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The influence of ethnicity on organizational commitment and merit pay of IT workers: the role of leader support

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Abstract. *Projections of looming shortages in the supply of skilled IT workers, along with high employee replacement costs, make employee attraction, retention and support a pressing concern for organizations. One potential remedy for these shortages is to focus more attention on historically underrepresented groups. We explore ways organizations can support ethnic minority IT professionals to enhance their career success. Integrating affective, cognitive and social perspectives through affective events theory and social exchange theory, our objective is to explore the implications of ethnic minority status for the relationship between leader support (i.e., mentoring and leader–member exchange (LMX)) and subjective and objective indicators of career success (i.e., organizational commitment and merit pay) among IT workers. To test the model, we conducted a field study of 289 IT workers in a Fortune 500 company. Our results showed that LMX influenced organizational commitment for ethnic minorities, while career mentoring and LMX influenced organizational commitment for majorities. Psychosocial mentoring influenced merit pay for ethnic minorities, while neither LMX nor mentoring influenced merit pay for majorities. Our study contributes to the literature on IT personnel issues by exploring how and why these leader support mechanisms enhance organizational commitment and merit pay for IT workers. Moreover, we demonstrate that ethnicity is an important consideration for researchers studying organizational commitment, merit pay, mentoring and LMX. Our findings suggest that managers can boost organizational commitment among IT workers by focusing on LMX and career mentoring. Moreover, they may want to place particular emphasis on psychosocial mentoring and interventions to enhance LMX for their ethnic minority IT workers.*

Keywords: mentoring, leader–member exchange, organizational commitment, merit pay, ethnicity, underrepresented groups

INTRODUCTION

Alarming projections of shortages in the global supply of skilled IT workers (Manpower Group, 2012), along with a recent global economic downturn and high employee replacement costs (Chevalier, 2008), have increased the urgency with which organizations look for ways to retain and support qualified IT professionals. One potential remedy for these shortages is to expand the pipeline of skilled IT workers by focusing more attention on historically underrepresented groups. While researchers have begun to make some progress in exploring ways to attract and retain women in the IT workforce, comparatively less research has examined these issues among ethnic minority groups.[1]

This gap in the literature is problematic for two reasons. First, globalization has contributed to higher labour mobility, resulting in tremendous growth of ethnic minority populations in many countries (United Nations Populations Fund, 2013). For example, in the UK, ethnic minorities comprised only 13% of the population in 2001, yet will rise to 20% by 2051 (Rees *et al.*, 2012), while ethnic minorities in New Zealand are expected to increase from 33% of the population in 2006 to 42% by 2026 (Statistics New Zealand, 2010). Estimates by the United States (US) Census Bureau (2012c) show that population growth is fastest among ethnic minorities and is projected to rise from 37% to 57% by 2060. While the USA has a diverse and growing ethnic population, the proportion of ethnic minorities in the IT workforce is far lower than their percentages in the US population (Trauth & Niederman, 2006). Nearly 30% of the US population is composed of African Americans and Hispanics (US Census Bureau, 2012b), yet nationally, these groups make up only 14% of IT workers, with Whites comprising the vast majority at over 75% (US Bureau of Labor Statistics, 2013). This disparity is even more pronounced in the high-tech Silicon Valley. Recent diversity reports from Yahoo, Facebook, Linkedin and Google show that less than 7% of their workforces are composed of African Americans and Hispanics (Guynn, 2014). While the IT industry has been associated with social change, personal empowerment and the democratizing power of the internet, clearly challenges remain in attracting, retaining and supporting ethnic minorities. Organizations that fail to attract and retain ethnic minorities will strangle their pipeline of IT professionals, leading to a perceived environment that is hostile to those they must attract. Given the increasing demand for skilled IT workers, expansion of this pipeline is critical.

Second, it is important to address this gap because understanding attraction and retention of ethnic minorities has implications for organizational performance. Research suggests that ethnic diversity of a workforce contributes positively to organizational performance and competitive advantage through improvements in team effectiveness, productivity, creativity and access to labour markets (Richard, 2000; Gravely, 2003; Pless & Maak, 2004; Florida, 2005; Trauth *et al.*, 2006). Moreover, Bell (2012) pointed out that as organizations expand into global

[1]Our definition of an ethnic minority group is relative to our context and population of interest. Our population of interest is ethnic minorities in the IT workforce, and we contextualize this in the USA. Over 75% of the US IT workforce identifies as White; thus, other ethnicities would be considered ethnic minority groups. An ethnic group is defined as 'any group of people who set themselves apart and/or are set apart by others with whom they interact or co-exist on the basis of their perceptions of cultural differentiation and/or common descent.' Jones, S. (1997) *The archaeology of ethnicity: constructing identities in the past and present*. Routledge, London, UK.

markets, this ethnic diversity becomes an important resource for cultivating market intelligence, enhancing language capabilities and broadening networks. Researchers argue that it is not enough to simply increase numbers of underrepresented workers in order to address shortages and enhance performance – organizations must adapt their practices to support the needs of these workers (Quesenberry & Trauth, 2012). Motivated by this need, we explore how organizations can support IT professionals by enhancing subjective and objective indicators of career success, with an emphasis on the support of ethnic minority IT workers.

Allen *et al*. (2004) suggested that investigations of both subjective and objective indicators of career success are crucial because career success is operationalized in terms of both types of indicators. Moreover, they note that correlations between subjective and objective career success are typically low to moderate, suggesting that different factors drive career outcomes and a need to examine them from multiple perspectives. We examine a subjective indicator of career success by way of affective organizational commitment – i.e., workers' 'emotional attachment to, identification with, and involvement in, the organization' (Allen & Meyer, 1990, p. 1) – and an objective indicator of career success by way of merit pay – salary increases linked to performance evaluations. Given the socio-emotional implications of being 'an outsider', we felt it was important to understand how ethnic minorities feel about their organizations and how their organizations support their contributions. Many of the challenges ethnic minorities face are *affective* in nature as they are influenced by social exchange, i.e., feelings of acceptance, inclusion, respect and belonging. Other frequently studied subjective indicators of career success, such as turnover or job satisfaction, tend to have a stronger *cognitive* judgement component (Weiss & Cropanzano, 1996) and are influenced by issues that are not any more important to ethnic minorities than to ethnic majorities (e.g., job characteristics). Moreover, we chose to examine merit pay as opposed to other objective career outcomes such as promotion or compensation because merit raises are based on performance and tend to be more consistently applied across job roles. Promotions, in contrast, may involve changes in title and responsibility, and may or may not come with an increase in pay. Because there may not be money on the line, Varma *et al.* (2008) noted that promotions are more likely to be given for reasons unrelated to performance, such as seniority or politics. Similarly, compensation can be affected by a number of factors unrelated to performance, such as job type, tenure and market demand for a particular skill set. For these reasons, affective organizational commitment and merit pay are particularly well suited for our research context.

While there are many drivers of career success, a large body of research underscores the importance of organizational support via leader–member relationships in influencing both affective and performance-driven outcomes (e.g., Gerstner & Day, 1997). Drawing on social exchange theory (SET) and affective events theory (AET), we examine the role that leaders play in influencing organizational commitment and merit pay through mentoring and leader–member exchange (LMX) relationships. LMX is defined as 'the quality of the relationship between supervisors and subordinates' (Harris *et al.*, 2005, p. 363). Mentoring is 'a deliberate pairing of a more skilled or experienced person with a lesser skilled or experienced one, with the agreed-upon goal of having the lesser skilled person grow and develop specific competencies' (Murray, 1991, p. xiii).

While prior research recognizes the benefits of LMX and mentoring, there is a lack of research on their relative influences on career success. This oversight is important for two reasons. First, from a theoretical standpoint, prior research suggests that mentoring and LMX are complementary constructs (Scandura & Schriesheim, 1994). Scandura & Schriesheim (1994) found that mentoring should be included in investigations of LMX because mentoring exemplifies transformational leadership approaches (i.e., a leadership approach based on moulding subordinate behaviour), while LMX characterizes transactional leadership approaches (i.e., a contractual, cost–benefit exchange approach based on meeting subordinates' needs). Studying both LMX and mentoring together thus provides a more balanced view of leader support. Two, from a practical standpoint, it would benefit managers to know how to focus their supportive efforts. With limited resources, organizations must be selective about which resources they provide, and this may be particularly salient when trying to meet the specific needs of minority groups. Understanding the degree to which each form of support influences organizational commitment and merit pay across minority and majority ethnicities can help managers make better decisions about resource allocation.

Our objective is to explore the implications of ethnic minority status for the relationship between leader support (i.e., mentoring and LMX) and subjective and objective indicators of career success (i.e., organizational commitment and merit pay) among IT workers. Our research model is shown in Figure 1. We contextualize our literature review and theory development in the USA. While the underlying theoretical mechanisms are based on human behaviour that may generalize to other countries, the USA provides an appropriate setting to examine these relationships. According to Stuber (2007), corporate initiatives aimed at enhancing and supporting ethnic diversity have been evolving in the USA for the better part of three decades, lending experience among US companies with respect to diversity and inclusion. In the next section, we review the extant literature on minorities in the IT workforce, followed by a review of our guiding theories, SET and AET, to set the stage for an integrated framework that will guide the development of our hypotheses.

