. In spite of some evidence that organizational commitment is antecedent to job satisfaction (Bateman & Strasser, 1984; Wong, Hui & Law, 1995), the majority of the literature indicates that job satisfaction is antecedent to organizational commitment (Bagozzi, 1980; Bartol, 1979; Brown & Peterson, 1994; Curry, Wakefield, Price & Mueller, 1986; DeCotiis & Summers, 1987; Luthans, Baack & Taylor, 1987; Mathieu & Hamel, 1989; Reichers, 1985; Testa, 2001; Porter, Steers, Mowday, & Boulian, 1974; Price, 1977; Rose, 1991; LaLopa, 1997). Job satisfaction was used as a control variable for organizational attachment in the 1997 article of Tsui et al. I include both measures in this study with job satisfaction being an antecedent to organizational commitment.

Organizational commitment has been defined as both behavioral (Becker, 1960; Staw & Salancik, 1977) and attitudinal (Allen & Meyer, 1990; March & Simon, 1958; Mowday, Steers & Porter, 1979; Porter, Steers, Mowday & Boulian, 1974). The attitudinal approach recognizes that “the identity of the person [is linked] to the organization” (Sheldon, 1971, p. 143); and thus, the person develops an emotional or psychological attachment to his or her employer. In this study, my conceptualization of commitment is consistent with Allen and Meyer (1990). Organizational commitment, as defined by Allen and Meyer, consisted of three components: affective, continuance and normative. Affective commitment is characterized as an emotional or psychological attachment to the organization. This is consistent with the construct of “affective organizational commitment”, or “psychological attachment” as defined by Tsui et al. (1992), which was defined by Mowday, Porter, and Steers (1982, p.27) as “a strong belief in and acceptance of the organization’s goals and values; a willingness to exert considerable effort on behalf of the organization; and a strong desire to maintain membership in the organization.”

Job satisfaction is defined as a “pleasurable or positive emotional state resulting from the appraisal of one’s job experiences” (Locke, 1976, p. 1297). It is suggested that job satisfaction is a state of pleasure gained from applying one’s values to a job (Locke, 1969). Spector (1997, p.2)
believes that job satisfaction “can be considered as a global feeling about the job or as a related
c constellation of attitudes about various aspects or facets of the job.”

As an attitude, differences between commitment and job satisfaction are seen in several ways
(Mowday, et al., 1982). Commitment is a more global response to an organization and job
satisfaction is more of a response to a specific job or various facets of the job. Wiener (1982) states
that job satisfaction is an attitude toward work-related conditions, facets, or aspects of the job.
Therefore, commitment suggests more of an attachment to the employing organization as opposed to
specific tasks, environmental factors, and the location where the duties are performed (Mowday, et
al., 1982). When discussed on these terms, commitment should be more consistent than job
satisfaction over time. “Although day-to-day events in the work place may affect an employee’s level
of job satisfaction, such transitory events should not cause an employee to reevaluate seriously his or
her attachment to the overall organization” (Mowday et al., 1982, p.28).

Intent to stay. A third way of measuring organizational attachment is through the idea that if
an individual finds membership in a social unit to be satisfactory, he or she will most likely desire to
maintain this membership. Intent to stay is considered to be one form of behavioral commitment
(Mottaz, 1989). As a measure of organizational attachment, it has been found to be a strong predictor
of actual turnover behavior (Kraut, 1975; O'Reilly, Chatman, and Caldwell, 1991).

The Process Model—Communication as the Mediator

In this paper, I use communication as one example of the mechanism through which
demographic similarity affects organizational attachment. The employee works, communicates and
socializes with organizational members both within and beyond the formal work groups. Through
direct communication and internal readings, employees also acquire information on some
organizational members that they may not engage in any direct interactions with. Yet, gradually,
demographic diversity of the organizational reference group provides the social context within which
employees develop their communication patterns. In addition to the direct impact of demographic diversity on organizational attachment, communication is hypothesized as the mediator that may serve to enhance the overall attachment level of the employee. The process model is summarized by the following hypotheses.

Hypothesis 1. The greater the demographic similarity between an individual and others in the organization, the higher the individual’s attachment to the organization, as reflected in higher levels of job satisfaction, psychological commitment, and intent to stay with the organization.

Hypothesis 2. The greater the demographic similarity between an individual and the members of his or her organizational reference group, the more frequently the individual engages in communication with the members.

Hypothesis 3. The more frequently the individual engages in communication with his or her organizational reference group members, the higher the individual's attachment to the organization, as reflected in higher levels of job satisfaction, psychological commitment, and intent to stay with the organization.

Methods

Sample

I have access to data on a systematically stratified sample (N=537) of an organization, for whom I have not only the complete archival demographic data, their reported organizational reference group, and a survey with self-reported data on organizational attachment, from among other measures (See Lawrence, 2003).

As I am using a secondary dataset, the following section on sample, procedures and measurement are largely reproduced from the original paper (Lawrence, 2003). “Data were collected in a large organization with over 9,000 employees. In the past, managers enjoyed long and stable careers in this firm, but they now face uncertain futures as the company responds to dramatic changes in the market environment. During the five years prior to data collection, employees experienced several major reorganizations and several reductions in force. Independent of these changes, managers move frequently throughout the firm; their average time in one position is under two years.
Managers thus have ample opportunities to develop work and friendship associations with a large and diverse group of people.

Demographic data were obtained from company records on the population of management and ready-for-management employees (N = 2685). In this firm, 32% (N = 848) of the managers and ready-for-management employees are women. The distribution by ethnicity is: Black, 9.8% (N = 263); Hispanic, 15.9% (N = 428); and Asian, 12.1% (N = 326). The average age of these employees is 44 (range = 23-74) and their average organizational tenure is 17 years (range = 0-50). Sixty-five percent of these employees hold a college degree. There are fifteen levels in management careers.

Surveys were mailed to a 20% systematic, stratified sample (N = 537) of management and ready-for-management employees. Four hundred and twenty-three surveys were returned (79%). Twelve surveys were deleted because they were completed by employees outside the sampling frame, leaving 411 (77%) usable surveys. The survey sample is similar to the population on all stratification dimensions: age (t = 1.11, p = 0.27), organizational tenure (t = -0.31, p = 0.75), career level (t = 0.79, p = 0.43), gender (X^2 = 0.23, p = 0.63), ethnicity (X^2 = 1.02, p = 0.91), and hire type (X^2 = 0.12, p = 0.73) (that is, whether the employee was in a professional or non-professional job when he or she was hired.)

Surveys were not anonymous. Subjects were requested to provide their social security number on an identification page that was perforated and easily detached from the survey booklet. Two envelopes were provided for returning each survey: one for the identification page and one for the completed survey. Subjects’ sealed responses could not be identified without opening the envelopes and matching the codes, thus giving subjects greater confidence that their responses would not be examined by others inside the firm. After the surveys were returned, the data were coded, and double-entered. A 5% sample of the surveys was re-evaluated to estimate the percent of entry errors. This evaluation yielded an error rate of .002%.
Organizational Reference Groups

The members of organizational reference groups were solicited by asking subjects to list the names of employees they know. This question follows those used by Hampton and Wellman (2000) and McCarty, Bernard, Killworth, Shelley, and Johnson (1997) for generating lists that include people with whom a subject has no face-to-face communication. This name generation approach is necessary in large organizations because it is impractical to ask subjects to answer questions about a list including more than 100 to 150 people. Fifty-six blank lines, the highest number that could be fit comfortably on the survey form, were provided. Subjects were given a complete list of management and ready-for-management employees. They were asked to add names if they felt they needed to include more than 56 names or if they needed to include names not on the list. The average number of names listed was 49.86 (range 0–56).

Asking subjects to list the names of employees they know has several advantages as a name generator. First, it separates the request for names from the request for strength of association. Subjects identify all their names before they answer any questions about these people. This contrasts with name generators such as “Who do you go to for critical sources of buy-in for projects?” “Who do you go to for informal discussion and socializing?” (Burt, 1992, Burt & Knez, 1995; Burt, 1997) “With whom do you talk frequently about work-related topics,” and “Who do you consider a close friend?” (Brass, 1985). These name generators explicitly request strong relationships. In other words, asking for “critical sources” or “close friends” guarantees that subjects do not name people with whom they have peripheral associations.