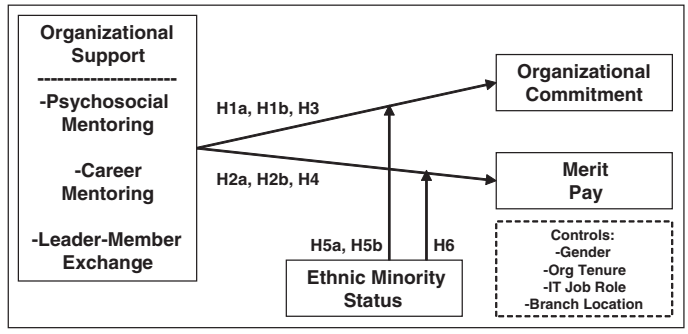

Figure 1. Research model.

LITERATURE REVIEW

Minorities in the IT workforce

The literature on underrepresented groups in the IT workforce has been evolving over the better part of the last two decades. One of the dominant areas in this stream of research focuses on women in IT. Many studies have been published addressing women in IT: the need to retain them, the need to attract women to the IT field and the need to increase their representation in the IT workforce (e.g., Trauth, 1995, 2000, 2002; Von Hellens *et al.*, 2001; Riemenschneider *et al.*, 2006b; Armstrong *et al.*, 2007).[2] Tapia & Kvasny (2004) extended the research on retention to include not only women but also ethnic minorities, more specifically African Americans, Hispanics and Native Americans. Research has evolved to explore diversity issues in the IT workforce with a more granular lens. Kvasny (2006) called for expanding the definition of minorities or historically underrepresented groups to include disabled people, women, ethnic minorities, and lesbian, gay, bisexual and transgender groups. This expansion has led to a series of studies that have explored the intersection of gender and a variety of other minority attributes. For example, Kvasny (2003, 2006) examined the race, gender and social class intersectionality of African American women taking courses in a computer technology centre. Expanding this intersectionality to include education, Kvasny *et al*. (2009) studied African American women in both IT education and work; Morgan & Trauth (2013) applied this three-way intersection of race/ethnicity, education and income to a study of people with diabetes to discern the influence of these characteristics on their motivation and ability to search for and use health information online. Despite this progress and the more granular view of underrepresented groups in IT, significant challenges persist.

Collectively, the literature on ethnic minorities in IT tells a story of obstacles at nearly every phase of the professional pipeline – from early education, access to basic computing resources and higher education attainment, to attraction to the field, and career progression. The well-known 'digital divide' (Kvasny, 2002; Kvasny & Trauth, 2002) describes a growing gap between those who have access to resources, information and opportunities related to technology, and those who do not. Research shows that ethnic minorities have limited access to IT resources, compared with their majority counterparts. A key reason for this gap is socio-economic status, which often correlates with ethnic background. Inequity exists not only in access to technology but in how that technology is appropriated and supported. In 1991, Sutton found that in urban schools with predominantly Black and Hispanic students, computers are typically used for rote learning, tutorial and drill-and-practice exercises, while suburban schools with predominantly White students tend to use computers for problem solving and programming. Kvasny & Keil (2006) studied two initiatives aimed at redressing the digital divide by providing access to IT. They highlight a fundamental problem with technology-centric solutions to the digital divide. Overcoming a lack of access to IT is not particularly challenging; addressing systemic and long-standing patterns of spatial, political and economic disadvantage is much more difficult.

[2]For a comprehensive review of the literature on gender in information systems research, see Trauth, E. M. (2013) The role of theory in gender and information systems research. *Information & Organization*.

A key challenge lies in helping people make the transition from access and use of IT to leveraging IT to escape poverty.

Moving further down the educational pipeline, ethnic minorities in the USA enter college in lower numbers than their White counterparts (an exception to this are Asian minority students) (US Department of Education, 2013). Once they get to college, ethnic minorities face significant challenges thriving in technical fields. They report peer pressure against choosing predominantly 'White' careers and face challenges with respect to the exodus of many companies to suburbs with predominantly White job pools (Bruno, 1997). A study of Black and Latino engineering students found that critical thinking skills are negatively affected by their experiences in predominantly White institutions (Fleming *et al.*, 1995). Fewer negative experiences were reported by minority engineering students at a historically Black institution (HBCU) (Fleming *et al.*, 1995)[3]; however, such institutions only comprise 3% of US higher education and are responsible for only 26% of bachelor's degrees held by Black graduates (Education Encyclopedia, 2003). Despite these relatively small numbers, research shows that HBCUs are beneficial in providing students with mentors and role models because of a greater value placed on one-on-one relationships with academic advisors (Cain & Trauth, 2012, 2013b), while Black students at predominantly White institutions have far less access to these resources. Significant cultural obstacles exist as well. Multiple studies report an incongruity between the culture of the IT field and that of ethnic minorities. The culture of the IT field is described as 'largely White, male-dominated, anti-social, individualistic, competitive, all encompassing, and non-physical' (Tapia & Kvasny, 2004, p. 87). Regardless of the specific values of any particular ethnic culture, some of these aspects of IT culture (i.e., anti-social and individualistic) are diametrically opposed to the needs of any minority group that seeks inclusion. It is thus unsurprising that some ethnic minorities perceive that IT does not have the qualities they desire in an occupation, describing the work as 'difficult, isolated, lacking necessary social interaction, and lacking work family balance' (Tapia & Kvasny, 2004, p. 87). In their study of the intersectionality of gender, race and perceptions of IT, Trauth *et al*. (2012) found that White women and Black and Hispanic men exhibited the most masculine stereotyping of IT skills. In contrast, White men and Black and Hispanic women exhibited the fewest, demonstrating important differences in perceptions of IT based on ethnicity and gender. Stereotyping is a theme that often arises in studies of minority inclusion in IT education. Through in-depth interviews, Cain & Trauth (2013a) discovered that minority Black men studying IT feel pressure to distance themselves from negative stereotypes about their perceived work ethic, intelligence, IT experience, 'ghetto' culture and aggression. Steele (2010) suggested that understanding such 'stereotype threats' – i.e., anxiety about confirming a negative stereotype about some aspect of one's identity – can help shed light on educational inclusion and achievement of minorities.

Provided they overcome potential obstacles with respect to early education and access, attraction to the IT field and possible cultural disparities, ethnic minorities who do make it to

[3]Historically Black colleges and universities (HBCU) are a classification of institutions established prior to 1964 with a mission of educating Black Americans. They admit students of all races but primarily serve Black students. Similar institutions exist for Hispanic students, referred to as Hispanic-serving institutions (Education Encyclopedia, 2003).

the IT field then face retention challenges. As with education, cultural fit in organizations can be problematic. Guzman & Stanton (2009) studied the occupational culture of IT workers and discovered that ethnic minorities find it difficult to identify with stereotypes about IT workers – such as the label of 'nerd' or 'geek' – because it represents further marginalization or stigma. Ironically, this may keep them from fully embracing the shared culture of their fellow IT professionals, separating them based on a basic cultural norm of their profession. Additionally, ethnic minorities in IT have access to less support in the workplace. Research shows that they are more likely to have difficulty finding mentors, sponsorship and role models (Moody *et al.*, 2003; Payton & White, 2003; Tapia & Kvasny, 2004). This is particularly unfortunate given the higher visibility of ethnic minorities in an organization. Research finds that visibility can contribute to stress by way of increased performance pressure (Jackson *et al.*, 1995) – stress that could be helped by support from mentors and role models. Tapia *et al.* (2004) suggested that not only does this make it difficult for them to stay but also to rise through the ranks. In one of the few studies specifically examining the career progression of ethnic minorities in IT, Igbaria & Wormley (1992) found that the Black IT professionals in their study reported less job discretion, career support, met expectations and job satisfaction. They received lower performance ratings from their managers, who were less likely to attribute minorities' high performance to effort and skill and more likely to attribute it to luck and task difficulty. Such outcomes are perhaps not surprising, given the obstacles that ethnic minorities face, for example, marginalization, lack of social acceptance and exclusion.

Past suggestions for overcoming obstacles faced by ethnic minorities are frequently tied to finding a way for minorities to fit in with the majority culture. Tapia & Kvasny (2004) pointed out that these suggestions tap into sociological theories rooted in assimilation and cultural pluralism paradigms. The assimilation paradigm suggests that ethnic minorities should change to fit the dominant culture. The cultural pluralism paradigm encourages celebration and acceptance of interpersonal differences, yet still assumes the existence of a majority culture. In the next section, we offer a different lens that we believe can lead to a focus on individual needs based on reciprocity and affective reactions to experiences at work, as opposed to fit with a majority culture.

THEORETICAL BACKGROUND

Integrating social exchange and affective events theories

Social exchange has long been used as a foundation to explain relationships between people in organizations (Cook & Rice, 2006). With roots in economics and sociology, SET describes how relationships are formed and persist on the basis of a cost–benefit analysis by both parties (Emerson, 1976). If the benefit of the relationship (e.g., support received) outweighs the cost (e.g., time) for both parties, the relationship will thrive. Studies show that workers who feel more supported by their organizations reciprocate in this social exchange by contributing more effort, thus enhancing their performance and chances for career success (Shore & Wayne, 1993; Settoon *et al.*, 1996; Eisenberger *et al.*, 2001). SET has been applied in IT research in the knowledge transfer/sharing arena (Jarvenpaa & Staples, 2000, 2001; Bock & Kim, 2002; Hall,

2003). More recently, Juntiwasarakij & Trauth (2009) presented SET as a theory providing unique explanatory insight into the knowledge transfer concerning IT outsourcing. Additionally, Trauth & Juntiwasarakij (2010) used SET to investigate issues surrounding the exchange of knowledge between industry and universities. Despite its widespread use in the organizational behaviour and information systems literatures to explain workplace reciprocity norms, knowledge transfer and LMX (e.g., Settoon *et al.*, 1996; Staples & Webster, 2008; Juntiwasarakij & Trauth, 2009; Trauth & Juntiwasarakij, 2010; Goh & Wasko, 2012), there is a long-standing criticism that SET over-emphasizes cognition and rational choice and ignores individuals' moods and emotions (Miller, 2005). In light of this criticism, we sought to extend SET by incorporating consideration of affective mechanisms. To do so, we integrate SET with AET, which recognizes that interactions with leaders can represent emotionally laden events that elicit affective reactions and that these reactions influence attitudes and behaviours in the workplace (Weiss & Cropanzano, 1996).

Exchange theory has been a dominant theoretical perspective for the better part of the past 50 years of research on organizational behaviour and sociology. Influenced by the early work by Homans (1961), Emerson (1962) and Blau (1964), research on work outcomes has been guided by rational and cognitive aspects of human behaviour. In recent years, researchers have begun to stress the affective dimension of work (e.g., Ashforth & Humphrey, 1995), criticizing SET because it does not readily account for this aspect of work experiences (Miller, 2005). Miller (2005) outlined four major shortcomings of SET that describe the risks involved in viewing mentoring and leader–member relationships as a series of rational, transactional exchanges. She argues that (1) SET reduces human interaction to a purely rational process, when it is not; (2) SET is built on an assumption of openness between exchange partners, when this may not be the case; (3) SET assumes the ultimate goal of a relationship is intimacy, when this may not be the case; and (4) SET views relationships in a linear fashion when in reality, they often might skip developmental stages or go backwards in terms of intimacy. Such shortcomings have given rise to a focus on affective reactions to work events and AET (Weiss & Cropanzano, 1996). Although this theory captures mood and emotion as drivers of career outcomes such as organizational commitment, it is incomplete in accounting for specific mechanisms that lie between events, emotions and attitudes. These constructs are relatively vague, as are the processes that link them. AET '…was intended to provide a roadmap or "macrostructure" to help guide research on emotional experiences at work. The hope was that individual "microstructures" would eventually develop…' (Weiss & Beal, 2005, p. 15). We suggest that the social exchange process represents a useful microstructure because it can explain how leader–member interactions translate into career outcomes. AET thus brings balance to SET's overemphasis on rational drivers of behaviour, while SET augments AET's macro level focus.

We propose that a successful social exchange between parties produces positive emotional reactions and this influences work attitudes and outcomes. Whether an exchange is judged to be successful is determined not only by whether the benefit of the exchange outweighs the cost (in line with SET) but also on reciprocity norms that are governed by affective reactions (in line with AET). In the leader–member relationships we describe later (i.e., mentoring and LMX), leaders offer advice, support and knowledge of organizational values and norms to subordinates. The support itself is potentially valuable, but just as important is a subordinate's ability to reciprocate. Subordinates can reciprocate in this social exchange by leveraging leader

support to improve their well-being, job status or performance. Without this reciprocity, the social exchange will not be considered successful by either party. If the subordinate does not reciprocate, the leader sees his or her own efforts to be rebuffed or ineffective, producing negative affect and potentially diminishing further supportive efforts. Likewise, when a subordinate does not reciprocate, the subordinate is likely to feel indebted because of the efforts of the leader.

Violation of reciprocity norms is linked to negative affective reactions such as guilt, shame and unease on the part of a recipient. Settoon and his colleagues (1996, p. 219) noted that 'recipients of positive actions experience a sense of indebtedness that is highly aversive [sic] and can be reduced through reciprocation (Greenberg, 1980)…Only when the donor is benefited through the effort of the recipient is that sense of indebtedness reduced (Greenberg & Westcott, 1983).' When the subordinate reciprocates the leader's efforts, the exchange is successful and positive affect on the part of both parties should contribute to positive attitudes and behaviours toward the organization on the part of the subordinate, as well as further efforts on the part of the leader to support the subordinate. Using an integrated SET–AET framework, we next explicate the micro-level mechanisms involved by theoretically linking specific social interaction events (mentoring and LMX) to organizational commitment and merit pay, followed by an examination of how the influence of leader support on career outcomes differs across ethnic minority status.

HYPOTHESES DEVELOPMENT

Mentoring

In recent years, researchers have further refined the mentoring construct, identifying two distinct types of mentoring. '*Psychosocial mentoring* functions include social acceptance, role modelling, counselling, and friendship…' (Riemenschneider *et al.*, 2006a, p. 434). According to Dreher & Ash (1990), this type of mentoring involves serving as a role model, friend and counsellor, and providing positive regard and acceptance. *Career mentoring* involves coaching, sponsorship and protection on behalf of the protégé, which allows for the building of contacts, alliances, visibility, opportunities for career advancement and access to challenging assignments through which new skills are learned (Baugh *et al.*, 1996).

Mentoring, as a whole, has been found to relieve stress associated with organizational pressure (Kram & Hall, 1989). Multiple studies show that mentoring acts as a form of social support that leads to increased career and job satisfaction and decreased turnover (Viator, 2001; Noe *et al.*, 2002). The nascent research on the influence of mentoring on career outcomes is inconsistent. Research shows that psychosocial mentoring can lead to a reduction in stress, while career mentoring leads to an *increase* in stress because it exposes protégés to opportunities and situations that create additional pressure and tension in their environment (Riemenschneider *et al.*, 2006a). Scandura (1997) found that career mentoring is correlated more strongly with organizational commitment, while Reid *et al.* (2008) found that only psychosocial mentoring was significant in predicting workers' organizational commitment. Craig *et al.* (2012) studied IT workers in state government and found only psychosocial mentoring to be significant in predicting organizational commitment, indicating the importance of emotional experiences over more objective functions associated with career mentoring.

With respect to objective career success, research consistently shows that organizational support from leaders positively influences merit pay (Dreher & Ash, 1990; Scandura & Schriesheim, 1994; Allen *et al.*, 2004). Despite this progress, there is a gap in our understanding of the comparative influence of these support mechanisms on merit pay. One study has examined the influence of career and psychosocial mentoring on career outcomes, finding that career mentoring was more strongly related to objective outcomes (such as merit pay) and psychosocial mentoring was more strongly related to subjective outcomes; however, the authors found mixed support for these relationships (Allen *et al.*, 2004). Given these inconsistent findings in the literature, there is a need to further our understanding of how mentoring influences organizational commitment and merit pay for IT workers.

We expect that both forms of mentoring will have a positive impact on organizational commitment for three primary reasons that we elaborate on later: (1) mentors enhance protégé integration by encouraging adoption of organizational values; (2) mentors provide support that can reduce protégé stress; and (3) mentors facilitate relationships that can be personally and professionally rewarding for protégés. When protégés reciprocate by adopting organizational values, accepting mentor support to enhance their well-being and leveraging relationships, our SET–AET framework suggests that this successful exchange should translate into positive moods and emotions that drive attitudes about the organization.

First, according to Viator & Scandura (1991), mentoring promotes adoption of organizational values, thus facilitating identification with the organization. Social and advisory support provided by psychosocial mentoring (Dreher & Ash, 1990) can demonstrate and reinforce behavioural norms in the organization, while career mentoring involves coaching activities (Dreher & Ash, 1990) that can attune the protégé to sense and respond to expectations governing career advancement. Such activities can help a protégé better understand the organizational climate and be more socially integrated in the organization. Second, mentoring promotes coping strategies that will allow protégés to have more positive experiences at work, according to Scandura (1997). Psychosocial mentoring encourages protégés to share their anxiety and concerns with others (Dreher & Ash, 1990). This gives mentors opportunities to provide emotional support, feedback and encouragement to help reduce protégés' stress and anxiety. Research shows that mentoring that includes psychosocial support is effective in helping reduce feelings of isolation and aid integration (Panteli, 2012). Career mentoring involves sponsorship and advocacy as well as help build a professional network (Dreher & Ash, 1990). These activities can serve to buffer protégés from stressful situations or provide resources to help better cope with stressful situations. In doing so, mentors can contribute to protégés having more positive and pleasant experiences that can engender greater attachment to the organization. Third, mentoring facilitates relationship building that research shows can translate into positive work attitudes and valuable social capital (Hezlett & Gibson, 2007). Through the process of sharing personal experiences, values and attitudes between mentor and protégé, psychosocial mentoring can lead to interpersonal bonding (Dreher & Ash, 1990). In a similar fashion, career mentoring facilitates relationship building by way of sponsorship and increasing protégé visibility within the organization, which can introduce the protégé to new contacts and alliances (Dreher & Ash, 1990). This should have a positive impact on organizational commitment because it represents valuable social capital that is tied to the work environment. As protégés build relationships

with and through their mentors, they are engaging in social exchanges that can be personally and professionally rewarding. Thus, we hypothesize the following:

Hypothesis 1a: Psychosocial mentoring will have a direct, positive influence on organizational commitment of IT workers.

Hypothesis 1b: Career mentoring will have a direct, positive influence on organizational commitment of IT workers.