Second, asking subjects to name employees they know elicited a larger number of associations than is typical in other name generation studies and this increases the probability of obtaining a broad set of close and distant associations. Most studies explicitly focus subjects on a few relationships by requesting a small number of names and by limiting questions to relationships with salient content. For instance, Lincoln and Miller (1979) asked employees to name five persons with
whom they worked closely and five persons with whom they were friends. Sixty-four percent of their subjects provided less than five work contacts and 73% of them named less than five friends. Ibarra (1992) asked subjects to generate names in response to each of five questions about instrumental and expressive relationships. She provided ten blank lines for each question and notes that a few individuals added lines. A review of 22 samples from 21 widely-cited studies using name generators shows that the average list includes eight names.

While the name generator used here generated numerous names, the space provided was insufficient for many more than 56 names. We know little about the actual size of organizational reference groups. However, acquaintance studies suggest that people may generate several hundred names of acquaintances inside and outside of work (deSola Pool & Kochen, 1978). This suggests that the names generated in this study, although a good bit more numerous than usual, do not capture an individual’s entire organizational reference group.

Measures

**Demographic Diversity of the Organizational Reference Group.** The demographic diversity of each subject’s organizational reference group is measured by the Euclidean distance used in relational demography literature (Tsui et al., 1992), on six different demographic attributes—age, gender, ethnicity, organizational tenure, education and job level. The demographic attributes of the members of subjects’ organizational reference groups were obtained from the company’s employee records. This reduces potential response bias as subjects were not primed about the attributes of the individuals they selected (Smith, 1996).

**Organizational Attachment.** Organizational attachment is measured by three variables: job satisfaction, psychological commitment and intent to stay. This is adapted from Tsui et al. (1992) article. The *Organizational Commitment Scale* (Murphy, Owen, & Gable, 1988) measures the degree to which respondents express satisfaction with their work setting, compatibility with organizational values, and loyalty to the organization. The scale consists of 15 statements, each of which is
evaluated on a 5-point, Likert-type scale with 1 indicating strongly disagree and 5 indicating strongly agree. Sample statements of the scale include: Deciding to work at this organization was a definite mistake on my part; I am proud to tell others I am a part of this organization; and I find that my values and the organization’s values are very similar. Reliability Estimates for the Organizational Commitment Scale range from .82 to .93 (Murphy Owen, & Gable, 1988). I used 10 of the 15 items that measure the psychological commitment from this scale in the paper, in order to be consistent with the Tsui et al. (1992) article.

Job Satisfaction. Many analysts rely upon the judgment of individuals to give an overall assessment of job satisfaction where other researchers compute composite measures of job satisfaction from the different dimensions of the job identified as being important. Each approach has its strengths and limitations. In this paper, job satisfaction was assessed by a standard question “how satisfied are you with your job”. We employed a 7-point Likert scale ranging from Strongly Disagree to Strongly Agree.

Allowing respondents to assess their overall job satisfaction also has its advantages. First, overall measures of job satisfaction often correlate highly with composite measure of job satisfaction. Also, creating a composite index of job satisfaction typically necessitates that the researcher decide on how much weight to give to each individual component when indexing job satisfaction. Asking a respondent for their overall impression of job satisfaction allows for the respondent to mentally assess what the respondent feels are relevant dimensions in formulating a response to the issue of job satisfaction.

Intent to stay. Intent to stay was measured with a self-reported single item “How long do you expect to remain with the organization”. Options for the answer range from “less than a year”, which indicates very low intent to stay, to “until retirement”, which indicates very high intent to stay.
Communication. Communication is a five point Likert Scale frequency measure. Subjects are asked to respond to the question “How often do you discuss general work issues with other management and ready-for-management employees?” for every member they included in the organizational reference group member. This self-reported communication measure reflects the communication pattern between the employee and everybody that is part of the perceived organizational context. It reflects the interaction between the employee and the organizational context much better than that limits the social context on the group level only.

Analytical Approach: Structural Equation Modeling

To test the theoretical hypotheses, structural equation modeling is employed. The EQS (Version 6.0) program is be used to develop and test all structural models. Structural equation modeling (SEM) is a multivariate technique that defines and estimates dependent and independent relationships between endogenous and exogenous variables simultaneously (Bollen, 1989; Hair et. al, 1998; Rakov & Marcoulides, 2000). It also takes measurement error into consideration, gives parameter estimates based on the maximum likelihood estimation, and provides various indices of the extent to which the proposed covariance structural model fits the data (Rakov & Marcoulides, 2000). SEM has been used in the fields of psychology, econometrics, biology, sociology, education, marketing, organizational behavior, and genetics (Hair et al, 1998).