We expect that both forms of mentoring will also have a positive impact on merit pay. Several recent meta-analyses demonstrate that mentored workers have more positive objective career outcomes, such as higher salaries, more promotions and advancement, compared with those without a mentor (Allen *et al.*, 2004; Eby *et al.*, 2008; Kammeyer-Mueller & Judge, 2008). A primary mechanism by which this occurs is the information exchange and knowledge acquisition that is part of the psychosocial mentoring process (Mullen, 1994). Information exchange and knowledge acquisition are important drivers of performance and, as such, play a key role in facilitating merit pay. Psychosocial mentoring involves information exchange and knowledge acquisition via role modelling and counselling, providing a protégé with information about appropriate attitudes, values and behaviours that are important for success in the organization (Noe, 1988). On the basis of this social exchange, prior research suggests that protégés develop greater confidence, self-esteem and a general sense of competence through psychosocial mentoring (Koberg *et al.*, 1998). Psychosocial mentoring is found to lead to higher levels of career motivation (Day & Allen, 2004), suggesting that this form of support plays an important role in fueling ambition and drive that can translate into outcomes such as merit pay.

Career mentoring is also expected to positively influence merit pay. The very behaviours associated with career mentoring are focused on preparing protégés for career advancement (Dreher & Ash, 1990; Allen *et al.*, 2004). Career mentors serve to increase the visibility and exposure of a protégé that can provide access to social capital and informational resources (Dreher & Ash, 1990). Mentors also help to provide protégés with challenging assignments that, when acted upon, can hone protégés' skills. Mentors act as an advocate or sponsor of their protégés, using their influence to gain desirable assignments or positions (Dreher & Ash, 1990). When protégés reciprocate by leveraging these benefits, they are likely to enhance their performance and, by extension, merit pay. Moreover, when protégés leverage these benefits, this should enhance their mentor's positive affect and attitudes toward them, resulting in further mentoring efforts and positive appraisals of the protégé that can lead to merit pay. Thus, we hypothesize the following:

Hypothesis 2a: Psychosocial mentoring will have a direct, positive influence on merit pay of IT workers.

Hypothesis 2b: Career mentoring will have a direct, positive influence on merit pay of IT workers.

Leader–member exchange

In their meta-analysis, Mathieu & Zajac (1990) found strong support for leader–member variables as antecedents to organizational commitment. As with mentoring, SET–AET suggests that successful exchange in an LMX relationship should yield positive moods and emotions that translate into organizational commitment. When the quality of LMX is high, Graen & Uhl-Bien (1995) found that leaders and subordinates enjoy a relationship of mutual trust and respect. This should enhance organizational commitment when reciprocated because the subordinate feels supported by his or her supervisor, which makes for a more positive experience at work. Moreover, leaders may be viewed as an extension of the organization. They often have longer tenure than subordinates, are in a position of authority and thus can be seen as a spokesperson or representative of the organization. To the extent that subordinates respect their supervisor and extend these positive feelings to the organization, they should have stronger organizational commitment. In addition to supportiveness, high-quality LMX is described as being characterized by subordinates having greater decision-making authority (Scandura *et al.*, 1986). When subordinates act on this authority, research shows that this enhances their task meaningfulness and provides a sense of impact on the organization (Liden *et al.*, 2000). Decision-making authority should also promote positive affect in the form of organizational identification and lead to stronger affective commitment because subordinates feel responsible for those activities that influence organizational outcomes. Thus, we hypothesize the following:

Hypothesis 3: LMX will have a direct, positive influence on organizational commitment of IT workers.

LMX is also expected to have a direct, positive influence on merit pay. The primary mechanism by which this occurs is through performance improvements brought about by LMX. Prior research demonstrates that high-quality LMX has a positive influence on subordinate performance (Scandura & Schriesheim, 1994; Liden *et al.*, 1997; Wayne *et al.*, 1997). SET–AET suggests that subordinates who feel they have been supported by their leaders (e.g., through a high-quality LMX) will tend to reciprocate by performing better, thus improving chances for merit pay. Moreover, subordinates who report high LMX are found to contribute to the organization in ways that go beyond their formal job duties (Liden & Graen, 1980). High-quality LMX involves more pleasant and productive interaction that should stimulate greater contact between leader and subordinate, as well as higher awareness and consideration for the subordinate on the part of the leader when leader efforts are reciprocated. This will serve to benefit subordinates because leaders should be more inclined to provide additional support, feedback, resources and opportunities, and to provide more positive performance appraisals (Wayne *et al.*, 1997). Thus, we hypothesize the following:

Hypothesis 4:LMX will have a direct, positive influence on merit pay of IT workers.

Moderation by ethnic minority status

The effect of leader support, such as mentoring and LMX, on organizational commitment and merit pay can be influenced by how much value an employee places on the nature of the support and outcomes associated with it. For example, career mentoring is argued to be more tied to instrumental or extrinsic outcomes related to career advancement, while psychosocial mentoring and LMX are tied more to social fulfilment and psychological well-being (Baugh *et al.*, 1996). To the extent that a person places more value on a type of work support and its associated outcomes that support mechanism should have a stronger influence on organizational commitment. We expect ethnic minorities will place more value on psychosocial fulfilment in driving their affective commitment, compared with instrumental (i.e., career mentoring) support.

Being part of an ethnic minority has effects on an individual's affective experiences at work. Research finds that ethnic minorities report increased feelings of isolation, lowered identification with coworkers and workgroups, and exclusion from formal and informal networks (Lincoln & Miller, 1979; Ibarra, 1995). Zimmermann *et al*. (2013) observed that ethnic differences also contribute to fragmentation of workgroups that can lead to marginalization of smaller subgroups, particularly in the virtual team and offshoring contexts that are so prevalent in the IT industry. Ethnic minorities have also reported feeling less social acceptance at work, leading to lower career satisfaction (Greenhaus *et al.*, 1990), and yet for some, social outcomes at work have been reported as being among the most important work values (Kashefi, 2011). McNeely (1992) found that minority workers who identified with their organization and felt included had higher job satisfaction and commitment. Based on this research, we argue that minorities will place more value on leader support that can help them overcome isolation and exclusion, compared with ethnic majorities. By conveying their respect, empathy and understanding, psychosocial mentoring and LMX are means for leaders to signal social inclusion and acceptance, and thus foster belonging and identification with the organization. Thus, we hypothesize the following:

> Hypothesis 5a: Psychosocial mentoring and LMX will have a stronger positive influence on organizational commitment for ethnic minority IT workers than for ethnic majorities.

From Maslow (1943) and Alderfer's (1972) long-standing work on motivation to more recent research on belonging uncertainty and achievement (Walton & Cohen, 2007), much research points to belonging needs preceding achievement needs. Belonging is so important, in fact, that Walton & Cohen's (2007) work shows that it can impact performance. Their intervention that was designed to satisfy feelings of belonging resulted in increased performance by ethnic minorities but not ethnic majorities. They reason that perceptions of exclusion produce counterproductive stress and anxiety that derails motivation and that ethnic minorities experience this stress, while ethnic majorities do not. We theorize that because ethnic majorities' needs related to belonging and inclusion are more likely to be met, while those of ethnic minorities are less likely to be met, ethnic majorities are likely to place more emphasis on fulfilling their achievement and career growth needs. To the extent that majorities focus more on fulfilling achievement and career growth needs, they should be more likely to place value on career

mentoring, which is focused on helping protégés advance and progress along their career path (Dreher & Ash, 1990). As we argue earlier, when the support offered by the organization is aligned with what an employee values – in this case, career mentoring – employees should have more positive perceptions of the organization and thus higher affective organizational commitment. Thus, we hypothesize the following:

> Hypothesis 5b: Career mentoring will have stronger positive influence on organizational commitment for ethnic majority IT workers than for ethnic minorities.

We also expect ethnic minority status to account for differences in the strength of the relationship between leader support and merit pay. According to prior research, ethnic minority workers have limited access to, or exclusion from, formal and informal social networks (Lincoln & Miller, 1979; Ibarra, 1995), limited support in career planning (Morrison, 1992), and potentially different socialization experiences due to different career paths (Brenner *et al.*, 1988), compared with majority workers. Tsui *et al.* (1992) argued that minorities face organizational climates that are at odds with their own personal experiences because these cultures are determined by the majority, resulting in a steeper learning curve for minorities. This issue may be problematic for ethnic minorities in the IT workforce, particularly for those who find it difficult to identify with an IT culture that may represent further marginalization (e.g., geek) as Guzman & Stanton (2009) pointed out. Given such difficulties, compared with ethnic majorities, ethnic minorities should benefit more from leader support that helps them integrate into the organization and provides important psychosocial support, career insight and advice. This should have positive implications for their merit pay because it may have downstream benefits for performance, visibility and sponsorship. Thus, we hypothesize the following:

> Hypothesis 6: Psychosocial mentoring, career mentoring and LMX will have a stronger influence on merit pay for ethnic minority IT workers than for ethnic majorities.

METHODOLOGY

To test our research model, we surveyed all 554 IT workers from a large Fortune 500 company in the food production industry. The data were collected during a period of relative organizational stability (i.e., no widespread layoffs), and there were no new interventions aimed at increasing mentoring or minority group support that could have impacted the results. The data collection method was an online survey. We sent all IT workers an email explaining the importance of their participation and an assurance of anonymity in order to encourage open and honest responses about their feelings toward their work. We sent two follow-up emails, spaced 2 weeks apart, resulting in 289 complete responses for a 52% response rate. Non-response bias was assessed by comparing incomplete surveys to complete surveys and by comparing early responses (before follow-up email) to late responses (after follow-up email). No systematic differences were observed, suggesting an absence of response bias. Of the 289 complete responses, the sample was 24% female and 76% male, with an average job tenure of 9.64 years (SD = 7.18).