All fit indices generated by EQS are be reported to assess the goodness of fit of the covariance structural models. The most common goodness-of-fit index is the chi-square value. The rule of thumb is that if the p-value of the chi-square statistic is greater than 0.05 (i.e., the chi-square value is not significant), then the proposed model is acceptable (Arbuckle & Wothke, 1995; Hayduk, 1987). Thus, the null hypothesis is that the sample covariance matrix (S) is equal to the model implied population covariance matrix (ΣΘ). However, because the traditional chi-square test is very sensitive to sample size, researchers (Browne & Cudeck, 1993; Steiger & Lind, 1980; Steiger, 1989)
suggest using the fit indices and the RMSEA as the principal goodness-of-fit index. They also suggest that a value of RMSEA of less than 0.05 indicates a close fit and that values up to 0.08 represent reasonable errors of approximation in the population. Because Bollen (1989) and Bentler (1990) have shown that IFI and CFI are much less dependent on sample size, I will also use the IFI and CFI to assess the fit between the data and the model. The GFI is similar to a R-squared multiple regression coefficient because it represents the proportion of the observed covariance explained by the model-implied covariance (Kline, 1998). The values of GFI, IFI, and CFI can vary between 0 and 1, with values closer to 1 indicating a close fit between data and model (Arbuckle & Wothke, 1995; Hair, et al, 1998; Joreskog & Sorbom, 1993). The correlation matrix for the observed variables will be used as input for the model (Bollen, 1989).

Figure 2 shows the hypothesized path model to be tested by structural equation modeling.

Results

Table 2 shows the means, standard deviations, and correlations among all predictor, outcome and mediating variables. The hypothesized process model was tested by a structural equation model (SEM) using EQS 6.0 Beta version (Bentler & Wu, 2000), a package specifically developed to provide tools for SEM in the context of the Bentler-Weeks model (Bentler & Weeks, 1980). Input for the program consisted of a 10 X 10 correlation matrix of the model variables. The hypothesized model was estimated in EQS by conventional maximum likelihood estimation method.

The estimation of the originally hypothesized model yielded acceptable model fit indices and parameter estimation. Figure 2 presents the model diagram and results of the estimation. The Chi-square was 53.33 with a degree of freedom of 17, p < 0.00. Because a chi-square statistic is directly
proportionate to sample size, fit indices are more appropriate to evaluate the fitness of the hypothesized model. Given the controversy in the literature over goodness-of-fit indexes, a variety of goodness-of-fit indexes were computed to evaluate the overall fit of the model (Bollen, 1989). The following goodness-of-fit indexes were reported: Bentler-Bonett Normed Fit Index (NFI)=0.83, Bentler-Bonett Non-normed Fit Index (NNFI)=0.79, Comparative Fit Index (CFI)=0.87, Bollen (IFI) Fit Index=0.88, LISREL GFI Fit Index=0.96, and LISREL AGFI Fit Index=0.97. The Root Mean-Square Residual (RMSR) =0.07, and the Standardized RMR=0.06. All these values suggest a good fit (Bentler & Bonett, 1980; Pedhazur & Schmelkin, 1991), which in turn indicates that the proposed model adequately explains the relationships between the measured variables inherent in the data.

It is worth noting that although the overall model fits pretty well, not all hypothesized effects are supported by the findings, and in some cases even in the opposite direction. Hypothesis 1 predicts that the greater the demographic similarity (or the less the demographic difference) between an individual and others in the organization, the higher the individual's attachment to the organization, as reflected in higher levels of job satisfaction, psychological commitment, and intent to stay with the organization. Among the six demographic variables, four attributes (gender, ethnicity, job level and tenure) are found to have a significant impact on organizational attachment. However, similarity in ethnicity is found to be negatively related to job satisfaction. In other words, the more similar the employee is in ethnicity with the members of his or her perceived organizational context, the less satisfied the employee is with his or her job. This is contrary to what social identity and self-categorization theories predict.

One less surprising finding between demographic similarity and organizational attachment is noted for similarity in job level. The estimated model results demonstrate that the more similar the
employee is with the rest of the members of his or perceived organizational context, the higher the job satisfaction, yet the less committed the employee is with the organization. This is consistent with the literature in organizational commitment—as job level signifies more flexibility for the individual, therefore less commitment with the organization. This means that although demographic similarity may have positive results on job satisfaction—therefore making the employee’s organizational life more meaningful, for the organization, such similarity does not help in retaining its employees.