Measures

Career and psychosocial mentoring

The mentoring scales are taken from Dreher & Ash (1990) and measured on a 5-point Likert scale ranging from 'not at all' (1) to 'a very large extent' (5). Career mentoring ($\alpha = 0.94$) consists of eight items, including 'To what extent have you had a mentor who has…"given or recommended you for assignments that have increased your contact with higher level managers" and "given or recommended you for challenging assignments that present opportunities to learn new skills" '. Psychosocial mentoring ($\alpha = 0.95$) is composed of 11 items, including 'To what extent have you had a mentor who has…"shared personal experiences as an alternative perspective to your problems" and "provided suggestions concerning problems you have encountered at work" '.

Leader–member exchange

Items used to assess LMX ($\alpha = 0.95$) are taken from Wayne *et al*. (1997) and measured on a 7-point Likert scale ranging from 'strongly disagree' (1) to 'strongly agree' (7). There are seven items including 'I usually know where I stand with my manager' and 'My working relationship with my manager is effective'.

Organizational commitment

The items for organizational commitment ($\alpha = 0.91$) are taken from the same source and with the same response format as LMX. There are seven items in total, including items such as 'I talk up employment in this organization to friends as a great place to work' and 'I am proud to tell others that I work for this organization'. The full measurement scales are included in the Appendix.

Merit pay

Merit pay was assessed via a one-item measure that asked, 'How many base pay increases have you had over the past five years, if any?' This was limited to the prior 5 years to improve participant recall. Instructions on the survey told participants to consider only those pay increases that were based on annual merit pay reviews.

Ethnicity

The sample was 85% White, 4% Hispanic, 2% Asian/Pacific Islander/Indian, 2% Black/Non-Hispanic, 1% Native American/Alaskan Native/Hawaiian Native and 6% (were of) another ethnicity. These ethnic categories were adopted from the US Census Bureau's 2010 census. Given the distribution of ethnicities across our sample, ethnicity was dummy-coded as 1 for ethnic minorities (all ethnicities except for 'White') and 2 for ethnic majorities (only 'White'). The sample is generally reflective of the reported distribution of ethnicities in the US IT workforce, although it has a slightly higher representation of Whites and slightly lower representation of Asians than has been reported for the US IT workforce (US Bureau of Labor Statistics, 2013). We believe this skew can be primarily attributed to the organization being located in the mid-south USA, which has one of the highest percentages of Whites (US Census Bureau, 2012d) and one of the smallest percentages of Asians in the USA (US Census Bureau, 2012a).

Control variables

In addition to measuring the preceding variables, we also included gender, organizational tenure, IT job role and branch location as control variables in our analysis. Gender was coded as a dichotomous variable with 1 representing women and 2 representing men. Gender was included to account for potential discrimination that could impact access to resources and organizational experiences. Organizational tenure was measured as the number of years the participant had been employed by the organization. It was included to account for differences in access to leader support (i.e., longer tenure would provide more opportunities for mentoring and development of leader–member relationships). IT job role was coded as a dummy variable with 1 representing technical IT job roles (developer/programmer and architect/engineer) and 2 representing managerial IT job roles (analyst, team/project lead and manager). IT job role was included to account for differences in the type of support sought as well as differences in pay that could impact merit pay increases. Finally, branch location was coded as 1 for participants located at branches in the same geographic region as the corporate headquarters and 2 for branches located outside this region. Key personnel and high performers are often located in or near corporate headquarters, which could influence career trajectories (and thus the type of mentoring sought), as well as merit pay.

RESULTS

We used Partial Least Squares (PLS; SmartPLS, version 2.0.M3) to analyse the data. With PLS, the psychometric properties (i.e., measurement model) of the scales are examined in concert with the structural model being assessed. The measurement model provides an assessment of the reliability and validity of the scales. We assessed the measurement model first to determine which items were not loading highly on their respective factor. Items were systematically dropped until all item loadings were acceptable, with consideration given for ensuring that the dropped items did not fundamentally change the nature of the construct. Those items that were ultimately retained are noted in the Appendix.

We assessed the measurement model using the combined sample of all participants, as well as the measurement models for the subsamples of ethnic minorities and majorities. The measurement models for the subsamples were highly similar to the combined sample; thus, we report the results for the combined sample. The loadings are shown in Table 1. Consistent with exemplars for assessing validity and reliability (Chin *et al.*, 2003; Vinzi *et al.*, 2010), all internal consistency reliability values were greater than 0.90, providing support for acceptable reliability. All loadings were greater than 0.70 on their respective factor, supporting convergent validity. Discriminant validity was supported in the case of LMX and organizational commitment, as all cross-loadings were below 0.40; however, discriminant validity was a concern in the case of career and psychosocial mentoring and organizational commitment, which showed high cross-loadings. For these constructs, a more in-depth examination was used to assess discriminant validity.

We used the method recommended by Fornell & Larcker (1981) that compares the square root of the average variance extracted (AVE) to the correlations among the constructs.

Table 1. ICRs, loadings and cross-loadings for combined sample

		1	2	3	4
	ICR	0.95	0.96	0.94	0.96
1	CMentor_1	**0.87**			0.66
	CMentor_2	**0.91**			0.61
	CMentor_3	**0.91**			0.58
	CMentor_4	**0.92**			0.68
	CMentor_7	**0.84**			0.69
2	LMX_1		**0.87**	0.35	
	LMX_2		**0.89**		
	LMX_3		**0.89**	0.35	
	LMX_4		**0.88**	0.41	
	LMX_5		**0.86**		
	LMX_6		**0.87**	0.41	
	LMX_7		**0.83**		0.41
3	OrgComm_3		0.36	**0.83**	
	OrgComm_4		0.37	**0.91**	
	OrgComm_5		0.37	**0.89**	
	OrgComm_6			**0.82**	
	OrgComm_7		0.37	**0.86**	
4	PMentor_1	0.68			**0.86**
	PMentor_10	0.63			**0.87**
	PMentor_11	0.61			**0.86**
	PMentor_2	0.65	0.36		**0.88**
	PMentor_4	0.51			**0.82**
	PMentor_5	0.58			**0.82**
	PMentor_6	0.53			**0.82**
	PMentor_7	0.61			**0.87**
	PMentor_8	0.64		0.36	**0.82**

Note: Loadings < 0.35 are not shown to improve readability. ICR, internal consistency reliability; CMentor, career mentoring; LMX, leader–member exchange; OrgComm, organizational commitment; PMentor, psychosocial mentoring.
The bold emphasis of the values show the primary factor on which an item loaded.

Discriminant validity is established if the square root of the AVE is larger than the correlations among constructs. As shown in Table 2, the square root of the AVE is larger than the inter-construct correlations, confirming discriminant validity for these constructs. In addition, Gefen & Straub (2005, pp. 93–94) suggested that when using PLS and assessing validity, 'all the loadings of the measurement items on their assigned latent variables should be an order of magnitude larger than any other loading. For example, if one of the measurement items loads with a .70 coefficient on its latent construct, then the loadings of all the measurement items on any latent construct but their own should be below .60.' This was the case with our model, providing further support for discriminant validity.

Direct effects for the combined sample

Table 2 presents the descriptive statistics, correlations and reliabilities. From this analysis, we observed some preliminary support for the model. Organizational commitment was significantly

Table 2. Correlations and reliabilities for combined sample

		M	SD	1	2	3	4	5	6	7	8	9	10
1	Gender	1.76	0.42	NA									
2	Org tenure	9.65	7.18	−0.02	NA								
3	IT job role	1.49	0.50	−0.04	−0.10	NA							
4	Branch location	1.09	0.29	0.00	0.00	−0.12*	NA						
5	Ethnic minority status	1.84	0.36	−0.06	0.23**	−0.01	−0.27**	NA					
6	Psych-soc mentoring	2.39	0.98	0.00	−0.21**	0.05	−0.03	−0.22*	**0.85**				
7	Career mentoring	2.30	1.04	0.06	−0.16**	0.17**	0.00	−0.20**	0.72**	**0.89**			
8	LMX	5.01	1.31	−0.02	0.01	−0.02	−0.08	−0.14*	0.38**	0.28**	**0.87**		
9	Org commitment	4.98	1.24	−0.19**	−0.10	−0.03	0.00	−0.24**	0.30**	0.32**	0.42**	**0.86**	
10	Merit pay	1.54	1.84	−0.17**	−0.05	0.02	−0.08	0.03	0.08	0.06	0.05	0.07	NA

Note: *$p < 0.05$; **$p < 0.01$; NA, not applicable; diagonal elements are the square root of the AVE; off-diagonal elements are the correlation; gender was dummy-coded as 1 for women and 2 for men; IT job role was dummy-coded as 1 for technical IT job roles and 2 for managerial IT job roles; branch location was dummy-coded as 1 for branches located in the same state as the corporate headquarters and 2 for North American branches located outside the same state as the corporate headquarters; ethnicity was dummy-coded as 1 for ethnic minorities and 2 for majorities.

and positively correlated with both forms of mentoring, as well as LMX. However, merit pay was not significantly correlated with either form of mentoring or LMX.

Table 3 presents the results of the structural model test for the combined sample (both minorities and majorities). We used a bootstrap procedure, using 1000 iterations, to generate *t*-values that would allow us to estimate the corresponding *p*-values. The results showed that psychosocial mentoring did not have a significant effect on organizational commitment or merit pay. Thus, H1a and H2a were not supported. In the case of career mentoring and LMX, we observed significant, positive effects on organizational commitment, thus fully supporting H1b and H3. LMX had the strongest impact on organizational commitment, followed by career mentoring, gender and ethnic minority status, respectively. The model explained 29% of the variance in organizational commitment. Neither career mentoring nor

Table 3. Structural model results for combined sample

	Org commitment		Merit pay	
DV	β	*t*	β	*t*
Gender	−0.22**	4.33	−0.17**	2.82
Org tenure	−0.04	1.07	−0.04	1.08
IT job role	−0.07	1.59	0.00	0.00
Branch location	0.03	0.81	−0.07	1.42
Ethnic minority status	−0.16**	3.25	0.03	0.79
Psych-soc mentoring	0.00	0.29	0.02	1.00
Career mentoring	0.22**	2.90	0.02	0.40
LMX	0.34**	5.48	0.03	0.67
R^2	0.29		0.05	

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

LMX positively influenced merit pay; thus, H2b and H4 were not supported. The structural model results are shown in Figure 2.

Moderation by ethnic minority status

We next turn to examination of the differences in these relationships across ethnic minority status. The correlations and descriptive statistics for each subsample are shown in Table 4 and are suggestive of differences according to ethnic minority status. For example, the correlation between LMX and organizational commitment was much larger for minorities (0.56**), compared with majorities (0.37**), while the relationship between career mentoring and organizational commitment was much larger for majorities (0.31**), compared with minorities (0.12 NS). In terms of merit pay differences, none of the leader support variables were significantly correlated with merit pay, although the correlations were all stronger for majorities, compared with minorities. To further examine possible differences, we analysed the model in PLS using a subsample

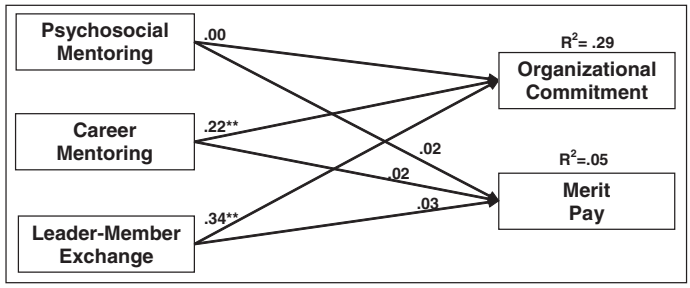

Figure 2. Structural results for combined sample.

Table 4. Correlations by ethnicity

	Minority		Majority										
	M	SD	*M*	SD	1	2	3	4	5	6	7	8	9
1 Gender	1.82	0.39	1.75	0.43		−0.01	−0.07	−0.02	0.00	0.00	−0.01	−0.24**	−0.20**
2 Org tenure	5.87	5.53	10.34	7.24	0.03		−0.10	0.08	−0.15*	−0.11	0.06	−0.02	−0.08
3 IT job role	1.51	0.51	1.49	0.50	0.13	−0.11		−0.10	0.03	0.16*	−0.02	−0.03	−0.03
4 Branch location	1.27	0.44	1.06	0.23	0.02	0.04	−0.21		−0.09	−0.13	−0.09	−0.08	−0.02
5 Psych-soc mentoring	2.90	0.94	2.29	0.96	−0.09	−0.24	0.02	−0.14		0.74**	0.35**	0.27**	0.08
6 Career mentoring	2.78	1.03	2.22	1.02	0.40**	−0.18	0.22	0.14	0.49**		0.28**	0.31**	0.08
7 LMX	5.43	1.09	4.93	1.34	−0.13	−0.11	−0.10	−0.27	0.39*	0.17		0.37**	0.08
8 Org commitment	5.66	1.13	4.85	1.23	−0.08	−0.27	−0.06	−0.04	0.22	0.12	0.56**		0.10
9 Merit pay	1.42	1.60	1.56	1.88	0.09	0.17	0.35*	−0.29*	0.17	0.13	−0.12	−0.06	

Note: *$p < 0.05$; **$p < 0.01$; NA, not applicable; correlations above the diagonal are for majorities, and those below the diagonal are for ethnic minorities; gender was dummy-coded as 1 for women and 2 for men; IT job role was dummy-coded as 1 for technical IT job roles and 2 for managerial IT job roles; branch location was dummy-coded as 1 for branches located in the same region as the corporate headquarters and 2 for branches located outside the region of the corporate headquarters; ethnicity was dummy-coded as 1 for ethnic minorities and 2 for majorities.

approach that involves separating the data by ethnic minority status and comparing the results across the two subsamples. This approach is recommended when examining moderation by categorical variables (Henseler & Fassott, 2010). Prior research has tended to simply compare the path coefficients of different subsamples to determine differences among groups. Recent work, however, has pointed out that it is necessary to conduct a statistical test in order to validate differences between the path coefficients. According to this procedure, a *t*-test is conducted using the following formula (Sanchez-Franco, 2006).

$$t = \frac{\beta_{\text{group1}} - \beta_{\text{group2}}}{\text{Sp}^* \sqrt{\frac{1}{m} + \frac{1}{n}}}$$

$$\text{Sp} = \sqrt{\frac{(m-1)}{(m+n-2)}^* \text{SE}^2_{\text{group1}} + \frac{(n-1)}{(m+n-2)}^* \text{SE}^2_{\text{group2}}}$$

This procedure follows a *t*-distribution with $m + n - 2$ degrees of freedom. The pooled estimator for the variance is given by Sp, where *m* and *n* represent the sample sizes for group1 and group2, respectively. SE is the standard error of the path in the structural model. If the *t*-test statistic is significant, one can conclude that there is a significant difference between the paths of the two samples.

Table 5 provides the results of this analysis. These results show that there were significant differences in the impact of both career mentoring and LMX on organizational commitment and in the impact of psychosocial mentoring on merit pay. The positive impact of LMX on organizational commitment was stronger for minorities than for majorities. However, psychosocial mentoring did not significantly impact organizational commitment. Thus, H5a was partially supported. The positive impact of career mentoring on organizational commitment was stronger

Table 5. Structural model results for subsamples of ethnic minority and majorities

	DV: Organizational commitment					DV: Merit pay				
	Minority		Majority		Minority vs. majority	Minority		Majority		Minority vs. majority
	n = 45		*n* = 244			*n* = 45		*n* = 244		
	β	t°	β	t°	$t^\dagger$	β	t°	β	t°	$t^\dagger$
Psych-soc mentoring	−0.04	0.40	0.01	0.13	–	0.34*	2.04	0.03	0.54	16.83**
Career mentoring	−0.01	0.05	0.23**	2.83	5.92**	0.15	1.23	0.03	0.46	–
LMX	0.62**	5.20	0.30**	4.48	21.75**	−0.21	1.79	0.06	1.22	–
Gender	0.01	0.08	−0.24**	4.35	26.49**	0.11	1.23	−0.21**	3.50	26.49**
Org tenure	−0.20	1.77	−0.01	0.41	–	0.24	1.48	−0.08	1.83	–
IT job role	0.00	0.05	−0.08	1.59	–	0.31**	2.67	−0.05	1.23	23.61**
Branch location	0.12	1.25	−0.04	1.13	–	−0.21*	1.96	−0.00	0.22	30.51**
R^2	0.40		0.30			0.25		0.06		

Note: *$p < 0.05$; **$p < 0.01$; t°-values generated by bootstrap analysis; $^\dagger t$-values generated by formula for multi-group comparison.

for majorities than for minorities, providing full support for H5b. Interestingly, career mentoring was not significant in impacting organizational commitment for minorities. This model explained 40% of the variance in organizational commitment of minorities and 30% of the variance in organizational commitment of majorities.

In terms of merit pay, only the influence of psychosocial mentoring differed according to ethnic minority status. The positive influence of psychosocial mentoring on merit pay was stronger for ethnic minorities. It was non-significant for ethnic majorities. Thus, H6 was partially supported. This model explained 25% of the variance in merit pay of minorities and 6% of the variance in merit pay of majorities. The final structural model is shown in Figure 3. The implications of these findings are discussed in the next section. While non-significant, it is interesting to note that the relationship between LMX and merit pay was unexpectedly negative for minorities. Because of the relatively larger coefficient ($\beta = -0.21$) and small sample size for the ethnic minority group, it is likely that there was simply not enough power to detect this relationship, but that with a larger sample size, it could be significant.

In summary, our findings show that career mentoring and LMX positively influenced organizational commitment, while psychosocial mentoring did not. None of the leader support variables predicted merit pay for a combined sample of all IT workers. However, we observed differences in the strength of these relationships, according to ethnic minority status. The relationship between career mentoring and organizational commitment was stronger for ethnic majorities vs. minorities. The relationship between LMX and organizational commitment and between psychosocial mentoring and merit pay was stronger for ethnic minorities.