Similarity in tenure is found to be positively related to intent to stay. Similarity in gender is positively related to job satisfaction. These findings support hypothesis 1. Yet different demographic attributes impact organizational attachment in different ways.

Hypothesis 2 and Hypothesis 3 predict that on the perceived organizational level, communication serves as the mediator between demographic similarity and organizational attachment. The model estimation again generally supports both hypotheses with some interesting counter-intuitive findings. Only similarity in gender, ethnicity and job level are found to have an impact on organizational attachment through communication (with one exception: similarity in job level has a significant negative effect on organizational commitment as well). Communication is also found to enhance organizational attachment through job satisfaction. Among these three attributes, similarity in ethnicity and job level are found to increase communication frequencies between employees. That is, the more similar employees with regard to ethnicity and job level with the rest of the members in their perceived organizational context, the more they tend to talk to each other. Yet, similarity in gender decreases communication, contrary to the theoretical prediction. It is also worth noting that among the three attributes that do have a significant impact on communication, only similarity in job level both enhances communication and organizational attachment through job satisfaction. Both similarity in gender and similarity in ethnicity have opposite effects on communication and organizational attachment. These findings are very interesting as they contradict
previous empirical studies, and have the potential to explain why the traditional relational demography approach on the group level does not always yield consistent results.

Table 3 presents the attempt to replicate the group level relational demography approach (Tsui, Egan & O’Reilly, 1992). I used the exact same independent variable (Euclidean distance measure of demographic difference between the employee and the rest of the formal work group), control variables (main demographic attributes) and outcome variables (two of the three attachment measures—psychological commitment and intent to stay), but failed to find any meaningful relationships. Notice that this model does not have communication as the mediator. In addition to all possible empirical complications (such as their big sample size, sampling scheme and the fact that they found job satisfaction to be one consistently significant predictor of their other attachment measures), it is also possible that group level demography is inadequate in capturing the impact of demographic diversity on organizational attachment, and that communication may serve as an important, but sometimes counter-intuitive mechanism through which demographic diversity influences organizational attachment. More detailed discussion will be included in the discussion section.

Discussion

The findings from this paper generally confirm the theoretical prediction of social identity and self-categorization theory, with some unexpected counter-intuitive results. In this section I will discuss these points, and also explore the limitations of this study.

First of all, it is interesting to note the possible complications in the impact of demographic similarity on organizational attachment. Rather than assuming that similarity in all demographic
attributes positively reinforce organizational attachment, this paper shows that some attributes, such as gender, may actually negatively influence job satisfaction.

Secondly, it is also important to realize that demographic similarity in some attributes may influence organizational attachment both directly and through some intervening variables such as communication, yet not always in the same direction. This means that human attitudes and behaviors are complicated enough to warrant in-depth investigation, rather than naïve assumptions that certain effects are always expected to happen. Possible relationships such as mediating, suppressing, distorting effects are all possible in the complex relationships. Demography researchers need to refer to more socio-psychological theories to further understand the effects of demographic similarity on individual attitudes and behaviors.

Thirdly, it is also important to distinguish possible differences in the effect of demographic similarity among various attributes, and provide more sophisticated theoretical underpinning on how each attribute works on individuals.

The findings of this study should be viewed with a few limitations in mind. I assessed our constructs using self-report measures, which may cause common method variance challenges. Yet the demographic diversity measures for the organizational reference group and the work group (for the replication study) were not self-reported—rather, they were calculated by using the archival data from the company record.

Another limitation is that I only sampled one large organization in southern California. Therefore, our findings may not be generalizable to other organizations. To enhance external validity, future research efforts should obtain a representative sample from several large organizations from different industry and geographic locations, ideally using a longitudinal research design to establish causal relationships among the variables.
Despite all the limitations, this study provides intriguing results that call for further considerations in demography research. Researchers need to look at the impact of demographic attributes in a more in-depth way to explicate the complex relationships each of the attributes may have on organizational attachment, and through a variety of possible mechanisms. Some mechanisms, such as communication, may further complicates such relationships. This study also demonstrates the importance of including human perception in conceptualizing the social context of organizational members, rather than either limiting the boundary to formal work groups or assuming that all organizational members share a uniform organizational context that includes every single other member of the organization.
Table 1. A Summary of Demography Literature