DISCUSSION

Implications and future research

Our research objective was to explore the implications of ethnic minority status for the relationship between leader support and subjective and objective indicators of career success among IT workers. Our results suggest some actionable heuristics that organizations can use to design policy and interventions in support of a diverse workforce. First, managers and policy makers concerned with organizational commitment are encouraged to pay particular attention to

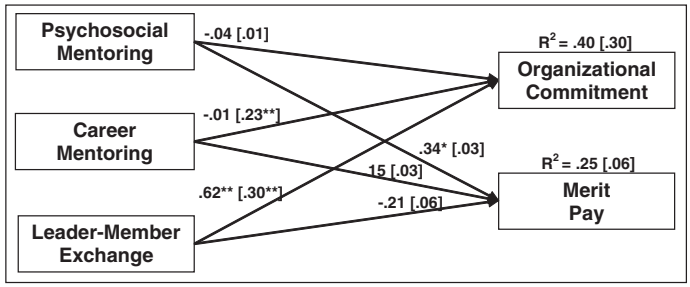

Figure 3. Structural results for ethnic minority and majority groups. *Note: Values for the ethnic majority group are shown in square brackets.*

fostering positive leader–member relationships among ethnic minorities and to promote career mentoring among majorities. This is not to suggest that ethnic minorities should not receive career mentoring or that LMX is not important for majorities. We believe organizations should provide opportunities for both mentoring and LMX, irrespective of the ethnic composition of their organization, because a multitude of research demonstrates benefits of both for a variety of outcomes. Rather, we suggest that managers and policy makers with a particular interest in organizational commitment or merit pay explore opportunities to foster these forms of leader support in ways that our results show are especially beneficial for ethnic minorities and majorities. Managers would also be astute to identify those leaders who work well with minority employees and create a repository of suggestions or insights for use by all leaders throughout the organization.

A second heuristic is suggested by our finding that ethnic minorities benefit more from psychosocial mentoring, compared with ethnic majorities. To enhance their opportunities to achieve merit pay, we encourage managers to focus on providing ethnic minorities with psychosocial mentoring and outlets where they can seek out psychosocial support. Executive management should explore ways to increase psychosocial mentoring opportunities within their firms by offering programmes focused on social acceptance and providing appropriate venues (e.g., affinity groups) for minority employees to share personal experiences and concerns in a protected environment. Implementation of people-focused strategies may enhance both subjective and objective indicators of career success and create a more inclusive environment that is conducive to a diverse IT workforce.

Our results suggest that more research should be conducted regarding psychosocial mentoring to further explicate the potential importance this form of mentoring may have for ethnic minorities. Psychosocial mentoring was tied to an objective indicator of career success and merit pay, and not to a more subjective indicator, organizational commitment. However, this result was found in the case of ethnic minority workers only. To the extent that psychosocial mentoring can enhance feelings of belonging and to the extent that merit pay reflects performance, our work is consistent with Walton & Cohen's (2007) study, which found that ethnic minorities' feelings of belonging can impact their performance. It stands to reason that those who perceive a certain form of leader support are more likely to benefit from it. Psychosocial mentoring is likely to be more beneficial to ethnic minorities because they may tend to feel more marginalized and isolated, and this form of mentoring helps them feel more integrated and more accepted, and experience a sense of belonging. Integration and acceptance may help boost performance and thus merit pay because minority workers should be more likely to contribute their ideas, reach out to coworkers for help and build networks that are beneficial to their careers.

We found that career mentoring was not significantly related to organizational commitment for ethnic minorities but it was significant for ethnic majorities. Conversely, LMX had a stronger impact on organizational commitment for ethnic minorities compared with majorities, consistent with prior findings that some minorities place more value on relationally focused career outcomes (Kashefi, 2011). One potential explanation for these outcomes has to do with the focus of mentoring vs. LMX. Research finds that 'by signaling their own acceptance of employees of various backgrounds through the establishment of high-quality relationships

with them, group leaders can promote norms about equality and inclusion that will facilitate greater power sharing and improve reciprocal exchanges among group members' (Nishii & Mayer, 2009: 1413). While career mentoring may involve fostering protégé visibility, particularly among those in the upper echelons of the organization, career mentoring does not serve the function of fostering inclusiveness among peers and thus may be less salient to ethnic minorities.

Another potential explanation for the impacts of leader support in our study may involve differences in organizational tenure between the minority and majority ethnicities. In our sample, ethnic minorities' tenure was about half that of ethnic majorities. It is possible that the type of mentoring sought out is partially a function of career stage. Perhaps minorities are less likely to seek out career mentoring because their shorter tenure means they are more focused on fitting in with the organization. More research is needed to explore these potential explanations for our findings and to examine other reasons why organizational commitment is driven more by career mentoring for majorities and by LMX for ethnic minorities.

The inclusiveness fostered by high-quality LMX has been found to decrease the influence of ethnic diversity on turnover intention (Nishii & Mayer, 2009) and should have implications for organizational commitment as well. To the extent that minorities experience inclusiveness due to high LMX, they are more likely to see themselves as part of the organization and thus to have higher organizational commitment. The salience of inclusion and belonging for minorities may also explain the unexpected negative effect of LMX on merit pay for ethnic minorities in our sample. Perhaps minorities with high LMX feel apprehensive discussing merit increases for fear that they will negatively affect the productive relationship they have with their supervisor. In other words, high-quality LMX may cause minority ethnicities to avoid the risk of souring the relationship with their supervisor by pressing for merit pay. Future research should explore this possibility as well as cultural aspects of ethnicity possibly hindering one from pressing for merit pay or engaging in self-promotion behaviours that could influence merit pay.

Considering that our population of interest is ethnic minorities in the IT workforce, our research context – the US IT workforce – is important to keep in mind in light of our findings and highlights several possible directions for future research. One question that pervades research on minorities is whether or to what extent observed outcomes can be attributed to minority status (and the isolation, visibility and discrimination that can come with it), and what effects can be attributed to the specific culture or attributes of that particular group, irrespective of minority status. Moreover, what effects can be attributed to being of a particular ethnicity *and* a minority? For example, in the case of this study, would our findings be reversed if Whites were the minority? Is there an ethnic in-group/out-group phenomenon responsible for the findings or are the effects determined by the particular cultures and characteristics of Whites vs. those of Hispanics, Asians, Blacks and other ethnicities in our minority group sample? Ethnic differences are often part of the underlying cause of coalitional in-group/out-group behaviours because ethnicity is one of the more overt personal characteristics. For example, research shows that work teams can fracture into subgroups based on faultlines – hypothetical dividing lines that split a heterogeneous team into smaller homogenous subgroups based on shared characteristics like gender and ethnicity (Lau & Murnighan, 2005). Determining the extent to

which minority status, ethnic culture or a combination of the two accounts for a particular effect is a complex undertaking. It is unlikely to be resolved by any one study, but future research can shed light on the distinct effects of culture and minority group status by investigating their impact in multiple countries and cultures.

A related area of exploration for future research lies at the intersection of minority ethnicity status and IT job. In this study, IT job role was used as a control variable to distinguish between the technical and the managerial IT positions because one of the dependent variables of interest was merit pay. In future research, IT job roles should be more deeply explored to shed light on how they interact with ethnic minority status in explaining differences in organizational commitment and merit pay. For example, the higher visibility incurred by being a minority *and* an IT manager may have different implications for indicators of career success, compared with minorities in non-managerial roles or compared with majorities in managerial roles. Additional research is needed to tease out such nuance.

Limitations

Although our results shed light on the drivers of organizational commitment and merit pay, they should be considered in light of the limitations of our study design. First, we studied only one type of worker, IT professionals, in one industry, food production. It is possible that unique qualities of IT work may impact the results observed. Future research should look to other types of work, in various industries, to determine whether these relationships generalize to a broader sample of workers.

In addition, examination of other demographic groupings and social strata will provide a richer and more equitable treatment of career outcomes for IT workers as Berente *et al.* (2011) call for. Moreover, our sample size restricted our ability to look at more nuanced differences say those within ethnic groups or at the intersection of ethnicity and gender as called for by Trauth *et al.* (2012). Important differences across a variety of demographic and identity attributes, such as cultural background, socio-economic status and age, have been identified in the literature, and these bear further investigation in the context of leader support, organizational commitment and merit pay. Such issues are particularly relevant for the IS and IT workforce literature given the increasing prevalence of globally distributed teams and, as other research points out, the higher likelihood that such teams have a diverse membership (Griffith *et al.*, 2003; Martins *et al.*, 2004). We encourage researchers to explore not only different attributes but also multiple attributes. Theories related to multiple self-identities (e.g., social construction theory) have been applied in the IT workforce literature and represent a possible avenue for exploring how multiple identity attributes contribute to how IT workers view their jobs (Richardson *et al.*, 2005; Adam *et al.*, 2006; Kvasny, 2006).

Second, we acknowledge that the results of the study may vary by cultural context. It is possible that the needs and preferences that drive perceptions of leader support are specific to the cultures of the ethnicities in our study. This means that the generalizability of our results may be limited. Our sample did not include as large a proportion of Asians as that of the general US IT workforce. While we developed our theoretical justification from research that cut across multiple cultures, this is a limitation that can only be completely ruled out with

data collection from multiple localities. Moreover, because of the obvious challenges of low statistical power in quantitative studies of minority workers, qualitative research represents a complementary approach to augment future research. Such future research might benefit from applying an individual differences perspective to explore how the confluence of identity characteristics, individual influence, cultural characteristics and environmental influence accounts for differences in how IT workers experience and respond to their work (Trauth, 2002, 2006).

Third, our findings must be considered in light of the fact that our data were collected at a single point in time and that there were constraints on the richness of the data we were able to collect. Relationships evolve over time, and a protégé's relationship with his or her mentors may evolve. A career mentor may become a psychosocial mentor and vice versa as the needs of the protégé change and their career progresses. Future researchers seeking to broaden our understanding of these forces will want to examine how these relationships and pressures change over time. Therefore, we suggest longitudinal studies be applied to examine mentoring and the changes in leader–member relationships. More nuanced data related to the nature and extent of mentoring relationships could also help shed additional light on effective leader support. Moreover, it would be interesting to explore whether the needs of different IT job roles influence the type of support that is beneficial. Future research might also explore formal vs. informal mentoring, in-unit vs. outside-unit mentoring, gender pairing of mentors and protégés, and involvement in internal and external affinity groups.

Fourth, while we theorize about possible mechanisms that can explain why and how mentoring is beneficial for ethnic minorities, we did not hypothesize these as mediating mechanisms. Specifically, based on prior literature, we argue that mentoring can benefit minorities by way of higher performance, visibility and sponsorship. We did not measure these mechanisms, and we encourage researchers to consider including these, and other potential mediating variables, in future studies of leader support and career success. Such investigations will be important in furthering our understanding of why specific forms of leader support are beneficial for different constituencies.

Finally, because of the constraints of our data collection site, we were unable to gather more objective measures of mentoring, LMX, organizational commitment and merit pay. Because our measures were obtained through a single survey, from a single participant, this leaves open the possibility of common method and common source bias. Researchers should explore these relationships through both an ethnic and cultural lens to better inform and challenge extant theory. Future research will want to examine the possibility of assessing not only the protégé's perspective but also the mentor's understanding of the mentor–protégé relationship, as well. This may serve to validate the protégés' assessment of the degree and type of mentoring they receive and offer new insights from the perspective of mentors.

CONCLUSION

The current study makes several contributions to theory and practice. First, we contribute to the IT workforce literature an exploration of the needs of ethnic minorities and identify suggestions

for ways to support and retain this underrepresented group in the IT workforce. Trauth & Niederman (2006) pointed out that the literature has largely overlooked issues surrounding ethnic minorities in the IT workforce. This is a critical gap considering the growing numbers of ethnic minorities among populations across the globe and the demonstrated benefits of a diverse workforce, including team effectiveness, productivity, creativity and access to labour markets (Richard, 2000; Gravely, 2003; Pless & Maak, 2004; Florida, 2005; Trauth *et al.*, 2006). A primary contribution of this work is our finding that mentoring and LMX should not be a 'one size fits all' approach.

Second, we contribute to the IT workforce literature on the organizational commitment of IT workers. Previous research has examined the impact of the two types of mentoring on organizational commitment, finding that in the presence of LMX, both types of mentoring do not significantly impact the organizational commitment of public-sector IT workers (Reid *et al.*, 2008). Other research shows that psychosocial mentoring helps to reduce stress and perceived workload among public-sector IT workers (Riemenschneider *et al.*, 2006a). Our analysis reveals that private-sector IT workers do not consider psychosocial mentoring to impact their organizational commitment. Moreover, career mentoring and LMX have a significant and positive effect on organizational commitment.

Panteli (2012) effectively used mentoring circles as a research intervention to aid women IT workers who were returning to the workforce after an extended leave. She did not distinguish between psychosocial and career mentoring but used a combination of both to promote engagement in the work place. The current study reinforces this prior research by demonstrating that leader support mechanisms such as mentoring and LMX can have significant implications for organizational commitment. We respond to calls for investigation of ethnic differences among IT workers and, in doing so, extend prior models of organizational commitment (Igbaria & Wormley, 1992; Thatcher *et al.*, 2002). For example, Igbaria & Wormley (1992) looked at career support as a predictor of organizational commitment. We extend their model by looking at more granular support measures – mentoring and LMX. Thatcher *et al*. (2002) looked at the impact of demographic differences (age and gender) on turnover but did not account for differences according to ethnicity. They note that future research should address additional demographic differences especially in diverse organizational settings. In their model, organizational commitment was driven by job satisfaction and job characteristics. We extend their model to account for leader support as a driver of organizational commitment and the differences in these relationships according to ethnicity. This extension helps broaden the nomological network of organizational commitment and sheds light on possible points of intervention for practitioners who want to influence organizational commitment.

Third, we contribute to the IT workforce literature an understanding of the drivers of merit pay. The IT workforce literature has largely overlooked merit pay. In fact, we were unable to find any studies in the IT workforce literature that examine the drivers of merit pay. This gap in our understanding is important, considering that merit pay is arguably one of the more objective reflections of performance and represents an important tool for managing performance, according to Varma *et al.* (2008). They also point out that high performers are more likely to be found at organizations having stronger merit pay systems and that merit

pay is effective across the globe in enhancing individual performance (Varma *et al.*, 2008). The only study we were able to find in the IT workforce literature that examines merit pay looks at attitudes about merit pay across ethnicities. King & Bu (2005) found that women IT workers from Shanghai perceive a stronger obligation for employers to offer merit pay compared with those from the USA or Beijing. In contrast, there were no ethnic differences regarding attitudes toward employer obligations to providing a competitive salary, demonstrating that there are important differences in objective career seniority outcomes and a need to theorize differently about various career outcomes in the IT workforce literature. More broadly, prior literature has ignored the comparative influences of mentoring and LMX on merit pay. This gap is important because linking mentoring and LMX to merit pay may go a long way toward justifying the investment of time in these behaviours for both leaders and IT workers. This represents a point of departure for practitioners looking for potential interventions to motivate these behaviours.

Finally, we contribute to the IT workforce literature and vocational behaviour literature an integration of AET and SET. We applied this integrated theory to broaden our understanding of the relative influences of mentoring and LMX on organizational commitment and merit pay. By integrating the cognitive and rational choice emphasis from SET with the emphasis on affective reactions from AET, we provide a richer explanation of how social exchange through psychosocial mentoring, career mentoring and LMX produces affective reactions that drive indicators of career success for IT workers. The integration of these two theories allows us to explore both the affective and performance-driven outcomes of the leader–member relationship while accounting for the cognitive and the affective components of the relationship. By integrating the two theories, we respond to the recognized shortcomings of each (Weiss & Cropanzano, 1996; Miller, 2005). Furthermore, the integration of the two theories allows for a more holistic lens with which to view the leader–member relationship and helps identify those components that influence indicators of career success among ethnic minorities. Successful social exchange between a mentor and a protégé produces positive emotional reactions that contribute to organizational commitment and increased effort that translates into merit pay. This social exchange is an affective event that, when successful, produces reactions and behaviours that drive indicators of career success. We thus combine the rational, relationship focus of SET with the affective focus of AET. In doing so, we shed light on the forms of leader support that appeal to IT workers and explicate the mechanisms that drive organizational commitment and merit pay.

In today's globally driven marketplace, support for the IT workers that enable organizations' global reach is increasingly important. Yet, our understanding of the different support mechanisms and their influence on organizational commitment and merit pay for IT workers requires further development. The current study represents one step toward a better understanding of how organizations can provide leader support to enhance IT workers' commitment to their organization and improve merit pay by responding to the unique needs and perceptions of ethnic minority and majority workers. We find that encouraging and facilitating leader–member relationships and providing psychosocial mentoring, especially for minority workers, and providing access to career mentoring, especially for majorities, represent important avenues for retaining and supporting IT workers.

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APPENDIX: ITEMS RETAINED IN THE FINAL MEASUREMENT MODEL ARE MARKED WITH AN (*)

PSYCHOSOCIAL MENTORING

1 Conveyed feelings of respect for you as an individual? (*)
2 Conveyed empathy for the concerns and feelings you have discussed with him/her? (*)
3 Encouraged you to talk openly about anxiety and fears that might detract from your work?
4 Shared personal experiences as an alternative perspective to your problems? (*)
5 Discussed your questions or concerns regarding feelings of competence, commitment to advancement, relationships with peers and supervisors or work/family conflicts? (*)
6 Shared history of his/her career with you? (*)
7 Provides suggestions concerning problems you have encountered at work? (*)
8 Encouraged you to try new ways of behaving on the job? (*)
9 Served as a role model?
10 Displayed attitudes and values similar to your own? (*)

Scale: 1 = Not at all to 7 = To a very large extent

CAREER MENTORING

1 Given or recommended you for challenging assignments that present opportunities to learn new skills? (*)
2 Given or recommended you for assignments that required personal contact with supervisors in different parts of the company? (*)
3 Given or recommended you for assignments that increased your contact with higher level managers? (*)
4 Given or recommended you for assignments that helped you meet new colleagues? (*)
5 Helped you finish assignments/tasks or meet deadlines that otherwise would have been difficult to complete?

6 Reduced unnecessary risks that could have threatened your opportunities for promotion?
7 Given or recommended you for assignments or tasks that have prepared you for higher positions? (*)
8 Kept you informed about what is going on at higher levels in the company or how external conditions are influencing the company?

Scale: 1 = Not at all to 7 = To a very large extent

LEADER–MEMBER EXCHANGE

1 I usually know where I stand with my manager. (*)
2 My manager has enough confidence in me that he/she would defend and justify my decisions if I was not present to do so. (*)
3 My working relationship with my manager is effective. (*)
4 My manager understands my problems and needs. (*)
5 I can count on my manager to 'bail me out', even at his or her own expense, when I really need it. (*)
6 My manager recognizes my potential. (*)
7 Regardless of how much power my manager has built into his or her position, my manager would be personally inclined to use his/her power to help me solve problems in my work. (*)

Scale: 1 = Strongly disagree 7 = Strongly agree

ORGANIZATIONAL COMMITMENT

1 I am willing to put in a great deal of effort beyond that normally expected in order to help this organization be successful.
2 I really care about the fate of this organization.
3 I am extremely glad that I chose this organization for which to work, over other organizations I was considering at the time I joined. (*)
4 I talk up employment in this organization to friends as a great place to work. (*)
5 I am proud to tell others that I work for this organization. (*)
6 I find that my values and this organization's values are very similar. (*)
7 For me, this is the best of all possible organizations for which to work. (*)

Scale: 1 = Strongly disagree 7 = Strongly agree