<table>
<thead>
<tr>
<th>Approaches to Demographic Analysis in Organizations</th>
<th>Conceptualization of the Social Context</th>
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<tr>
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<td>The Relational Approach</td>
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<tr>
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</tr>
<tr>
<td>3. Difference in education</td>
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</tr>
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<td>4. Difference in gender</td>
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<td>5. Difference in ethnicity</td>
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<tr>
<td>6. Difference in job level</td>
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<tr>
<td>7. Communication</td>
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</tr>
<tr>
<td><strong>Dependent Variables</strong></td>
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<td>8. Job Satisfaction</td>
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<tr>
<td>9. Psychological commitment</td>
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<td>10. Intent to stay</td>
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<td><strong>Mean</strong></td>
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<tr>
<td><strong>Standard Deviation</strong></td>
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*p<.05, **p<.01, ***p<.001
n=400.
Table 3. Unsuccessful replication of Group Level Model—Tsui, Egan & O’Reilly, 1992

The Effects on Organizational Attachment of Being Different
Psychological Commitment

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<th>2</th>
<th>3</th>
<th>1a</th>
<th>2a</th>
<th>3a</th>
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<td>ns</td>
<td>ns</td>
<td>ns</td>
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</tr>
</tbody>
</table>

Job satisfaction:  
- 0.08*** -0.07*** -0.08*** -0.08*** -0.07***
Job level:       
-0.05*** -0.05*** -0.05***

| Overall model F | 13.23*** | ns | 20.60*** | 13.23*** |
| Adjusted R Squared | 0.30 | 0.31 | 0.30 |
| R Squared change | 0.30 | 0.31 | 0.30 |

*p < .10, *p < .05, **p < .01, ***p < .001, n = 400

**Intent to Stay**

<table>
<thead>
<tr>
<th>Variable</th>
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<th>2</th>
<th>3</th>
<th>1a</th>
<th>2a</th>
<th>3a</th>
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<tbody>
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<tr>
<td>Difference in age</td>
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<td>Difference in education</td>
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<tr>
<td>Difference in sex</td>
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<td>ns</td>
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</tr>
<tr>
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<td></td>
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<td></td>
<td></td>
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</tr>
</tbody>
</table>
| Simple age                    | -0.08*** -0.07*** -0.08*** -0.08*** -0.07***
| Simple tenure                 | -0.04* 0.05* 0.04* 0.05* 0.05* |
| Simple education              | -0.22* ns -0.26* ns ns |
| Simple sex                    | ns ns ns ns ns ns ns ns ns |
| Simple race eth dum 2         | ns ns ns ns ns ns |
| Simple race eth dum 3         | 0.86* 0.74* 0.89* 0.76* 0.74* |
| Simple race eth dum 4         | ns ns ns ns ns ns |

Job satisfaction:  
0.33*** 0.34*** 0.33***
Job level:       
ns ns ns

| Overall model F | 2.63*** 3.05*** 4.26*** 4.63*** 3.05*** |
| Adjusted R Squared | 0.05 0.07 0.06 0.08 0.07 |
| R Squared change | 0.05 -0.01 0.02 -0.01 |

*p < .10, *p < .05, **p < .01, ***p < .001, n = 400
Figure 1. Hypothesized Conceptual Model: The Impact of Demographic Diversity on Organizational Attachment Through Communication
Figure 2. Hypothesized Path Model: The Impact of Demographic Diversity on Organizational Attachment Through Communication
Figure 3. Standardized Results of the Estimated Path Model: The Impact of Demographic Diversity on Organizational Attachment Through Communication

INDEPENDENCE MODEL CHI-SQUARE = 316.00  28 DEGREES OF FREEDOM
CHI-SQUARE = 53.33  17 DEGREES OF FREEDOM

FIT INDICES
BENTLER-BONETT NORMED FIT INDEX = .83
BENTLER-BONETT NON-NORMED FIT INDEX = .79
COMPARATIVE FIT INDEX (CFI) = .87
BOLLEN (IFI) FIT INDEX = .88
MCDONALD (MFI) FIT INDEX = .96
LISREL GFI FIT INDEX = .97
LISREL AGFI FIT INDEX = .93
ROOT MEAN-SQUARE RESIDUAL (RMR) = .08
STANDARDIZED RMR = .06
ROOT MEAN-SQUARE ERROR OF APPROXIMATION (RMSEA) = .07
References


